U.S. Department of the Interior
National Park Service

# Sequoia and Kings Canyon National Parks
## California

## Wilderness Stewardship Plan and Final Environmental Impact Statement

## Volume 1 • Chapters 1-5, Glossary, References

## April 2015

**FRONT COVER**
Fin Dome in the Rae Lakes area
Photo Courtesy of Rick Cain

# United States Department of the Interior

NATIONAL PARK SERVICE
Sequoia and Kings Canyon National Parks
47050 Generals Highway
Three Rivers, California 93271-9651


IN REPLY REFER TO:
1.A.1.

Dear Friends of Sequoia and Kings Canyon National Parks:

I am pleased to announce the release of the Wilderness Stewardship Plan and Final Environmental Impact Statement (WSP/FEIS) for Sequoia and Kings Canyon National Parks. This plan provides direction to the National Park Service (NPS) for the next 15 to 20 years as it makes decisions regarding the use and protection of the wilderness encompassed by these parks. The NPS will use the management framework established by the WSP to preserve wilderness character, to encourage and provide opportunities for public use and enjoyment of wilderness, and to improve conditions in areas where there may be unacceptable levels of impact.

Input from the public and agencies helped to shape this plan since its initiation in 2010. The parks received 255 public comments during the 60-day public review of the draft plan, released in June 2014. Key issues brought forward during the public review included visitor access, trail management, stock use, research and the use of the Redwood Canyon Cabin, and commercial services in wilderness. Revisions to the preferred alternative (alternative 2) between the draft and final plan include:

- Adding the most recent available data to the visitor capacity framework and the extent necessary determination for commercial services in wilderness;
- Clarifying the trails classification system and slightly modifying the trails open and closed to stock access;
- Allowing for the continued use of the Redwood Canyon Cabin for the administration of wilderness, but with a smaller footprint and fewer appurtenances;
- Providing for short-term use of the Wolverton corral by private parties and commercial service providers, but not reestablishing permanent occupation of this facility by a commercial pack station for wilderness access;
- Adding information related to climate change;
- Refining the climbing management strategy to clarify the definition of fixed anchors.

The final WSP/FEIS is available on the NPS Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/sekiwild. A limited number of printed documents are available. To request printed documents or CDs, call (559) 565-3102, or write to me at the below address. A 30-day “no-action” period will begin on the date the Environmental Protection Agency publishes the notice of availability of the final plan in the *Federal Register*, after which the NPS will prepare a record of decision (ROD). After approval of the ROD by the Pacific West Regional Director, we will announce the selected plan through local and regional press, and on the PEPC website.

Your contributions to this planning effort make a difference in protecting the wilderness of Sequoia and Kings Canyon National Parks. Thank you for your involvement in this important plan.


Woody Smeck, Superintendent
Sequoia and Kings Canyon National Parks
47050 Generals Highway,
Three Rivers, CA 93271-9700

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# Wilderness Stewardship Plan and Final Environmental Impact Statement

## Sequoia and Kings Canyon National Parks

**April 2015**

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# EXECUTIVE SUMMARY

The wilderness areas of Sequoia and Kings Canyon National Parks (the parks) are visited by tens of thousands of people each year. Visitors to the parks' wilderness can enjoy a diverse array of opportunities while experiencing one of America's most superlative landscapes. Those who have yet to visit the wilderness are invited to consider their connection to wildlands, plan a trip, or enjoy it from afar.

This *Wilderness Stewardship Plan / Final Environmental Impact Statement* (WSP/FEIS) provides direction for the National Park Service (NPS) to make decisions regarding the future use and protection of the parks' wilderness. The WSP/FEIS analyzes the consequences of creating a plan that would provide management direction for the many outstanding resource values present in the parks' wilderness, including natural and cultural resources, as well as diverse recreational and educational opportunities for visitors. It analyzes these elements in accordance with the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), the Wilderness Act, and other legal mandates governing decision making by the NPS.

Readers may gain a quick summary of the proposed action by reviewing, at a minimum, the following parts of the document:

- this Executive Summary
- the Table of Contents (for specific sections of interest)
- "Alternative 2 (Preferred Alternative): Protect Wilderness Character by Implementing Site-specific Actions" section in chapter 2
- Appendices that provide specific management strategies.

In addition, the glossary may help with unfamiliar terms, and the appendices also offer in-depth and background information on many topics.

## PURPOSE OF ACTION

This WSP/FEIS (or plan) will provide management direction for two designated wilderness areas, several potential wilderness additions, and an area of proposed wilderness. The California Wilderness Act of 1984 (Public Law [PL] 98-425) designated the Sierra Crest portion of both parks as the Sequoia-Kings Canyon Wilderness. The Omnibus Public Land Management Act of 2009 (PL 111-11) designated the John Krebs Wilderness in Sequoia National Park; it also expanded the Sequoia-Kings Canyon Wilderness to include the North Fork Kaweah area and Redwood Canyon area. The parks' total designated wilderness is now 808,078 acres — approximately 93.3% of the total park acreage of 865,964. In addition, because the southern end of the Hockett Plateau (approximately 29,500 acres) remains proposed wilderness, it is managed as wilderness, according to law (PL 111-11) and NPS policy. The parks also contain several designated potential wilderness additions (DPWA), including the area around the Pear Lake Ski Hut and Bearpaw Meadow High Sierra Camp. These would become wilderness when and if the non-conforming activities (e.g., commercial enterprise) and/or facilities are removed. Altogether, designated and proposed wilderness areas comprise nearly 97% of the total acreage of Sequoia and Kings Canyon National Parks (figure ES-1 on the following page).

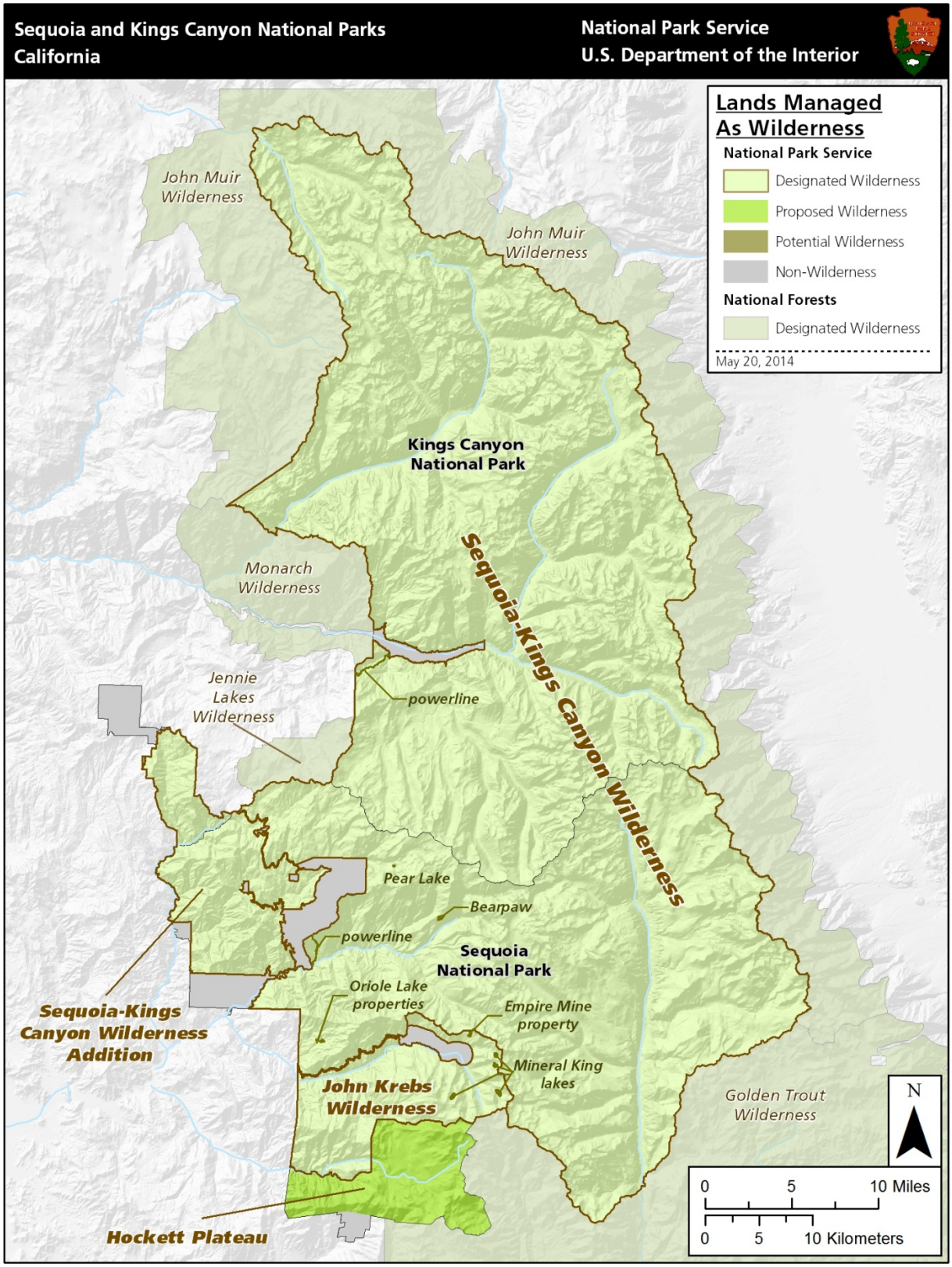


**Figure ES-1: Wilderness Areas In and Around Sequoia and Kings Canyon National Parks**

The WSP/FEIS addresses recent servicewide guidance (NPS *Management Policies 2006*), reflects provisions of the California Wilderness Act of 1984 and the Omnibus Public Land Management Act of 2009, incorporates new research findings, and uses a new interagency planning framework for the preservation of wilderness character. The purposes of the WSP include implementing the long-term vision for protecting wilderness character that is contained in the parks' Final General Management Plan (GMP) / Final Environmental Impact Statement, as well as enhancing established programs and actions for managing these areas as wilderness. (Note: In an order dated May 29, 2012, the U.S. District Court for the Northern District California issued an opinion in a lawsuit that challenged the parks' GMP [High Sierra Hikers Association v. U.S. Department of the Interior].) The Court order "vacate[d] all portions of the GMP and Record of Decision (ROD) which provide programmatic guidance regarding the type or level of stock services necessary in the Sequoia and Kings Canyon National Parks wilderness or direction as to need, appropriateness, or size of developments, structures, or facilities used completely or partially for commercial stock services." Where the GMP is referred to in this document, only those sections not vacated by the court order apply.) The WSP also replaces the current plans of record, the 1986 *Backcountry Management Plan* (BMP) and its accompanying 1986 *Stock Use and Meadow Management Plan* (SUMMP).

This WSP establishes a framework for managing wilderness and areas managed as wilderness within Sequoia and Kings Canyon National Parks to meet these critical objectives:

- preserve wilderness character
- provide opportunities for and encourage public use and enjoyment of wilderness in accordance with the Wilderness Act and other laws and policies
- improve conditions in areas where there may be unacceptable levels of impacts on wilderness character
- protect the natural and cultural resources within wilderness

## NEED FOR ACTION

The WSP is needed to establish more specific goals and objectives for the management of visitors and certain administrative activities within the parks' wilderness. A variety of controversial or long-standing issues are addressed in the WSP, including visitor capacity, wilderness permitting, party (group) size limits for people and stock, campfire regulations, camping locations and regulations, food-storage requirements, human-waste management, stock access, stock grazing, maintenance of facilities and trails, and management of frontcountry facilities that support wilderness use. The WSP also analyzes and determines the types and levels of commercial services that may be performed for activities that are proper for realizing the recreational or other wilderness purposes of the areas, as required by §4(d)(5) of the Wilderness Act.

The framework of this WSP/FEIS is founded on describing the wilderness character of the parks, defining the goals and objectives for managing wilderness visitor use and impacts, describing desired conditions for the visitor experience and wilderness character, developing visitor-use capacities, and determining the types and levels of commercial services necessary to support wilderness purposes.

In accordance with §102(2)(C) of the National Environmental Policy Act of 1969 (NEPA; PL 91-190), the parks have prepared this WSP/FEIS to consider alternative strategies for future management of the parks' wilderness. Five alternatives for achieving wilderness-stewardship objectives, including the no-action alternative, are identified and analyzed. They describe five different ways to provide appropriate

types and levels of access for visitors and authorized users, preserve wilderness character, protect cultural and natural resources, and adhere to legally required management and preservation objectives.

**Mehrten Creek along the High Sierra Trail**

## GOALS AND OBJECTIVES

Goals and objectives are key elements of a wilderness stewardship plan, as they establish and provide the direction for the parks' wilderness management program and reflect the purpose and need for planning. Wilderness goals and objectives flow from law, policies, park and wilderness enabling legislation, the parks' *General Management Plan* (GMP) objectives, public input, and more. The following identify what the WSP needs to address to achieve long-term successful management and protection of wilderness:

- Preserve ecological, geological, scientific, educational, scenic, and historical values of wilderness, including culturally significant resources and paleontological resources within wilderness, as important and prominent values, consistent with the Wilderness Act, California Wilderness Act, and applicable planning guidance from the GMP
- Manage archeological, historical, and ethnographic sites in a manner that is compatible with wilderness and historic-preservation laws
- Preserve dark night skies
- Preserve natural soundscapes
- Work to reduce conflicts between user groups as well as between users and sensitive resources

- Determine the types and levels of commercial services that will be allowed in wilderness and manage these services subject to applicable laws and policies
- Foster an inspired and informed public and park staff who value preservation of the parks' wilderness
- Promote Leave No Trace© minimum-impact practices
- Promote safety within the context of wilderness where users are expected to be self-reliant

*Desired conditions* are the natural and cultural resource conditions that the NPS aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources (NPS 2009a). In the context of a wilderness stewardship plan, *desired conditions* qualitatively describe an ideal condition of wilderness character. Some desired conditions may not be fully attainable due to factors unrelated to visitor use or park management activities (e.g., due to external factors such as climate change and air pollution). The Wilderness Act requires that, as a minimum, wilderness character be preserved from the time of designation. NPS *Management Policies 2006* also allows the NPS to take action to restore wilderness character when past actions have impacted wilderness character.

In this WSP, desired conditions are defined for the four primary qualities of wilderness character. More specific desired conditions are also provided under the qualities that relate specifically to visitor use management.

- The untrammeled quality of wilderness character would be preserved by limiting deliberate manipulation of ecological systems except as necessary to promote another quality of wilderness character.
- The natural quality of wilderness would be preserved by mitigating the impacts of modern civilization on ecosystem structure, function, and processes. The NPS aspires to minimize or localize adverse impacts caused by visitor use and administrative activities. In the wilderness, natural processes would dominate:
    - ecosystem structure and function
    - native biodiversity
    - water quality and quantity
    - decomposition, nutrient cycling and soil forming processes
    - meadow and wetland productivity
    - fire regimes
    - soundscapes, dark skies and viewsheds

  Additionally the NPS seeks to minimize adverse impacts caused by visitor use and administrative activities to cultural, historical and pre-historical resources.

- The undeveloped quality of wilderness character would be preserved through the removal of installations that are unnecessary for the protection of other wilderness character qualities.
- Outstanding opportunities for solitude or primitive and unconfined recreation would be provided to support visitor use and enjoyment of the parks' wilderness areas in balance with the protection of other wilderness character qualities.
    - Visitors with diverse backgrounds and capabilities would have opportunities to use and enjoy wilderness.

- Visitors would have opportunities to experience solitude, a state of being alone or feeling remote from society, although these opportunities could vary by location and time.
- Visitors would have opportunities to participate in a variety of primitive recreation activities, characterized by non-motorized, non-mechanical travel and reliance on personal skill; primitive recreation activities would be managed to preserve other wilderness character qualities.
- Visitors would have opportunities to recreate in an unconfined, self-directed manner, subject only to those regulations that are necessary to preserve wilderness character.

# PLANNING ELEMENTS TO BE ADDRESSED

Specific planning elements or topics to be addressed in the plan were developed for discussion and to set the framework for the alternatives. Each of these topics will be addressed under each alternative and a comparison of the environmental consequences of each alternative will be completed. These planning topics were identified based on internal and external scoping; federal laws, regulations, and executive orders; NPS *Management Policies 2006*; site visits; and public comments.

## MANAGEMENT ACTIONS APPLICABLE TO ALL ALTERNATIVES

**Wilderness Education:** Education is a critical component of wilderness stewardship. Programs that help visitors and staff to understand wilderness values and ethics are extremely important across all alternatives. Information explaining proper wilderness behavior and how to access less-visited areas of wilderness could help reduce the impacts of visitors on the environment and one another's experiences, as well as disperse use (Cole et al. 1987). Understanding the qualities and benefits of wilderness also leads to improved stewardship. A wilderness information and education strategy has been developed as part of this plan.

**Aviation (Military, Commercial, and Private):** Managing military and private aviation above park wilderness is outside the scope of the WSP; however, the plan will determine the future of commercial air tours over wilderness. As an outcome of this WSP/FEIS, air tours over the parks are determined to be counter to the preservation of wilderness character, and the parks will continue to pursue means for their exclusion from the Federal Aviation Administration (FAA) list of NPS units where air tours are allowed. The parks will continue to work cooperatively with regional and national military leadership to ensure that military aviation operations are no more than minimally disruptive to the experience of wilderness visitors. Private aircraft use would continue to be managed by the FAA, and the NPS will continue to work cooperatively with the FAA to resolve problems.

**Administrative Communications in Wilderness:** Effective radio-communication systems are necessary to support resource protection actions, emergency services, the safety of wilderness staff, and transmittal of information on wilderness conditions to the frontcountry to inform wilderness visitors. Radio repeaters in wilderness exist in strategic and remote locations and require maintenance. Helicopter use may be authorized to maintain radio repeaters if it is determined by the superintendent to be the minimum requirement needed to achieve the purposes of the area as wilderness, including the preservation of wilderness character. As future technologies are developed, the existing structures would be considered for replacement, with replacement outside of wilderness preferred. If structures are able to be removed, the installation sites would be restored to natural conditions.

**Administrative Activities (e.g., Ranger Patrols and Operations, Maintenance Activities, Resource Management Activities, Park Aviation, etc.) and Minimum Requirement Standards:** Administrative presence may impact opportunities for solitude and unconfined recreation. Rangers, trail crews, and

resource management crews are stationed in the parks' wilderness to educate and assist visitors, enforce regulations and restrictions, carry out projects, and perform maintenance activities to protect and preserve wilderness character. Many of these actions, such as those requiring the use of helicopters, are approved only after a minimum requirement analysis (MRA) determines that the actions are the minimum required to administer the area as wilderness.

**Tree Hazard Management:** Removing hazard trees in wilderness is not a normal or desirable activity, but may be allowed under certain circumstances after an analysis to determine that the actions are the minimum required to administer the area as wilderness.

**Research:** The parks are recognized for advancing scientific research and integrating knowledge gained from scientific inquiry into the management of wilderness resources. Researchers from outside entities submit approximately 60 to 80 requests for permits each year to study aspects of the wilderness environment. For some park visitors, interaction with agency personnel and researchers may reduce the unconfined feeling or opportunities for solitude (Fauth and Tarpinian 2011; NPS 2011a). Other research actions may result in a temporary trammeling of wilderness but may improve the natural quality of wilderness over time. Research that has the potential to affect wilderness character, or that proposes a prohibited action, is evaluated separately through a MRA.

**Winter Use:** A wide range of activities can be experienced in the wilderness during the winter, generally from November through mid-May. Due to the high-elevation, demanding terrain, and potentially extreme weather of the parks' wilderness, winter activities can be challenging and hazardous for the inexperienced user. However, users of the winter environment will find the quiet, solitude, and beauty of the parks' wilderness extraordinary and inspiring. The winter use of the wilderness will be managed consistently across the alternatives.

**Climbing Management:** Climbing management in National Park wilderness is directly guided by relevant NPS management policies, director's orders, and reference manuals. The U.S. Code of Federal Regulations and the parks' Superintendent's Compendium also provide indirect and direct management control of climbing and related activities. Director's Order #41: Wilderness Stewardship provides specific guidance on the management of climbing in wilderness. A Climbing Management Strategy has been developed as part of this WSP.

## KEY ELEMENTS CONSIDERED IN THE ALTERNATIVES

Each alternative emphasizes different approaches to protecting wilderness character. The variations in these elements are what make the alternatives different. The overarching element-specific objectives for this plan are:

- **Visitor-use Levels** – Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character.
- **Trails** – The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use.
- **Campfires** – Visitors would have the opportunity to enjoy campfires where campfires are compatible with the protection of vegetation and downed wood resources.
- **Food Storage** – Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food.
- **Human-waste Management** – Human waste would not contaminate water or create unsanitary or unsightly conditions. Management of waste would not unduly impact the undeveloped quality.

- **Party Size –** Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups.
- **Camping/Campsites –** Visitors would have the opportunity to choose camping locations, except in areas where dispersed camping would result in unacceptable impacts.
- **Stock Use –** Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character.
- **Administrative Structures and Development –** Installations and developments would be the minimum necessary for the administration of wilderness.
- **Frontcountry Facilities to Support Wilderness –** Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.
- **Commercial Services –** Commercial services may be performed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas. Commercial services (wherein a service is performed for a fee or charge) would support visitor use and enjoyment of wilderness in a variety of appropriate ways.

Because each alternative emphasizes different approaches to protecting wilderness character, alternative-specific objectives for the eleven planning elements were also developed and are included in chapter 2.

# ALTERNATIVES CONSIDERED

This WSP/FEIS considers five alternatives that would manage the overall character of the parks' wilderness, including key aspects such as wilderness use levels, access and trails, stock use and grazing, and recreational and administrative infrastructure. Each alternative meets applicable laws, as well as the goals, objectives, and desired conditions described in chapter 1. The high standard for natural resource preservation required by the 1964 Wilderness Act means there is little variation across the alternatives in terms of how natural resources are addressed. The main differences between these alternatives lie in the key elements of wilderness management – use levels, access and trails, stock use and grazing, and infrastructure, both recreational and administrative. These differences are driven by the different approach to management that each alternative offers. Each alternative serves visitor and/or operational needs in different ways.

## DESCRIPTION OF THE ALTERNATIVES

A summary of the alternatives is presented in the following paragraphs. The details of the alternatives are presented in table ES-1 (next page).

**Alternative 1: No-action / Status Quo.** The overarching idea behind alternative 1 is that the current documents and actions used by the parks to oversee wilderness would remain the same. That does not mean that nothing could change, but changes would be driven by the same plans currently in use. Under alternative 1, the management of all wilderness areas would continue to be guided by the Backcountry Management Plan (BMP) and Stock Use and Meadow Management Plan (SUMMP), each approved in 1986.

The BMP allows for recreational use in such a manner that park resources are preserved now and into the future. The BMP establishes trailhead quotas, a wilderness permit system, and management objectives for campfires, campsites, sanitation, food storage, special-use limits, area closures, stock use and grazing, education and interpretation, trails and travel, signs, commercial operations, ranger stations, administrative policies, and monitoring (e.g., meadows monitoring).

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT**

| Topic | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 1: Visitor-use Levels**<br>Permitting/Quotas | Trailhead quotas exist at most locations. | Trailhead quotas would remain the same or be slightly reduced in high-use areas. | Trailhead quotas would be increased by 10% in some areas. | Daily trailhead quotas would remain the same or be slightly reduced in highest use areas compared to alternative 1. Trailhead quotas in low-use areas would be reduced from those of alternative 1. | Trailhead quotas would be reduced by 30% wilderness-wide. |
| **Element 1: Visitor-use Levels**<br>Destination Quotas | Destination quotas apply for Emerald and Pear lakes. | Existing destination quotas would continue to be applied.<br>Additional destination quotas may be added for specific areas (e.g., Bearpaw, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lakes, Rae Lakes, and other areas). | Existing destination quotas would continue to be applied.<br>No additional destination quotas would be added. | Existing destination quotas would continue to be applied.<br>Additional destination quotas may be added in the future for specific areas including Bearpaw, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lake, Rae Lakes, and potentially others. | Existing destination quotas would be discontinued.<br>New destination quotas may be implemented for specific popular areas. |
| **Element 1: Visitor-use Levels**<br>Day-use Permits and Quotas | There are no day-use permits/quotas. | No day-use permits/quotas would be implemented at this time but they may be considered in the future in the most popular areas to meet desired conditions. | No day-use permits/quotas would be implemented. | Same as alternative 2. | Day-use quotas would be applied in specific areas (e.g., Lakes Trail, Mist Falls, Monarch Lake, and potentially other areas). |
| **Element 2: Trails**<br>*Appendix K has more details on trail classification and management.* | There is currently no trail classification system.<br>Trails are maintained, relocated, or reconstructed per the NPS Trail Maintenance Handbook standards and the BMP and SUMMP.<br>No new trail construction is authorized. | A trail classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 3 trails would be downgraded to Class 2.<br>Some Class 2 trails would be downgraded to Class 1.<br>New Class 1 trails would be established to protect resources; some Class 1 trails would be abandoned. | A trail classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 2 trails would be upgraded to Class 3.<br>New Class 1 trails would be established or abandoned to protect resources.<br>Some Class 1 trails would be upgraded to Class 2. | A trail classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 3 trails would be downgraded to Class 2.<br>Most Class 2 trails would be maintained to Class 2, but some would be upgraded to Class 3 or downgraded to Class 1.<br>Some Class 1 trails would be abandoned. | A trail classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Most trails would be maintained at their "current" class. |
| **Element 2: Trails**<br>Signs | Trail signs with directional markers and mileages are present. Interpretive signs are generally not authorized. | Signs would be appropriate to trail class. | Same as alternative 2. | Same as alternative 2. | Same as alternative 2. |
| **Element 3: Campfires**<br>Restrictions | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would continue to be allowed up to:<br>10,000 feet in the San Joaquin and Kings river drainages.<br>9,000 feet in the Kaweah River drainage.<br>10,400 feet in the Kern River drainage. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed up to:<br>10,000 feet in the San Joaquin, Kern, and Kings river drainages.<br>9,000 feet in the Kaweah and Tule river drainages. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed up to 9,000 feet wilderness-wide. | No campfires in wilderness. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed above 10,000 feet wilderness-wide. |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 3: Campfires**<br>Site-specific Variations | Additional site-specific prohibitions are in place in the Kings, Kaweah, Kern, and Tule River drainages. | In areas where available wood could be burned without unduly depleting ground fuels or consuming important resources, variances could be established.<br>Site-specific prohibitions would be implemented at: Hamilton Lakes, Mineral King Valley, Pinto Lake, Redwood Canyon, and in selected sequoia groves. | No variances would be established.<br>Site-specific prohibitions would be implemented in the most popular areas (e.g., Pacific Crest Trail (PCT) / John Muir Trail (JMT), Rae Lakes Loop, High Sierra Trail (HST), Mineral King Valley, and Rock Creek drainage) and in selected sequoia groves. | N/A: No campfires in wilderness. | No variances would be established.<br>Site-specific prohibitions would be implemented in selected sequoia groves. |
| **Element 3: Campfires**<br>Summary | Allows recreational campfires in 398,829 acres of 837,806 acres of wilderness. | Allows recreational campfires in 395,710 acres of 837,806 acres of wilderness. | Allows recreational campfires in 293,840 acres of 837,806 acres of wilderness. | Allows recreational campfires in 0 acres of wilderness. | Allows recreational campfires in 425,276 acres of 837,806 acres of wilderness. |
| **Element 4: Food-storage**<br>Food-storage Boxes | There are 86 food-storage boxes currently in wilderness and these would remain. | Of the existing 86 food-storage boxes, 48 would be retained and 25 would be removed. An additional 13 food-storage boxes would be tested prior to removal.<br>Food-storage boxes would be retained in highest use areas (e.g., Rae Lakes Loop, HST). Some boxes could be relocated. | Existing food-storage boxes would be retained; however, they may be relocated.<br>Up to 35 new food-storage boxes would be added in key areas. | All food-storage boxes would be removed. | Same as alternative 4. |
| **Element 4: Food-storage**<br>Portable Container Requirements | Portable food-storage containers are required for overnight use at Rae Lakes Loop and vicinity, Dusy and Palisades basins, and in the Rock Creek area. | Portable containers would be required for overnight use at North Dome, Dusy Basin, Rae Lakes Loop and Rock Creek areas, and may be required in other areas. | Existing portable container requirements would be modified based on the locations of additional food-storage boxes.<br>Additional portable container requirements would be implemented in specific areas as needs arise. | Portable containers would be required for all overnight users wilderness-wide. | The NPS would retain the ability to require portable containers in specific areas. |
| **Element 4: Food-storage**<br>Requirements – Commercial Guides | Commercial guides (stock and hiking) are required to use portable containers wilderness-wide (condition of commercial use authorization [CUA]). | Same as alternative 1. | Same as alternative 1. | Same as alternative 1. | Same as alternative 1. |
| **Element 4: Food-storage**<br>Other Methods | Counterbalancing and hanging food is allowed.<br>Guarding food items is not allowed. | Counterbalancing and hanging would be allowed in areas where containers are not required.<br>Guarding food items is not allowed. | Same as alternative 2. | Counterbalancing and hanging and guarding food items would not be allowed. | Self-determined food storage methods would be required (counterbalancing and hanging food or portable containers).<br>Guarding food items would not be allowed. |
| **Element 5: Human Waste**<br>Cat-holes | Cat-holes are required where there are no privies/restrooms. | Same as alternative 1. | Cat-holes would be required where there are no privies/restrooms except in areas where pack-out waste kits are required. | Cat-holes would be required (except in areas with pack-out waste kit requirements). | Cat-holes would be required in all areas. Visitors may elect to use pack-out waste kits. |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 5: Human Waste**<br>Privies and Restrooms | There are two restrooms and 21 privies in wilderness. | Existing privies and restrooms (Emerald and Pear lakes) would be evaluated and those beyond reasonable repair or in unsuitable locations (low-use, close-in areas, where soils allow for cat-holes) would be removed.<br>Nine public-use privies would be retained; seven public-use privies would be removed; one public-use privy would be added at Rock Creek Crossing.<br>New privies would be considered for high day-use areas.<br>Five additional privies/restroom buildings could be removed if maintaining them becomes cost prohibitive or if pack-out waste kit testing is successful. | All existing privies and restrooms would be retained.<br>New privies would be considered for popular day-use areas (e.g., Heather Lake) and popular overnight areas. | All existing privies and restrooms would be removed (including Emerald and Pear Lake restrooms), except those affiliated with administrative structures.<br>No new privies, vault toilets, or restrooms would be constructed. | Same as alternative 4. |
| **Element 5: Human Waste**<br>Pack-out Waste Kits | Pack-out waste kits are highly recommended in the Mount Whitney area. | Pack-out waste kits may be required in certain areas to minimize the need for privies and restrooms. | Pack-out waste kits would be required in the Mount Whitney area. Existing privies would remain and be maintained in their current locations. | Pack-out waste kits would be recommended or required in popular areas. | Pack-out waste kits would be recommended in certain areas. |
| **Element 6: Party Size**<br>Hikers and Boaters<br>*Note: Off-trail restrictions apply to both day users and overnight users.* | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 15. | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 12 except in areas with specific lower limits (see below). | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 15. | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 12.<br>Off-trail party size limit of 8. | On-trail (day-use) party size limit of 20.<br>On-trail (overnight use) party size limit of 10.<br>Off-trail party size limit of 8. |
| **Element 6: Party Size**<br>Recreational Stock Users<br>*Note: Off-trail restrictions apply to both day users and overnight users.* | Maximum party sizes include:<br>On-trail (day-use) – (including day rides, spot and dunnage) – 25 people; 20 stock; combined maximum of 45.<br>On-trail – 15 people; 20 stock; combined maximum of 35 (with some lower exceptions).<br>Off-trail – 15 people; 20 stock; combined maximum of 35. | Maximum party sizes include:<br>Day Rides – 20 people; 20 stock; combined maximum 40.<br>On-trail – 15 people; 20 stock; combined maximum 28.<br>Off-trail – 12 people; 12 stock; combined maximum 14. | Maximum party sizes include:<br>Day Rides – 25 people; 25 stock; combined maximum 50.<br>On-trail –15 people, 25 stock; combined maximum 40.<br>Off-trail – 15 people; 25 stock; combined maximum 40. | Maximum party sizes include:<br>Day Rides – 15 people; 15 stock; combined maximum 30.<br>On-trail – 12 people; 15 stock; combined maximum 20.<br>Off-trail – 8 people; 7 stock; combined maximum 11. | Maximum party sizes include:<br>Day-rides – 13 people; 13 stock; combined maximum 26.<br>On-trail – 10 people; 13 stock; combined maximum 18.<br>Off-trail – No off-trail stock use allowed. |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Element 6: Party Size**<br>Area-specific Restrictions | Temporary party-size limits of 8 (number of people and stock combined) in 5 off-trail areas (Darwin Canyon, Dusy Basin, , Mount Whitney / Mount Langley, Sixty Lake Basin, and Sphinx Lakes). | Existing off-trail temporary party-size limits of 8 would be adopted permanently at Darwin Canyon/Lamarck Col (includes Class 1 trail area), Dusy Basin, Mount Whitney / Mount Langley (includes Class 1 trail area), Sixty Lake Basin, and Sphinx Lakes.<br>Upper Goddard Canyon/Martha Lake would have a party-size limit consistent with the off-trail party size (12 people, 12 stock, combined maximum of 14).<br>Combined party size of 8 (people and stock) for day rides into Sixty Lake Basin. Trail closed to stock beyond a point 1.8 miles from the junction of the JMT and the Sixty Lake Basin Trail.<br>Combined party size of 8 (people and stock) for day rides above Penned Up Meadow on the Class 1 trail into Miter Basin. | Existing temporary party-size limits would be removed (party size of 8).<br>A party-size limit of 4 would be implemented for camping at North Dome. | Existing temporary party-size limits would be removed and replaced with a wilderness-wide off-trail party size of 8. | Existing temporary party-size limits would be removed and replaced with a wilderness-wide off-trail party size of 8.<br>Consider more restrictive party size for day-use in specific highly visited areas (Lakes Trails, Mist Falls, Monarch Lake, and potentially other areas). |
| **Element 6: Party Size – General**<br>Area-specific Restrictions – Redwood Canyon | Redwood Canyon: maximum of 10 stock and maximum hiker party size of 10 people. | A party-size limit of 10 people or 10 people with 10 stock (combined maximum of 20) would be retained for Redwood Canyon. | A party-size limit of 10 people or 10 people with 10 stock (combined maximum of 20) would be retained for Redwood Canyon. | A party-size limit of 8 people or 8 people with 8 stock (combined maximum of 16) would be implemented for Redwood Canyon. | A party-size limit of 6 people or 6 people with 6 stock (combined maximum of 12) would be implemented for Redwood Canyon. |
| **Element 6: Party Size – General**<br>Area-specific Restrictions – Milestone Basin | Milestone Basin maximum of 8 stock, by special permit only. | N/A: Closed to stock. | Same as alternative 1. | N/A: Closed to stock | N/A: Closed to stock. |
| **Element 7: Camping/Campsites**<br>Hikers<br>Allowable camping relative to wilderness boundary or trailhead | Camping would continue to be prohibited within 1 mile of any road and generally within 4 miles of a developed area or trailhead complex. | Camping would be prohibited within specified distances from each trailhead and 1 mile from any frontcountry development. | Same as alternative 2. | Same as alternative 2. | Same as alternative 2. |
| **Element 7: Camping/Campsites**<br>Close-in Camping Areas | Not applicable | Allow camping in specific close-in areas (e.g., Colony Mill Trail, Don Cecil Trail, and North Dome). | Same as alternative 2. | No camping in specific close-in areas (e.g., within 2 miles of either trailhead on the Colony Mill Trail; on the entire Don Cecil Trail). | Same as alternative 2. |
| **Element 7: Camping/Campsites**<br>Existing Designated Campsites<br>Hikers | Designated camp area exists at Bearpaw Meadow and designated campsites exist at Emerald and Pear lakes and Paradise Valley. | Existing designated sites at Emerald and Pear lakes, lower Paradise Valley, and the designated camp area at Bearpaw Meadow would be retained. | Same as alternative 2. | All existing designated sites at Emerald and Pear lakes, Paradise Valley, and the camp area at Bearpaw Meadow would be removed. | Existing designated sites at Emerald and Pear lakes, Paradise Valley, and the camp area at Bearpaw Meadow would be removed. |
| **Element 7: Camping/Campsites**<br>New Designated Campsites<br>Hikers | No additional designated campsites would be established. | Additional designated sites or camp areas could be established at selected high-use areas, including but not limited to: Dusy Basin, Guitar Lake, Kearsarge Lakes Basin, Middle and Upper Rae Lakes, and Woods Creek Crossing. | Additional designated sites would be established in selected popular areas, including but not limited to Dusy Basin, Evolution Valley, Guitar Lake, JMT, Kearsarge Lakes Basin, Middle and Upper Rae Lakes, Mineral King Lake Basins, PCT, Redwood Canyon, and Woods Creek Crossing. | No new designated sites would be established at this time. | Same as alternative 4. |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Element 7: Camping/Campsites**<br>Universally Accessible Sites<br>Hikers | None | One or more universally accessible campsites closer to the trailhead would be considered (Potential location to consider – near the confluence of Bubbs Creek and South Fork Kings River). | Same as alternative 2. | None | None |
| **Element 7: Camping/Campsites**<br>Stock Users | No camps would be designated for the exclusive use of stock users with the exception of Upper and Lower Funston Meadows. No other camps are designated for the exclusive use of stock users. | In specific high-use locations, stock users may be required to camp in designated stock camps. (e.g., Big Pete Meadow, Rock Creek Crossing, and Woods Creek Crossing). These sites would be stock user only camps.<br>Upper and Lower Funston would no longer be designated stock camps. | In specific, high-use locations, stock users may be required to camp in designated stock camps, These sites would be stock user only camps. | There would be no designated stock camps. | Same as alternative 4. |
| **Element 7: Camping/Campsites**<br>Night Limits | Visitors are limited to 14 consecutive nights at a single location, 21 consecutive nights per trip, and 63 total nights per year except for the specific areas below. | Visitors would be limited to 14 consecutive nights at a single location, 25 consecutive nights per trip, and 75 total nights per year except for the specific areas below. | Visitors would be limited to 7 consecutive nights at a single location, 20 consecutive nights per trip, and 60 total nights per year except for the specific areas below. | Visitors would be limited to 10 consecutive nights at a single location, 21 consecutive nights per trip, and 63 total nights per year except for the specific areas below. | Visitors would be limited to 10 consecutive nights at a single location, 21 consecutive nights per trip, and 63 total nights per year except for the specific areas below. |
| **Element 7: Camping/Campsites**<br>Area-specific Night Limits | 2-night limit at Charlotte Lake, Hamilton Lake, Kearsarge Lakes, Paradise Valley, and Redwood Canyon.<br>1-night limit at Rae Lakes, per lake. | 3-night limit at Emerald and Pear lakes (combined) and at Soldier Lake.<br>2-night limits at Charlotte Lake, Colony Mill Trail, Crabtree area, Don Cecil Trail, Dusy Basin, Guitar Lake, the JMT from Woods Creek Crossing to Vidette Meadow, Kearsarge Lakes Basin, North Dome, Paradise Valley, and Redwood Canyon.<br>1-night limit at Hamilton Lake and 1-night limit per lake at Rae Lakes. | 2-night limit at Charlotte Lake, Colony Mill Trail, Crabtree area, Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Guitar Lake, Hamilton Lake, Kearsarge Lakes Basin, North Dome, Paradise Valley, Redwood Canyon, and Soldier Lake.<br>1-night limit per lake at Rae Lakes, at any one location on the JMT between Vidette Meadow and Woods Creek Crossing. | 4-night limit at Crabtree area and Soldier Lake.<br>3-night limit at Charlotte Lake, Colony Mill Trail, Emerald and Pear lakes (combined), Guitar Lake, the JMT from Woods Creek Crossing to Vidette Meadow (at any one location), North Dome, and Redwood Canyon.<br>2-night limits at Dusy Basin, Hamilton Lake, Kearsarge Lakes Basin, Paradise Valley, and Rae Lakes (per lake). | 4-night limits at Colony Mill Trail, Crabtree area, Guitar Lake, and the JMT from Woods Creek Crossing to Vidette Meadow.<br>3-night limits at Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Kearsarge Lakes Basin (combined), Paradise Valley (whole valley), Redwood Canyon, and Rae Lakes (per lake).<br>2-night limit at Hamilton Lake. |
| **Element 8: Stock Use**<br>Access and Travel<br>On-trail | On-trail:<br>Currently nearly all maintained wilderness trails in the parks are open to stock (637 of 653 miles). Stock travel is also permitted on 77 miles of informal and abandoned trails.<br><br>(Note: Not all trails open to stock are maintained to stock standards) | On-trail:<br>Stock travel would be allowed on 650 of 691 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 671 of 714 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 527 of 643 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 665 of 702 miles of maintained trails. |
| **Element 8: Stock Use**<br>Access and Travel<br>On-trail Camping Access | Approximately 598 miles of maintained and unmaintained trails are open to camping with stock. | Approximately 532 miles of maintained trails would be open to camping with stock. | Approximately 565 miles of maintained trails would be open to camping with stock. | Approximately 377 miles of maintained trails would be open to camping with stock.by all user groups (private, commercial, and administrative) with an additional 72 miles of maintained trails open to overnight travel by private stock or administrative stock parties only (closed or day-use only for commercial stock). | Approximately 555 miles of maintained trails would be open to camping with stock. |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Element 8: Stock Use**<br>Access and Travel<br>Off-trail | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock is allowed in four areas of the parks: on the Hockett Plateau, along the western side of the Kern River watershed south from the Chagoopa Plateau, on the Monarch Divide including Hotel Creek, and in the Roaring River area.<br>Travel is allowed up to 0.5 mile from trails and routes to reach campsites. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from maintained trails open to camping with stock would be allowed for private stock parties in four areas of the parks: on the Hockett Plateau (except for Tar Gap), on the Monarch Divide (except for Kennedy Canyon), in the Roaring River drainage (except for Elizabeth and Colby passes), and along the western side of the Kern River watershed south from the Chagoopa Plateau (except for Lower Big Arroyo and Willow Meadow Cutoff).<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp, and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be prohibited.<br>In areas open to overnight stock use, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp. Stock would be allowed to travel up to 100 yards from day-use trails. |
| **Element 8: Stock Use**<br>Grazing | Grazing is generally allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock, along designated unmaintained routes, or in off-trail travel areas).<br>Grazing is not allowed in those areas open only to stock travel. | Grazing would generally be allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock or in off-trail travel areas).<br>Grazing would not be allowed in those areas open only to travel. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would generally be prohibited in areas open to off-trail travel with the following exceptions: Ansel Lake, Chagoopa Treehouse Meadow, Crytes Lakes, Laurel Creek Basin, Long Meadow (Ferguson Creek), Sugarloaf Creek Confluence, and West Fork Ferguson Creek.<br>Grazing would not be allowed in those areas open only to stock travel. | No administrative, private, or commercial grazing would be allowed.<br>Visitors and park staff traveling with stock would be required to carry feed for their animals and confine them on durable non-vegetated surfaces in camp. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would not be allowed in those areas open only to travel. |
| **Element 8: Stock Use**<br>Stock Use Structures | There are 52 existing hitch rails and 54 existing drift fences, pasture fences, and gates in the parks' wilderness managed under the SUMMP. | 23 hitch rails would be removed and 29 hitch rails would be retained.<br>12 fences/gates would be removed and 42 would be retained. | 14 hitch rails would be removed and 38 would be retained.<br>5 fences/gates would be removed, 49 would be retained, and 1 new fence with a gate would be constructed. | All hitch rails not associated with administrative facilities would be removed.<br>All drift fences and gates would be removed. Groups traveling with stock would be required to hold their stock while camping (e.g., set up high lines) on durable, non-vegetated surfaces. | 28 hitch rails would be removed and 24 would be retained.<br>A total of 18 fences and gates would be removed, 36 fences/gates would be retained, and 1 gate would be added. |
| **Element 9: Administrative Structures**<br>Ranger Stations | Ranger Stations: 15<br>Patrol Cabins: 3 | Ranger Stations:<br>Retained: 14<br>Removed: 1<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 | Ranger Stations:<br>Retained: 15<br>Removed: 0<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 | Ranger Stations:<br>Retained: 8<br>Removed: 7<br>Patrol Cabins:<br>Retained: 1<br>Removed: 2 | Ranger Stations:<br>Retained: 11<br>Removed: 4<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 |

**TABLE ES-1: SUMMARY OF ALTERNATIVES BY ELEMENT (CONTINUED)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Element 9: Administrative Structures**<br>Administrative Pastures | Stock pastures associated with ranger stations are located at Hockett Meadow, Kern, Redwood Meadow, and Roaring River. Facilities such as hitching rails are associated with structures at Hockett Meadow, Quinn, and Redwood Meadow. | Existing administrative pastures and associated structures would be retained in their current location (Hockett Meadow, Kern, Redwood Meadow, and Roaring River). | Same as alternative 2. | Existing administrative pastures and associated facilities would be removed (Hockett Meadow, Kern, Redwood Meadow, and Roaring River). | The existing administrative pasture (and fence) at Redwood Meadow would be removed. The Hockett Meadow and Kern pastures would be reduced in size. The administrative pasture at Roaring River would be retained. |
| **Element 9: Administrative Structures**<br>Crew Camps | There would continue to be 15 established and long-term trail crew camps within Kings Canyon National Park and 10 established and long-term trail crew camps within Sequoia National Park.<br>Other project crew camps (for administration of wilderness) would continue to be established as needed on case-by-case basis. | Existing trail crew camps would be retained, but the number of installations would be reduced to one at each camp.<br>Other project crew camps would be established as needed on case-by-case basis. | The number of trail crew camps in Kings Canyon National Park would be increased to 20. The number of trail crew camps in Sequoia National Park would be increased to 15.<br>Other project crew camps (for administration of wilderness) would be established as needed on case-by-case basis. | Trail crews would conduct trail maintenance through use of mobile operations; there would be no long-term established camps.<br>Short-term project crew camps (for administration of wilderness) would be established as needed on case-by-case basis. | Same as alternative 4. |
| **Element 9: Administrative Structures**<br>Other Administrative Facilities | The Redwood Canyon Cabin and associated infrastructure is operated under a Memorandum of Understanding with a non-governmental organization for the purposes of research. | Use of the Redwood Canyon Cabin would be authorized by permit for activities appropriate for the administration of wilderness. The footprint of the facility would be reduced and the external installations (e.g., privy, equipment storage boxes, and woodshed) would be removed. | The Redwood Canyon Cabin would be retained as research support with reduced affiliated infrastructure. Use would include park staff, cooperators, research organizations, and universities (non-park staff would be required to obtain a permit).<br>The supporting infrastructure (e.g., water system, tables, etc.) would be removed, and the area rehabilitated. | Use of the Redwood Canyon Cabin by researchers would be terminated within 1 year of WSP approval. The cabin and all associated installations would be removed over a two-year period after WSP approval. Future research activities in Redwood Canyon could continue, but without the use of the cabin or associated permanent infrastructure. | Use of the Redwood Canyon Cabin by researchers would be terminated within two years of WSP approval. The cabin and all associated installations would be removed within three years of WSP approval. Future research activities in Redwood Canyon could continue but without the use of a permanent structure. |
| **Element 10: Frontcountry Facilities**<br>*Refer to table 52 in chapter 2 for details; page 279* | | | | | |
| **Element 11: Commercial Services in Wilderness** | Commercial service levels and types would continue to be managed to provide high-quality visitor experiences while protecting wilderness resources. | Commercial services would be allowed but would be restricted in specific popular areas and areas with other limiting factors (e.g., Mount Whitney Management Area) | There would be increased opportunities for provision of commercial services (types and amounts of services). | Overall the types, amounts, and areas in which commercial services are allowed would be notably reduced compared to alternative 1. | Overall the types, amounts, and areas in which commercial services are allowed would be reduced commensurate with reduced use. |
| **Element 11: Commercial Services in Wilderness**<br>Bearpaw Meadow High Sierra Camp | The Bearpaw Meadow High Sierra Camp would continue to be operated by a park concessioner. | Commercial services would be provided at the Bearpaw Meadow High Sierra Camp as in alternative 1. | The Bearpaw Meadow High Sierra Camp would be retained and would continue to be operated by a concessioner. Some expansion (season of use and/or size of facilities) would be considered provided it can be accomplished within the existing footprint and would not cause additional adverse impacts on resources. | The Bearpaw Meadow High Sierra Camp, including any historic elements, would be removed and the area rehabilitated. | The Bearpaw Meadow High Sierra Camp would be reduced in size and its season of operation would be shortened. |
| **Element 11: Commercial Services in Wilderness**<br>Pear Lake Ski Hut | The Pear Lake Ski Hut would continue to be operated during winter months as a ski hut (lodging facility) by a cooperating association under a cooperative agreement. | Commercial services would be provided at the Pear Lake Ski Hut as in alternative 1. | Use of the Pear Lake Ski Hut would continue through a cooperating association or as a concession-operated facility. | Use of Pear Lake Ski Hut as a commercial facility would be discontinued. | The Pear Lake Ski Hut would be used as a warming hut with no overnight use and operated by the NPS. |

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The SUMMP establishes the management system and tools for stock use and includes site-specific opening dates for grazing, grazing management, use levels, protection of Sierra Nevada bighorn sheep ewe-lamb ranges, installation of drift fences, stock and camp etiquette, implementation of temporary variances, and other closures. The SUMMP also establishes a monitoring program to inform and modify management as necessary to reduce resource impacts.

**Alternative 2: Protect Wilderness Character by Implementing Site-specific Actions (NPS Preferred Alternative).** The overarching idea behind alternative 2 is that the WSP would incorporate much of the current management strategies and tools used by the parks to protect wilderness. Rather than imposing restrictions on a broad scale, this alternative would evaluate conditions in specific areas and mitigate impacts through targeted actions. The goal is to encourage wilderness use and minimize restrictions while preserving wilderness character.

This alternative recognizes that there is variation in visitor-use levels throughout the wilderness: day use (close to frontcountry), popular overnight areas (e.g., HST, PCT, and Rae Lakes Loop), and less-visited areas (e.g., the Middle Fork of the Kings, the Hockett Plateau, and off-trail areas). It further recognizes that, under current management, prevailing projected visitor-use levels pose few threats to wilderness character in the less-popular or less-visited areas.

Alternative 2 acknowledges, however, that there are some challenges in the most popular areas and in areas with sensitive resources that can be mitigated through targeted improvements in management.

As with current management, this alternative would protect the wilderness character and resource values while providing for a range of visitor opportunities, but adds some limits in specific popular and sensitive resource areas to improve wilderness character.

Some popular areas would have additional restrictions (e.g., closing additional meadows along the JMT and HST to grazing), but less popular areas would have some restrictions eased (e.g., allowing campfires in specific areas, increased night limits, etc.). Education would be essential to inform visitors of where they could expect fewer encounters and how to practice Leave No Trace© travel and camping techniques in wilderness.

The most popular areas where concerns regarding visitation levels exist include Bishop Pass (Dusy Basin), Bubbs Creek (Rae Lakes Loop), Cottonwood Lakes / New Army Pass (Mount Whitney and Mount Langley), Cottonwood Pass (Mount Whitney), HST (from Crescent Meadow and Wolverton), Lakes Trail (Emerald and Pear lakes), Sawtooth Trail (Monarch Lakes), and Woods Creek (Rae Lakes Loop). Lamarck Col (Darwin Canyon), while not busy, may have increasing use and is a sensitive area.

Visitors traveling with stock would continue to have access to most trails in the parks, with some trails reserved for hiker use only. The combined length of trails open to hiker or backpacker traffic only (i.e., closed to stock) would increase by approximately 25 miles over current conditions. Off-trail stock travel would continue to be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau. Stock access and grazing would be constrained primarily by ecological parameters, with a limited number of new restrictions adopted to provide for visitor safety and to accommodate social values (e.g., scenic and aesthetic values). Grazing would be managed to optimize protection of natural and cultural resources while allowing visitors traveling with stock access to forage for their animals. Recognizing that the opportunity to observe and experience ungrazed meadows is of value to many park visitors, a selection of meadows along popular travel routes would be closed to grazing.

To meet the objectives of this alternative, commercial services would be retained at levels similar to alternative 1 (no-action / status quo) in most locations. Commercial services would be reduced in some of the most frequently visited areas and in some areas with particularly sensitive resources. More types of commercial services could be permitted to support a range of recreational opportunities consistent with the objectives of this alternative. Commercial services would be allowed to the extent necessary to provide opportunities for visitors of diverse abilities and interests to engage in a variety of wilderness activities that are proper for realizing the public purposes of wilderness (i.e., recreational, scenic, scientific, educational, conservation, and historical use, per §4(b) of the Wilderness Act).

**Alternative 3: Provide More Opportunities for Primitive Recreation.** The overarching idea behind alternative 3 is that the WSP would focus on increasing opportunities for primitive recreation by allowing additional use, which would be expected to occur mostly in popular areas.

Allowing use to increase under this alternative would result in more visitors in the parks' wilderness. This would result in decreased opportunities for solitude and more visitors could have an increased impact on the resources. Therefore, to preserve the natural quality of wilderness, the popular use areas in wilderness would require additional development and restrictions on visitor behavior.

Quotas would generally remain at current levels in low-use areas, as there is no demand above current levels, but quotas would be increased for some of the most popular areas.

Most wilderness trails in the parks would remain open to stock under this alternative. Stock would continue to be allowed to travel up to one-half mile off maintained trails to reach campsites. Off-trail stock travel would continue to be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.

To increase access for visitors traveling with stock along the most popular trail corridors (JMT, HST, and PCT), additional controls would be placed on grazing, night limits, and party-size limits. In areas subject to high visitation or vulnerable to resource impacts, designated camping areas may be established.

There would be increased opportunities for commercial services commensurate with increased use (types of services and amount of use). Increased commercial services would be necessary to support a wider range of visitor skill levels and recreational opportunities.

**Alternative 4: Emphasize Undeveloped Quality and Non-commercial Recreation.** The overarching idea behind alternative 4 is that the WSP would focus on emphasizing the undeveloped and non-commercial qualities of the parks' wilderness. Removal of development and reduction of commercial services would increase opportunities for solitude and encourage self-reliance in wilderness recreation.

This alternative would eliminate some of the development currently in wilderness to emphasize the undeveloped quality of wilderness. There would be fewer signs, bridges, stock-related facilities, and ranger stations. Restrooms/privies and food-storage boxes would be removed and there would be no designated campsites.

Because fewer resource-protecting developments would remain in place, the amount of use would need to be reduced to protect the natural quality of wilderness.

Trailhead quotas would remain at current levels or be slightly reduced in the most popular areas. In low-use areas, current trailhead quotas would be reduced to prevent increasing use by visitors who cannot get a permit when quotas for the most popular trailheads fill.

Commercial services would be notably reduced in both quantity and area where they would be available. Types of commercial services would be similar to current conditions. The majority of wilderness would be managed for self-directed exploration and self-reliant travel, increasing the primitive and unconfined qualities of recreation.

Private parties traveling with stock would continue to have access to most trails in the parks, and stock would continue to be allowed to travel off-trail in four designated areas. However, commercial stock use would be limited to certain destinations and trails. No private, commercial, or administrative stock grazing would be allowed under this alternative.

Campfires would not be allowed in wilderness under this alternative.

**Alternative 5: Emphasize Opportunities for Solitude.** The overarching idea behind alternative 5 is that the WSP would focus on enhancing the quality of solitude available in wilderness. To achieve this, the total number of wilderness visitors allowed in wilderness would be reduced, as would party size.

The presence of fewer visitors in wilderness would in turn allow for reduced levels of development, along with reduced restrictions on visitor behavior (fewer people need fewer facilities). Reducing the numbers of visitors would also result in reduced impacts on resources.

Trailhead quotas would be reduced to protect against future increases in use wilderness-wide, even at trailheads that currently do not meet quotas.

Because there would be reduced use, stock use and grazing would be allowed in most areas where overnight use is permitted.

Commercial services would be allowed, but less use would be expected overall with reduced trailhead quotas for all visitors (including commercial service providers) and reduced party sizes.

## IMPACT TOPICS SELECTED FOR DETAILED ANALYSIS

The following impact topics were identified based on internal and external scoping; federal laws, regulations, and executive orders; NPS *Management Policies*; site visits; NPS knowledge of limited or easily impacted resources; and the potential for measurable effects on these resources. These topics were evaluated in this WSP/FEIS in “Chapter 4: Environmental Consequences.” Table ES-2 (page xxiii) summarizes the impacts of each alternative

**Wilderness Character:** This WSP/FEIS would establish a framework for managing wilderness, replacing the current guiding documents, the BMP and the SUMMP. Preserving wilderness character is the fundamental purpose of wilderness, per the Wilderness Act. For that reason, the evaluation of how each alternative affects wilderness character is an integral part of this WSP/FEIS. Activities occurring in wilderness have the potential to impact wilderness character and values through recreational and management activities.

**Soils:** Several elements of the alternatives have the potential to affect soils, including constructing, maintaining, or restoring trails, placing or removing food-storage boxes, establishing designated camps, and general visitor use.

**Water Quality:** Visitor use and administrative actions near lakes, streams, ponds, and rivers has the potential to impact water quality through increased turbidity from runoff, and from human and stock waste.

**Mount Stewart and Black Spur**

**Vegetation:** Vegetation can be affected by activities such as trampling by visitors and stock, grazing in meadows, collecting wood for campfires, administrative actions, and transporting and establishing nonnative vegetation. Vegetation subtopics included in this WSP/FEIS are wetlands and meadows, subalpine trees, alpine vegetation, park sensitive plant species, and invasive species.

**Wildlife:** Wildlife, particularly bears, can be affected by visitor use and administrative activities related to food storage. Native birds could be negatively affected by stock use if it increases nest parasitism by cowbirds. Invertebrates can be affected by grazing and visitor use.

**Special-status Species:** Some special-status species can be affected by visitor use and administrative activities. Special-status species analyzed in this WSP/FEIS include Yosemite toad (*Anaxyrus canorus*), the northern distinct population segment of mountain yellow-legged frog (*Rana muscosa*), and the Sierra Nevada yellow-legged frog (*Rana sierrae*), and the Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*).

**Cultural Resources:** The alternatives considered in the WSP/FEIS have the potential to affect historic structures and archeological sites.

**Socioeconomics:** Alternatives related to visitor use and access and commercial use, have the potential to affect the region's socioeconomic resources.

**Visitor Use:** There are a number of elements within the alternatives that could affect visitor use and experiences (other than those addressed in the "Wilderness Character" section), including actions that affect aesthetic and social values of wilderness.

**Park Operations:** Park operations may be affected by changes to visitor use and wilderness infrastructure and facilities.

## NPS PREFERRED AND ENVIRONMENTALLY PREFERABLE ALTERNATIVE

Alternative 2 is the NPS preferred alternative. It was selected by comparing the relative advantages of each alternative and examining how each alternative met the goals, objectives, and desired conditions for wilderness stewardship. Park managers believe that alternative 2 provides the most balanced, comprehensive approach to protecting wilderness character when compared with any other alternative. Overall, alternative 2 provides the best combination of management strategies, resulting in a practical, common sense approach to wilderness management. It protects the qualities of wilderness, supports a balance of resource preservation and use over the long term, and welcomes visitors to participate in stewardship and use of one of the world's finest wilderness areas.

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) requires that an agency identify its preferred alternative or alternatives in a final EIS [1502.14(e)]. The preferred alternative is the alternative "which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors" (Question 4a of the Council on Environmental Quality's "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations" (1981)). The NPS has identified alternative 2 as the preferred alternative. All of the alternatives would fulfill all of the above CEQ requirements to some degree. The action alternatives (alternatives 2 – 5) would fulfill these requirements somewhat equally, through continuation of existing wilderness and resource management policies, ecological restoration of fragile meadow and riparian areas, protection of water quality, and protection of archeological resources. The alternatives would vary primarily in protection of historic resources, sensitive meadows and riparian areas, protection of downed wood and sensitive species, and the diversity of recreational (primitive and unconfined) opportunities and opportunities for solitude provided to the public. All alternatives provide for as safe an environment as possible, given that wilderness recreation involves inherent risks.

The NPS has determined that alternative 5 is the environmentally preferable alternative. Alternative 5 best promotes the requirements of the national environmental policy expressed in section 101(b) of NEPA. It is the alternative that causes the least amount of impacts on the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources, and best achieves the short- and long-term goals for protecting and improving wilderness character. Alternative 5 best meets these requirements.

## ENVIRONMENTAL CONSEQUENCES

The summary of environmental consequences considers the actions being proposed and the cumulative impacts on resources from occurrences inside and outside the park. The potential environmental consequences of the actions are addressed for wilderness character, soils, water quality, vegetation, wildlife, special-status species, historic structures and districts, cultural landscapes, ethnographic resources, socioeconomics, visitor use, and park operations. Table ES-2 presents a comparison of the effects of the alternatives on the resources of the parks (see page xxiii).

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**TABLE ES-2: SUMMARY OF IMPACTS**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Wilderness Character**<br>Untrammeled Quality | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. |
| **Wilderness Character**<br>Natural Quality | The natural quality of wilderness would continue to be preserved. | The natural quality of wilderness would continue to be preserved. Overall visitor-use levels would remain similar to current use levels; on a wilderness-wide scale this alternative would have few detectable effects on the natural quality of wilderness. However, site-specific changes would result in improvement of this quality that would be detectable at a local scale. These local effects result from changes in the way that campfires, food storage, human waste, camping, and hiker and stock use, and commercial services are managed. | The natural quality of wilderness would continue to be preserved. Daily trailhead quotas would be increased; however, on a wilderness-wide scale this alternative would result in few detectable impacts on the natural quality of wilderness. Localized improvements on the natural quality could occur as a result of changes in the way that trails, campfires, food storage, human waste, camping, and hiker and stock use, and commercial services are managed. | The natural quality of wilderness would continue to be preserved. This alternative would result in few detectable effects on the natural quality of wilderness. The local improvements result from changes in food storage, human waste, and campsite management. The more substantial effects would result from the changes in campfire restrictions, elimination of grazing, and lower levels of commercial services. | The natural quality of wilderness would continue to be preserved. Under alternative 5, overall visitor-use levels would be reduced; however, on a wilderness-wide scale this alternative would have few detectable effects on the natural quality of wilderness. The local improvements would result from changes in campfire, food storage, human waste, camping, stock-use, and commercial services. |
| **Wilderness Character**<br>Undeveloped Quality | The level of development related to visitor management would remain constant. There would be no change to the undeveloped quality. | Alternative 2 would result in a decrease in privies and food-storage boxes resulting in a slight improvement to the undeveloped quality. | Alternative 3 would result in more development in wilderness and therefore would result in adverse effects on the undeveloped quality. | Alternative 4 reduces development more than any other alternative, resulting in beneficial effects on the undeveloped quality. | Alternative 5 would result in a decrease in privies and food-storage boxes resulting in a slight improvement to the undeveloped quality. |
| **Wilderness Character**<br>Opportunities for Solitude or Primitive and Unconfined Recreation | Under current conditions, the parks' wilderness provides outstanding opportunities for solitude and primitive and unconfined recreation, except at a few locations where visitor densities are relatively high and impacts on solitude occur. There would be no change to opportunities for solitude or primitive and unconfined recreation. | Alternative 2 would continue to provide outstanding opportunities for solitude and primitive and unconfined recreation in many areas, but in a few areas additional management controls would reduce the unconfined aspect, and slightly improve the solitude aspect. | Alternative 3 would result in improvements to opportunities for primitive and unconfined recreation in many areas, but in a few areas additional management controls would reduce the unconfined aspect. Alternative 3 would allow for increased overall wilderness use, reducing the opportunity for solitude, particularly in popular areas. | Alternative 4 would result in site-specific improvements in opportunities for solitude and primitive and unconfined recreation in many areas, but additional management controls would reduce the unconfined aspect. | Alternative 5 would result in improvement to opportunities for solitude and decrease opportunities for primitive and unconfined recreation throughout wilderness due to decreases in the number of visitors allowed in the wilderness. |
| **Wilderness Character**<br>Other Features of Value | This alternative does not provide for a focused assessment of trails and other historic features, thus, until such assessment is undertaken under another program or project, the historic features may not be adequately protected. There would be no changes to scientific study. | One historic feature, the Mission 66-era ranger station at Bearpaw Meadow, would be removed. There are no changes proposed for scientific activities. | One historic feature, the Mission 66-era ranger station at Bearpaw Meadow, would be removed. There are no changes proposed for scientific activities. | One historic district and three historic features (the Bearpaw Meadow High Sierra Camp, Redwood Meadow and Tyndall Creek ranger stations, and the Simpson Meadow Patrol Cabin) would be removed. There would be no changes to scientific study. | One historic district would be reduced in size. The Mission 66-era Bearpaw Meadow Ranger Station would be removed. There would be no changes to scientific study. |
| **Soils** | The effects of current visitor and administrative activities are not currently posing recognizable threats to soils. There would be no change under this alternative. | In general, this alternative seeks to maintain visitation into the parks' wilderness. Therefore, the impacts from continued visitor use would be similar to current conditions as described under alternative 1. Additional beneficial effects could result from removal of some installations, and establishment or restoration of trails. Adverse impacts could occur from installation of new privies and the establishment of campsites. Impacts would be localized and not measurably different from current conditions. | In general, this alternative would allow for increased visitation in wilderness. As a result, adverse impacts on soils may increase slightly in localized areas from an increase in visitors, stock, and development wilderness-wide. | This alternative seeks to maintain or slightly reduce visitation into the parks' wilderness. As a result, adverse impacts on soils may decrease slightly overall from reduced use. Beneficial effects would occur from a decrease in the number of stock, the elimination of grazing wilderness-wide, and the removal of installations. Adverse effects would result from the establishment of stock hold and feed areas. Beneficial and adverse effects would be localized and slight; and would not result in a measurable change on a wilderness-wide scale. | Visitor use would be reduced from current levels. Fewer visitors could result in fewer effects from visitor use overall, such as the development of social trails and new campsites. Beneficial effects would occur from a decrease in the number of stock and hikers and the removal of installations. Beneficial and adverse effects would be localized and slight; and would not result in a measurable change. |

**TABLE ES-2: SUMMARY OF IMPACTS TABLE (CONTINUED)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Water Quality** | No changes to the management of parks' wilderness would occur. Humans and stock appear to have had little impact on water quality or on the overall health of the aquatic ecosystem when compared to environments with very little use. Some measurable impacts have occurred, especially near the most heavily visited locations; however, the impacts remain below accepted thresholds of health or ecological concern. It is likely that the prevailing environmental conditions would persist under this alternative. | Under alternative 2, visitor use would remain at about the same levels. Therefore, the impacts from continued visitor use would be similar to current conditions as described under alternative 1. The prohibition of grazing in selected meadows may result in a small, beneficial effect on water quality. | Alternative 3 provides for increased visitor use levels in certain areas. Studies indicate that visitors have some small adverse impact on water quality, and it is reasonable to assume that additional users will likely result in more impacts, but the impacts should remain small and would remain below accepted thresholds of health or ecological concern. | Alternative 4 provides for a slight decrease in visitor use levels in certain areas. A reduction in users may result in small beneficial effects, but at a scale too small to measure. This alternative would likely result in some beneficial effects on water quality in the areas which had been open to grazing. | Alternative 5 provides for a reduction of visitor use levels wilderness wide. Wilderness visitors have a small, but adverse impact on water quality. A reduction in users would likely result in small, beneficial effects, but likely at a level below any detectable limits. |
| **Vegetation**<br>Wetlands and Meadows | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts due to stock use would be expected to remain comparable to current levels.<br>Stock parties would have access to 64% of the meadow area; 51% of meadow area would be open to grazing<br>The amount of grazing would be similar to current levels.<br>Grazing capacities would be adopted in popular destinations. Grazing intensity outside of these areas would be a function of variable annual stock use patterns and productivity. | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts due to stock use would be reduced from current levels.<br>Stock parties would have access to 54% of the meadow area; 48% of meadow area would be open to grazing.<br>The amount of grazing would be similar to current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. | Impacts from human traffic would increase but remain insignificant at the landscape scale.<br>There would be a decrease in the extent but an increase in the severity of trampling, grazing, and nonnative species impacts due to stock use as higher use would be concentrated in fewer destinations.<br>Stock parties would have access to 55% of the meadow area in the parks; 37% of all meadow area would be open to grazing.<br>The amount of grazing would be greater than current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of impacts due to stock use would be greatly reduced.<br>Parties traveling with stock would continue to have access to 44% of the meadow area in the parks.<br>Total stock use would decrease relative to current levels.<br>Grazing would be prohibited throughout the park; therefore, grazing impacts would be eliminated. Trampling impacts would be nearly eliminated. Nonnative species impacts due to stock use would be expected to decrease, with a chance for increased impacts due to a greater amount of carried feed used. | Impacts from human traffic would decrease and remain insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts would decrease with lower overall stock use and fewer areas open to grazing.<br>Stock parties would have access to 43% of the meadow area; 37% of meadow area would be open to grazing.<br>The amount of grazing would be less than current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. |
| **Vegetation**<br>High-elevation Long-lived Trees | Campfires would be prohibited in 439,515 acres while being allowed in 44,212 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. | Campfires would be prohibited in 442,096 acres while being permitted in 35,857 acres of high-elevation conifer habitat that supports the four subalpine or upper montane long-lived tree species (whitebark pine, foxtail pine, limber pine, and Sierra juniper). | Campfires would be prohibited in 543,965 acres while being permitted in 13,126 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. | Campfires would be prohibited in 837,806 total acres of the parks or 100% of wilderness. It would include all areas of high-elevation conifer habitat where the four long-lived tree species occur within the parks. This would include a wide range of vegetation types distributed throughout wilderness from low to high elevations. | Campfires would be prohibited in 412,530 total acres of the parks, while being permitted in 37,144 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. |
| **Vegetation**<br>Alpine Vegetation | Direct removal of alpine vegetation would continue to occur infrequently. Trampling of alpine vegetation along trail corridors, at popular destinations, and in alpine meadows would continue, particularly in areas of concentrated visitor use and where grazing occurs. Under current use levels and patterns, vegetation in untrailed alpine areas would remain largely undisturbed. Approximately 64% of mapped alpine vegetation areas would be closed to stock, which would serve to protect these areas from potential grazing and trampling impacts. | Impact types would be the same as described for alternative 1. If visitor use increases in off-trail areas, impacts on alpine vegetation could increase in extent and severity. Impacts would be reduced by limiting certain areas to pass through or day-use and by closing certain trails and meadows to stock access completely. Under this alternative 70% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impact types would be similar to alternative 1; however, the increased use levels and use patterns would likely increase trampling impacts on alpine vegetation, particularly in popular areas and around new food-storage boxes. Impacts along trails would continue, and if visitor use increases in off-trail areas, impacts on alpine vegetation could increase in extent and severity. Under this alternative, 69% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impacts on alpine vegetation would be similar to alternative 1, but could be reduced by limitations on visitor use, which could result in reduced use in off-trail areas. Trampling in alpine meadows by stock would largely cease due to grazing restrictions. However, the areas used for holding and feeding stock could be subject to increased trampling impacts. Under this alternative, 76% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impacts on alpine vegetation would be expected to decrease relative to current conditions, as a result of overall decreased visitor use. There could continue to be trampling impacts associated with grazing where it occurs. Under this alternative, 83% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. |

**TABLE ES-2: SUMMARY OF IMPACTS TABLE (CONTINUED)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Vegetation**<br>Plants of Conservation Concern | Direct removal and trampling of the plants of conservation concern by visitors would be expected to be infrequent under current levels and patterns of use. Although species in the meadows and uplands may suffer incidental trampling by visitors traveling through meadows or on cross-country routes, this would not be expected to result in population level impacts. Localized impacts from stock use could affect plants of conservation concern. There is no evidence that current use levels and patterns are resulting in population level impacts on these species. | Impacts on vascular plants and mosses of conservation concern would be similar to alternative 1. Restrictions and closures of certain areas to stock grazing and access would reduce the potential for impacts from trampling and grazing. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large scale losses or declines that could lead to the listing of any of the species. | The potential for trampling of the plants of conservation concern by hikers could rise with the increased visitor use. Species in the meadows and uplands may be subject to incidental trampling by visitors traveling through meadows or on cross-country routes, although this would not be expected to result in population level impacts. Localized impacts from stock use and grazing could affect plants of conservation concern. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large scale losses or declines that could lead to the listing of any of the species. | The potential for impacts on plants of conservation concern would be reduced due to the reduction in overall use and the elimination of grazing. | The potential for impacts on plants of conservation concern would be reduced as a result of reduced visitor use, smaller party sizes, and the elimination of cross country travel by stock. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large scale losses or declines that could lead to the listing of any of the species. |
| **Vegetation**<br>Nonnative Plants | Disturbance associated with visitor use, including off-trail travel and grazing, would remain the same, and there would be no change in the use of unprocessed hay and hay cubes. Thus there would continue to be the potential for the introduction and spread of nonnative species in popular areas of the wilderness and those frequented by stock. | The overall probability of nonnative introductions would be approximately the same as current conditions. However, beneficial effects would occur from slightly less off-trail stock travel and grazing, and the required use of processed (i.e. weed-seed free) feed. Although the probability of nonnative introductions would be less than current conditions, the spatial distribution of impacts would be similar to current conditions. | The overall probability of nonnative introductions would be approximately the same as current conditions. A slight reduction in off-trail travel and grazing, coupled with requirements for processed feed would mitigate some of the impacts from increased visitor and stock use and administrative activities. More meadows would have a lowered risk of nonnative plant introduction, as they would be closed to stock access. | The extent of disturbed land would be lowered due to reduced visitor and group sizes, and a reduction in facility maintenance. Overall, propagule pressure, the probability of nonnative introduction into wetlands, and the spatial distribution of impacts would be substantially lower than current conditions due to the elimination of grazing and a reduction in off-trail stock travel. | Similar to alternative 4, there would be beneficial effects on native plant communities due to reduced visitor use wilderness wide. |
| **Wildlife**<br>Black Bear | Under alternative 1, bears would continue to have benign encounters with people throughout wilderness, which would lead to habituation, which is often a precursory behavior to food-conditioning that occurs when bears associate people with food. Incidents would continue to remain relatively rare and bear population dynamics in wilderness would be dominated by natural processes. | Because the visitor use levels would be similar to present levels, there would be little change in undesirable bear behavior under this alternative. However, the removal of nearly half of the existing food-storage boxes and establishing new campsites could increase habituation and food-conditioning, leading to adverse impacts. If proper food storage is regularly practiced, increases in human/bear conflicts as a result of this action would be expected to be minimal. | Potential increases in human/bear encounters (and thus, increased habituation and food-conditioning) would result from increased visitor use and additional established campsites. These impacts would be mitigated by adding 35 new food-storage boxes, moving existing food-storage boxes to more appropriate locations, and increasing portable food container requirements. Overall, the change in impacts from current conditions would be minimal. | Reduced visitor use could result in a reduction of bear-human encounters. Beneficial effects from reducing visitor use, however, would be outweighed by the adverse impacts of removing all food-storage boxes. There would likely be a net increase in food-conditioned bears because a percentage of visitors would likely not properly store their food. | Beneficial effects from reducing visitor use would be outweighed by the adverse impacts of removing all food-storage boxes. There would likely be a net increase in food-conditioned bears because a percentage of visitors would likely not properly store their food. |

**TABLE ES-2: SUMMARY OF IMPACTS TABLE (CONTINUED)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Wildlife**<br>Birds | In wilderness, brown-headed cowbird abundance and parasitism would continue to be uncommon and impacts on native bird species would continue to be minimal because of the lack of development although there could be potential for localized problematic areas near ranger stations or other highly visited sites. Brown-headed cowbird abundance and parasitism rates could be relatively high near frontcountry developments (e.g., campgrounds, picnic areas, administrative and stock facilities, etc.), particularly for species restricted to lower elevations, and could limit population growth. | Additional meadow closures and decreases in stock party sizes could cause a reduction in available brown-headed cowbird habitat, limiting their impact on native bird species in wilderness. However, any increase in the use of supplemental feed products could increase habitat and food sources for the cowbird, potentially increasing opportunities for nest parasitism. Increased development in frontcountry sites may cause a slight increase in brown-headed cowbird abundance at these sites. However, the impacts on native bird species from brown-headed cowbird parasitism are not expected to increase substantially from current conditions. | Increased stock party sizes, establishment of stock campsites, and any increase in the use of supplemental feed products could increase habitat quality for brown-headed cowbirds, thus increasing the potential for parasitism of host species. Slight beneficial effects on native bird species would occur from reducing stock grazing in off-trail areas, reducing brown-headed cowbird habitat. | The closure of all meadows to grazing could contribute to reduced habitat quality for brown-headed cowbirds and could result in a decrease in parasitism to host species near these sites, relative to alternative 1. This would result in a beneficial effect on native birds. However, adverse impacts could result from use of supplemental feed carried into wilderness and the development of frontcountry sites, as described for alternative 2. | Abundance of brown-headed cowbirds would likely be reduced by the reduced stock party sizes, removal of stock campsites, and the reduced number of meadows open to grazing. However, adverse impacts could result from the use of supplemental feed carried into wilderness and the development of frontcountry sites, as described for alternative 2. |
| **Wildlife**<br>Invertebrates | Invertebrates would continue to be adversely affected by human and stock trampling, stock grazing, and stock fording of streams. The impact intensity would be scale dependent. Wilderness-wide, impacts would be undetectable; however, on a localized scale, measureable impacts would continue to occur. | Similar visitor use levels would result in impacts similar to those described under alternative 1. The closure of additional meadows to grazing would result in beneficial effects on invertebrates at these sites. These beneficial effects are anticipated to be minimal. | Increased visitor use would provide increased opportunities for invertebrates to be affected by trampling; however, the difference in impacts would not be measurable relative to alternative 1. Additional areas would be closed to grazing, providing beneficial effects on invertebrates in the newly closed meadows when compared to current conditions. These beneficial effects are anticipated to be minimal. | Reduced visitor use levels would result in a slight beneficial effect on invertebrates, but the effects would be similar to those described under alternative 1. The closure of all meadows to grazing would result in beneficial effects on invertebrates at these sites. These beneficial effects are anticipated to be minimal. | Reduced visitor use levels would result in a slight beneficial effect on invertebrates, but the effects would be similar to those described under alternative 1. The closure of additional meadows to grazing and off-trail stock travel would result in beneficial effects on invertebrates. These beneficial effects are anticipated to be minimal. |
| **Special-status Species**<br>Yosemite Toad | Visitors would continue to encounter Yosemite toads in wilderness, which could result in disturbance and/or trampling. Disturbance would not have an impact on toad populations. The small amount of potential trampling that may affect Yosemite toads under this alternative would be expected to result in no effect on their populations. Under this alternative stock use and grazing would continue to be managed to prevent unacceptable habitat degradation; therefore, while there may be adverse impacts on individual toads, the potential for population-wide effects is small. | As in alternative 1, the potential for disturbance to Yosemite toads from visitor encounters and trampling would continue to occur. However, additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | With an increase in use, there is an increased potential for visitors to disturb or trample Yosemite toads. However, additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | As in alternative 1, the potential for disturbance to Yosemite toads from visitor encounters and trampling would continue to occur, but would be reduced with reduced visitor access in toad habitat. Additional stock access restrictions and the elimination of grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | With decreased use overall, the potential for disturbance to Yosemite toads from visitor encounters and trampling would be reduced from current levels. Additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential for trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. |

**TABLE ES-2: SUMMARY OF IMPACTS TABLE (CONTINUED)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Special-status Species**<br>Mountain Yellow-legged Frog | Visitors would continue to encounter mountain yellow-legged frogs in wilderness, which could result in disturbance and/or trampling of frogs. Disturbance would not have an impact on frog populations. Trampling could adversely impact individual frogs, but would not have an impact on frog populations. The degradation of mountain yellow-legged frog habitat could occur in high use areas or near trails, but given the few locations where frog populations inhabit areas near trails, the potential for habitat degradation has been shown to be small. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be similar as described under alternative 1. Additional stock access and grazing restrictions would protect frogs and frog habitat, and thus would be expected to result in beneficial effects. | With increased use, there is an increased potential for visitors to disturb or trample mountain yellow-legged frogs. However, additional stock access and grazing restrictions would protect frogs and frog habitat, and thus would be expected to result in beneficial effects. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be similar as described under alternative 1. Additional stock access restrictions and the elimination of grazing would protect frogs and important frog habitat, and thus would be expected to result in beneficial effects. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be reduced from alternative 1 due to reduced visitor use. Additional stock access and grazing restrictions would protect frogs and important frog habitat, and thus would be expected to result in beneficial effects. |
| **Special-status Species**<br>Sierra Nevada Bighorn Sheep | Visitors would continue to encounter Sierra Nevada bighorn sheep in wilderness, which could result in disturbance. There is no evidence of adverse impacts on bighorn sheep from hikers and stock use under current use levels; therefore, these disturbances would not be of biological importance. | There could be an increased frequency of bighorn sheep/human encounters if new Class 1 trails are established in bighorn sheep habitat. However, such trails could concentrate visitor use and benefit bighorn sheep by making human activity more predictable. Reducing stock party sizes and areas open to grazing could benefit bighorn sheep in portions of their habitat. These beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | Trailhead quotas could increase on trails that intersect bighorn sheep habitat and new Class 1 trails could be established in bighorn sheep habitat; these actions could result in an increase in bighorn sheep-human interactions. It is probable that adverse impacts of increased bighorn-human interactions would continue to remain below the level of biological significance, and new Class 1 trails could concentrate use and benefit bighorn sheep by making human activity more predictable. Reducing areas open to grazing could benefit bighorn sheep in portions of their habitat. These beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | There would be beneficial effects on bighorn sheep because trailhead quotas would be reduced, stock would be allowed to travel on fewer trails, and party size would be reduced. Overall the effects would be beneficial and long-term; however, the beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | There would be beneficial effects on bighorn sheep from decreased visitor use and closures of areas to stock, specifically off-trail areas. Overall the effects would be beneficial and long-term; however, the beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. |
| **Cultural Resources** | Cultural resources in wilderness would continue to be protected. There would be no adverse effects on cultural resources. | Most cultural resources in wilderness would continue to be protected. The ranger station at Bearpaw Meadow would be removed, resulting in an adverse impact on an historic resource. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the California State Historic Preservation Office (CA SHPO). | Most cultural resources in wilderness would continue to be protected. The ranger station at Bearpaw Meadow would be removed, resulting in an adverse impact on an historic resource. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. | Most cultural resources in wilderness would continue to be protected. The removal of Bearpaw Meadow High Sierra Camp, including the ranger station, and the ranger stations or patrol cabins at Redwood Meadow, Simpson Meadow, and Tyndall would result in an adverse impact on those historic resources. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. | Most cultural resources in wilderness would continue to be protected. The removal of the ranger station at Bearpaw Meadow would result in an adverse impact on an historic resource The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. |

**TABLE ES-2: SUMMARY OF IMPACTS TABLE (CONTINUED)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Socioeconomics** | There would be little change from current conditions. At the regional level, the effects on socioeconomics related to park wilderness visitation and operations would be both beneficial and adverse. | Similar to alternative 1; however, the more direct consequences of the restrictions placed in the busiest areas of wilderness (i.e., reductions in quotas for specific busy trails, limits on commercial services in the Mount Whitney Management Area, and limits on grazing ), could result in lower use and the redistribution of use geographically and could adversely affect individuals or businesses. Alternative 2 allows for near current or slightly increased levels of overall use supported by commercial services, including stock-based use, providing potential economic benefits for some commercial service providers and supporting businesses. Alternative 2 would result in beneficial and adverse impacts over the long term. | Increased visitor use may result in long-term increases in the economic and social benefits from increased spending by wilderness visitors at local stores, motels and hotels, and other tourism-related businesses and attractions. Alternative 3 allows for increased use supported by commercial services, including stock-based use, providing potential economic benefits for some commercial services providers and supporting businesses. Alternative 3 would result in beneficial effects over the long term. | This alternative may result in limited economic and social effects. The decreased use could reduce income and increase costs for outfitters, adversely affecting the long-term economic viability of some outfitters, potentially to the point that one or more outfitters may choose to forego pursuit of Commercial Use Authorizations. Such a decision could have indirect effects in one or more gateway communities. Individual outfitters and guides could be affected differentially by changes associated with this alternative. | Same as alternative 4. |
| **Visitor Use and Experience** | Alternative 1 provides a positive visitor experience for the majority of visitors throughout the parks' wilderness. In the most popular areas, visitor experience could be adversely or beneficially impacted due to the condition of the wilderness (campsite conditions), the existence of facilities, and the availability of commercial services to support visitor use. | Alternative 2 would continue to provide a positive experience for the majority of visitors throughout the parks' wilderness, with localized improvements occurring in selected areas. However, some visitors may not be able to travel in the area of their choice due to new restrictions on access and stock use, campfire limits, and reductions in commercial services in the Mount Whitney Management Area. Visitor-related facilities would be reduced, resulting in both adverse and beneficial effects on the visitor experience, depending on their expectations. | Alternative 3 would continue to provide a positive experience for the majority of visitors throughout the parks' wilderness. However, increased use in the most popular areas and increased level of restrictions would result in adverse effects on the visitor experience when compared with the other alternatives. Visitor-related facilities would be increased, resulting in both adverse and beneficial effects on the visitor experience, depending on their expectations. | Under alternative 4, certain uses would be limited. Campfires would not be allowed. All food-storage boxes would be removed. Grazing would be prohibited. There would be decreased opportunities wilderness-wide for visitors to use commercial service providers. The increased restrictions and decreased visitor-related facilities would result in both adverse and beneficial effects on the visitor experience depending on their expectations. | Under alternative 5, visitor access would be limited to the lowest amount when compared with the other alternatives. There would be reduced opportunities for visitors traveling with stock due to off-trail restrictions. There would be fewer visitor-related facilities. There would be decreased opportunities wilderness-wide for visitors to use commercial service providers. Overall this alternative would result in both adverse impacts to those visitors who are unable to gain access to the wilderness, and beneficial effects on those visitors who gain access and experience wilderness. |
| **Park Operations** | There would be no change to current operations. | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. After initial changes to the wilderness-related programs, this alternative would result in impacts that are not substantially different from alternative 1 (no-action / status quo). | There would be cost and work associated with the installation of new facilities, and long-term maintenance requirements. After initial changes to the wilderness-related programs, this alternative would result in impacts that are not substantially different from alternative 1 (no-action / status quo). | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. There would be long-term costs associated with having to buy feed to allow the continued use of administrative stock. For other wilderness-related programs, this alternative would result in impacts that are not substantially different from alternative 1 ((no-action / status quo)). | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. Fewer visitors in wilderness would likely result in a decrease in administrative activities resulting from wilderness management. |

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ACHP | Advisory Council on Historic Preservation |
| APE | Area of Potential Effect |
| BMP | Backcountry Management Plan |
| CCC | Civilian Conservation Corps |
| CDFW | California Department of Fish and Wildlife |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CFU | Colony Forming Units |
| CNDDB | California State Natural Diversity Database |
| CNPS | California Native Plant Society |
| CPRE | Comprehensive Plan for Resource Education |
| CUA | Commercial Use Authorization |
| DEIS | Draft Environmental Impact Statement |
| DPS | Distinct Population Segment |
| DPWA | Designated Potential Wilderness Additions |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| END | Extent Necessary Determination |
| EPH | Encounters per Hour |
| ESA | Endangered Species Act |
| FAA | Federal Aviation Administration |
| FY | Fiscal Year |
| FMSS | Facility Management Software System |
| GMP | General Management Plan |
| HST | High Sierra Trail |
| IDT | Interdisciplinary Planning Team |
| JMT | John Muir Trail |
| KICA | Kings Canyon National Park |
| MRA | Minimum Requirements Analysis |
| NEPA | National Environmental Policy Act of 1969 |
| NF | National Forest |
| NHPA | National Historic Preservation Act |
| NPATMA | National Parks Air Tour Management Act |
| NPS | National Park Service |
| National Register | National Register of Historic Places |
| NWPS | National Wilderness Preservation System |

| | |
|---|---|
| Parks | Sequoia and Kings Canyon National Parks |
| PCT | Pacific Crest National Scenic Trail |
| PEPC | Planning, Environment, and Public Comment |
| PL | Public Law |
| RMP | Resources Management Plan |
| ROD | Record of Decision |
| RSS | Resources Stewardship Strategy |
| SEIS | Supplemental Environmental Impact Statement |
| SEKI | Sequoia and Kings Canyon National Parks |
| SEQU | Sequoia National Park |
| SHPO | State Historic Preservation Office(r) |
| SNFPA | Sierra Nevada Forest Plan Amendment |
| SUMMP | Stock Use and Meadow Management Plan |
| USEPA | Environmental Protection Agency |
| USFS | United States Forest Service |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| VUD | Visitor-use days |
| WSP | Wilderness Stewardship Plan |
| WVCM | Weighted Value per Campable Mile |
| YOSE | Yosemite National Park |

# Chapter 1

Purpose and Need

**ON THE PREVIOUS PAGE**
Looking down off the High Sierra Trail
Photo Courtesy of Rick Cain

# CHAPTER 1: PURPOSE AND NEED

## HOW THIS DOCUMENT IS ORGANIZED

This Wilderness Stewardship Plan and final Environmental Impact Statement (WSP/FEIS) provides direction for the National Park Service (NPS) to make decisions regarding the future use and protection of the parks' wilderness, in accordance with the Wilderness Act. It follows and documents the planning process in accordance with the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), the Wilderness Act, the Endangered Species Act (ESA), and other legal mandates governing decision making by the NPS.

The WSP/FEIS is a two-volume set. Volume 1 includes chapters 1 through 5, the glossary, and references. Chapter 1 introduces the plan and its purpose, includes the background of the plan and legal requirements, and provides an overview of the issues and concerns brought forth in the public scoping and plan development process. Chapter 2 describes a reasonable range of alternatives, including the preferred alternative (alternative 2), mitigation measures, alternative elements considered but dismissed from detailed analysis, and the environmentally preferable alternative. Chapter 3 describes those resources that are expected to experience environmental effects as a result of implementing any of the alternatives. It is not a comprehensive look at all the resources in the parks' wilderness; it is a focused discussion on what the NPS knows about the resources that may be affected by any of the alternatives. Chapter 4 describes the environmental impacts of the alternatives. Chapter 5 describes the methods that were used to collect information from the public, tribes, and agencies in order to determine what issues to address in the plan and to refine the alternatives. The glossary and reference sections include definitions of terms, and lists papers, plans, and other documents that were used or cited in plan development.

Volume 2 includes appendices A through S, including implementation strategies for components of the WSP/FEIS, as well as background information on resources, wilderness legislation and regulation, commercial services, and research in wilderness. Volume 2 also includes the Public Comment Analysis Report for the WSP and draft Environmental Impact Statement (DEIS) (appendix Q).

## INTRODUCTION

The wilderness areas of Sequoia and Kings Canyon National Parks (the parks) protect one of America's most superlative scenic landscapes. An extraordinary continuum of ecosystems is arrayed along the greatest vertical relief (1,370 to 14,494 feet in elevation) of any protected area in the lower 48 states. Its magnificent glacially carved canyons, broad lake basins, lush meadows, and sheer granite peaks — hallmarks of the most rugged portion of the High Sierra — form the core of the largest expanse of contiguous wilderness areas in California, which is visited and valued by people from around the world.

Many characteristic species of the western American mountains occupy this vast and diverse protected area, including black bears (*Ursus americanus*), mule deer (*Odocoileus hemionus*), acorn woodpeckers (*Melanerpes formicivorus*), American pika (*Ochotona princeps*), red-tailed hawks (*Buteo jamaicensis*), and lodgepole pine (*Pinus contorta*), as well as uncommon species such as Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), Sierra juniper (*Juniperus grandis*), foxtail pine (*Pinus balfouriana* ssp. *austrina*), and the iconic giant sequoia (*Sequoiadendron giganteum*). Four major river systems (Kings, Kaweah, Kern, and the South Fork of the San Joaquin) originate in the parks' wilderness and deliver snowmelt to the Sacramento/San Joaquin Delta and the dry Tulare and Buena Vista lake regions. The Kern is the only Sierran river that runs parallel to the north-south axis of the Sierra Nevada. It owes its distinctive dry environment inhabited by unique species assemblages to the rain shadow cast by the Great Western Divide.

***How Visitor Use is Estimated***

*The average number of wilderness visitors to the parks for the past 10 years (2003–2012) is approximately 21,600. This accounts for an average of 86,530 visitor-use nights per year.*

*These numbers are compiled from permits issued by Sequoia and Kings Canyon National Parks, and by Inyo, Sequoia, and Sierra national forests. This does not include Pacific Crest National Scenic Trail hikers coming from south of Sequoia National Forest or coming from north of Inyo and Sierra national forests, or John Muir Trail hikers coming from Yosemite National Park or other points north of Sierra National Forest.*

*It is estimated that these additional 3,000 to 3,500 visitors account for an additional 24,500 visitor-use nights (based on projected numbers of hikers and projected nights of use). The estimate of visitor-use nights per trip per person for Pacific Crest National Scenic Trail hikers and for John Muir Trail hikers is seven.*

*The combined information leads to an informed annual use estimate of 24,000 overnight visitors accounting for 110,000 visitor-use nights.*

Cave and karst formations form another outstanding physical feature of the parks' wilderness. They include Lilburn Cave (California's longest), uncommon high-elevation caves such as White Chief, and many other caves with outstanding, pristine mineral formations.

These and many other outstanding resource features make the parks' wilderness enormously valuable, particularly in light of its proximity to California's major population centers. This wilderness welcomes thousands of visitors each year: More than 8,600 permits were issued for overnight wilderness stays during the 2012 permit season, accounting for more than 85,000 visitor nights. An estimated 81,000 people take day trips into wilderness each year. The area provides diverse opportunities for activities, including hiking and backpacking, horseback riding and packing, mountaineering, fishing, boating, and other recreational and educational activities. The parks' wilderness contains more than 650 miles of trail, and the open nature of the Sierra's high-elevation basins makes these expanses unusually well suited for cross-country travel.

The large number of visitors that take advantage of the excellent opportunities to visit these scenic areas is an indicator of the great public value the parks' wilderness provides. It also means that those values must be wisely managed to protect wilderness character for present and future generations.

***Total Area of the Parks***

*865,964 acres*

***Total Area of the Parks Managed as Wilderness***

*837,806 acres*

*(nearly 97% of the parks)*

This plan will provide management direction for two designated wilderness areas, several potential wilderness additions, and an area of proposed wilderness. The California Wilderness Act of 1984 (Public Law [PL] 98-425) designated the Sierra Crest portion of both parks as the Sequoia-Kings Canyon Wilderness. The Omnibus Public Land Management Act of 2009 (PL 111-11) designated the John Krebs Wilderness in Sequoia National Park; it also expanded the Sequoia-Kings Canyon Wilderness to include the North Fork Kaweah area and Redwood Canyon area. The parks' total designated wilderness is now 808,078 acres — approximately 93.3% of the total parks' acreage of 865,964. In addition, because the southern end of the Hockett Plateau (approximately 29,500 acres) remains proposed wilderness, it is managed as wilderness, according to law (PL 111-11) and National Park Service (NPS) policy. The parks also contain several designated potential wilderness additions (DPWA), including the area around the Pear Lake Ski Hut and Bearpaw Meadow High Sierra Camp. These would become wilderness when and if the non-conforming activities (e.g., commercial enterprise) and/or facilities are removed. Altogether, designated and proposed wilderness areas comprise nearly 97% of the total acreage of Sequoia and Kings Canyon National Parks (figures 1 and 2).

Wilderness Acreages in Sequoia and Kings Canyon National Parks:

- Designated Wilderness: 808,078 acres (93.3% of the parks)
- Designated Potential Wilderness Additions: 212 acres (0.02% of the parks)
- Proposed Wilderness: 29,516 acres[1] (3.4% of the parks)

## PURPOSE AND NEED FOR THE PLAN

The Wilderness Act of 1964 mandates federal land-management agencies to manage wilderness areas "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, [and] the preservation of their wilderness character (§2(a))."

**Looking east over the Great Western Divide from 11,204-foot-high Alta Peak**

To provide for use of wilderness that also leaves it unimpaired, both the parks and their visitors are called upon to apply the concept of stewardship — protecting and being responsible — for their use and management of wilderness. This Wilderness Stewardship Plan (WSP or plan) will establish a framework for managing wilderness and areas managed as wilderness within Sequoia and Kings Canyon National Parks to meet these critical objectives:

- preserve wilderness character;
- provide opportunities for and encourage public use and enjoyment of wilderness in accordance with the Wilderness Act and other laws and policies;
- improve conditions in areas where there may be unacceptable levels of impacts on wilderness character; and
- protect the natural and cultural resources within wilderness.

[1] This number is based on boundaries set using standard wilderness boundary protocols. If this area were to receive wilderness designation, the size of the wilderness may vary from this acreage.

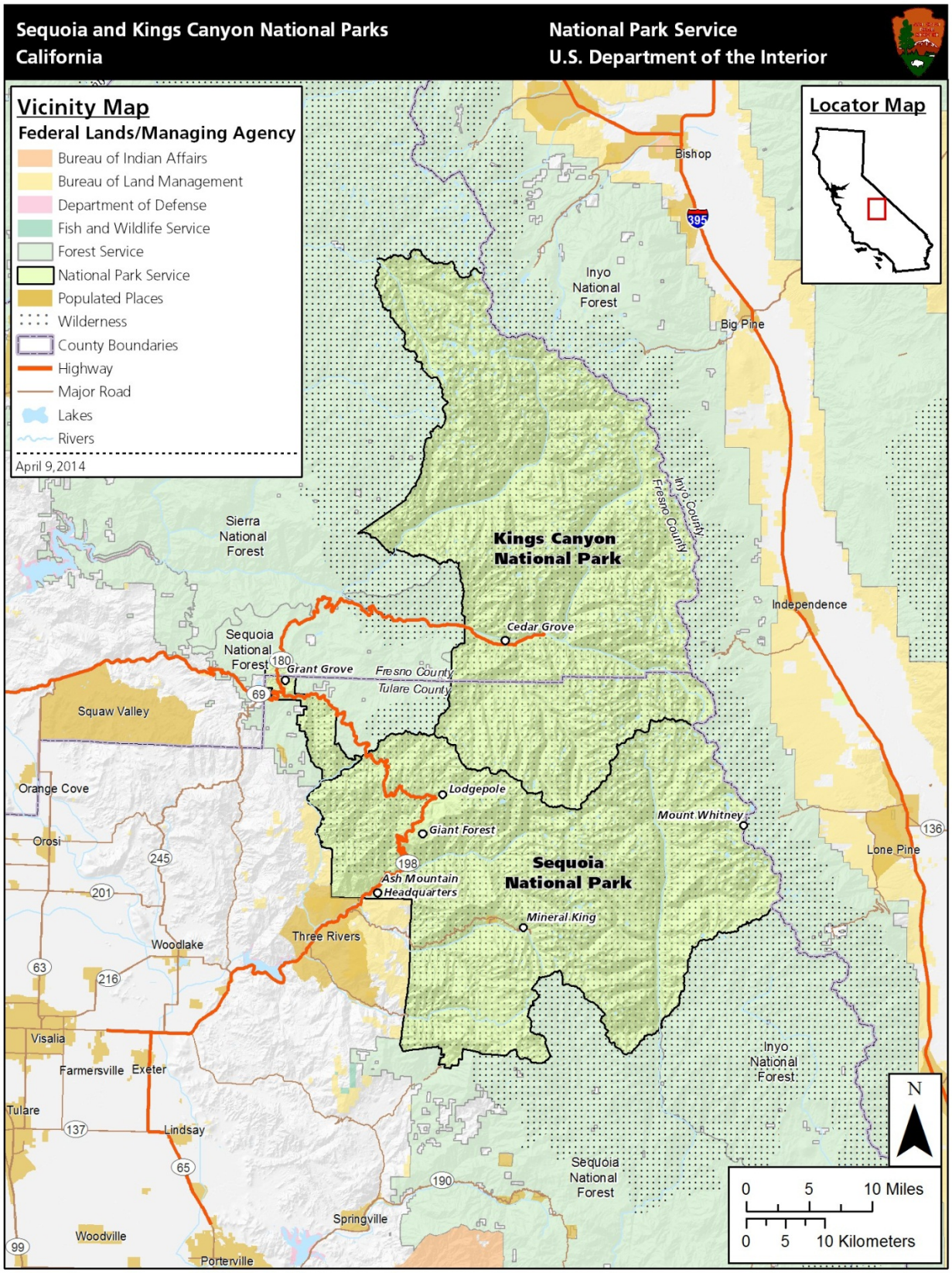



**Figure 1: Vicinity Map**

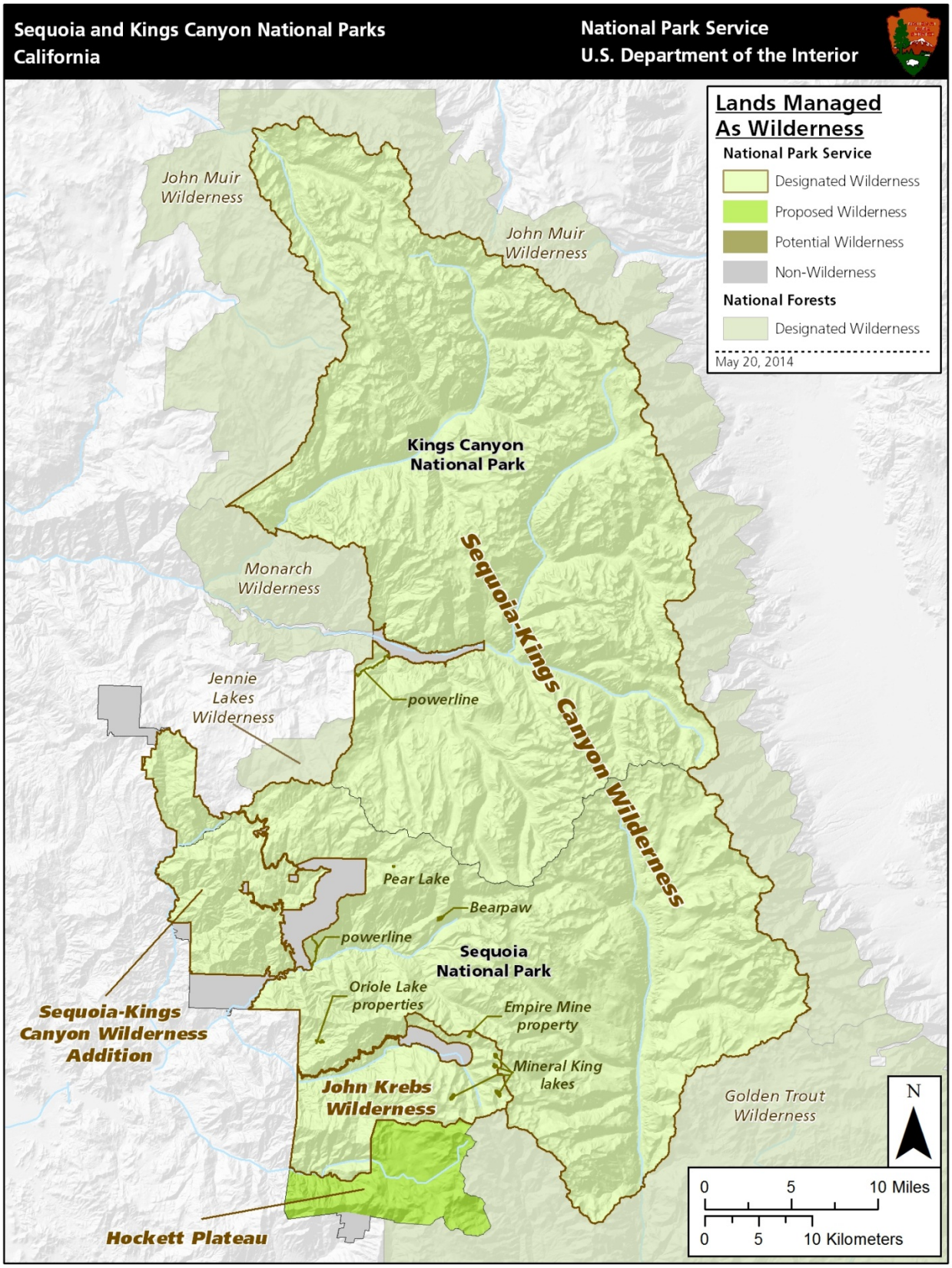



**Figure 2: Wilderness Areas In and Around Sequoia and Kings Canyon National Parks**

The purposes of the WSP include implementing the long-term vision for protecting wilderness character that is contained in the parks' *Final General Management Plan* (GMP) / *Final Environmental Impact Statement*, as well as enhancing established programs and actions for managing these areas as wilderness. (Note: In an order dated May 29, 2012, the U.S. District Court for the Northern District California issued an opinion in a lawsuit that challenged the parks' GMP [High Sierra Hikers Association v. U.S. Department of the Interior].) The Court's order "vacate[d] all portions of the GMP and Record of Decision (ROD) which provide programmatic guidance regarding the type or level of commercial stock services necessary in the Sequoia and Kings Canyon National Parks wilderness or direction as to need, appropriateness, or size of developments, structures, or facilities used completely or partially for commercial stock services." Where the GMP is referred to in this document, only those sections not vacated by the court order apply.) The WSP addresses recent servicewide guidance (NPS *Management Policies 2006* [NPS 2006a]), reflects provisions of the California Wilderness Act of 1984 and the Omnibus Public Land Management Act of 2009, incorporates new research findings, and uses a new interagency planning framework for the preservation of wilderness character. The WSP also replaces the current plans of record, the 1986 *Backcountry Management Plan* (BMP) and its accompanying 1986 *Stock Use and Meadow Management Plan* (SUMMP).

The WSP is needed to establish more specific goals and objectives for the management of visitors and certain administrative activities within the parks' wilderness. It includes desired conditions, and identifies measures and standards that establish resource conditions and serve as triggers for management action to reduce visitor impacts.

A variety of controversial or long-standing issues are addressed in the WSP, including visitor capacity (appendix A), wilderness permitting, party (group) size limits for people and stock, campfire regulations, camping locations and regulations, food-storage requirements, human-waste management, stock access, stock grazing, maintenance of facilities and trails, and management of frontcountry facilities that support wilderness use. The WSP also analyzes and determines the types and levels of commercial services that may be performed for activities that are proper for realizing the recreational or other wilderness purposes of the areas, as required by §4(d)(5) of the Wilderness Act (Extent Necessary Determination, appendix B).

In accordance with §102(2)(C) of the National Environmental Policy Act of 1969 (NEPA; PL 91-190), the parks have prepared this WSP and FEIS to consider alternative strategies for

***Definitions of Key Terms***

***Desired condition*** *— qualitatively describes an ideal condition of wilderness character. This is both a holistic condition, as well as the desired condition for all qualities of wilderness character: untrammeled, natural, undeveloped, and opportunities for solitude or primitive and unconfined recreation, and the other features of value quality.*

***Indicator*** *— a distinct and important element within each quality of wilderness character, which has measurable attributes that can be the focus of wilderness character monitoring. These function as categories that have one or more measures within them, and are established in Keeping It Wild (Landres et al. 2008).*

***Measure*** *— a specific aspect of wilderness resources or character that can be measured or quantified. Specific feature(s) used to quantify an indicator, as specified in a monitoring or sampling protocol. One or more specific measures may be used to quantify or qualitatively evaluate the condition of an indicator at a particular place and time.*

***Standard*** *— a threshold which conditions should not exceed. Standards identify the minimum level of acceptable wilderness condition, beyond which management action to improve conditions is triggered.*

***Management Action*** *— implemented following a problem analysis; triggered by monitoring of a measure against a defined standard.*

*Definitions derived from Landres et al. 2008, NPS 1997, and NPS 2014a.*

future management of the parks' wilderness. Five alternatives for achieving wilderness-stewardship objectives, including the no-action alternative, are identified and analyzed. They describe five different ways to provide appropriate types and levels of access for visitors and authorized users, preserve wilderness character, protect cultural and natural resources, and adhere to legally required management and preservation objectives.

The Sequoia and Kings Canyon National Parks Backcountry Access Act (PL 112-128), enacted on June 5, 2012, provides a deadline for completion of the WSP. The Act directs the parks to complete the WSP within three years, by June 5, 2015.

## PLANNING FRAMEWORK

The framework of this WSP/FEIS is founded on describing the wilderness character of the parks, defining the goals and objectives for managing wilderness visitor use and impacts, describing desired conditions for the visitor experience and wilderness character, developing visitor-use capacities, and determining the types and levels of commercial services necessary to support wilderness purposes.

### ADAPTIVE MANAGEMENT

This plan will incorporate and adopt the practices of adaptive management. Adaptive management is a structured, iterative process by which system monitoring is incorporated into management practices to achieve desired results. Adaptive ecosystem management requires continuing monitoring and investigations to advance the understanding of stressors impacting native species and wilderness resources so that managers remain informed about which stressors are most serious, which stressors are manageable, and the ways stressors can be managed. Scientific research allows for expansion of management tools available today and provides information that can be incorporated into future management activities.

Adaptive management is a system of management practices based on clearly identified desired conditions and monitoring to determine whether management actions are achieving objectives and, if not, facilitating management changes that would best ensure that desired conditions are met or re-evaluated (Walters and Holling 1990; Williams et al. 2007). Adaptive management is a technique employed for charting a decision-making course to obtain a desirable condition. An effective monitoring program is required to provide the navigational framework needed for successfully meeting the challenges of adaptive management.

Adaptive management integrates science and management (Lee 1993). From a science perspective, management objectives become the primary response of interest and the source of questions being posed. From a management perspective, the management objectives remain the primary concern, but learning becomes an additional, explicit objective. Thus, management takes on a part of science (i.e., learning), and science takes on a part of management (i.e., the objectives). More detailed information about the use and implementation of adaptive management is given in *Adaptive Management: The U.S. Department of the Interior Technical Guide* (Williams et al. 2007).

### WILDERNESS CHARACTER AND QUALITIES

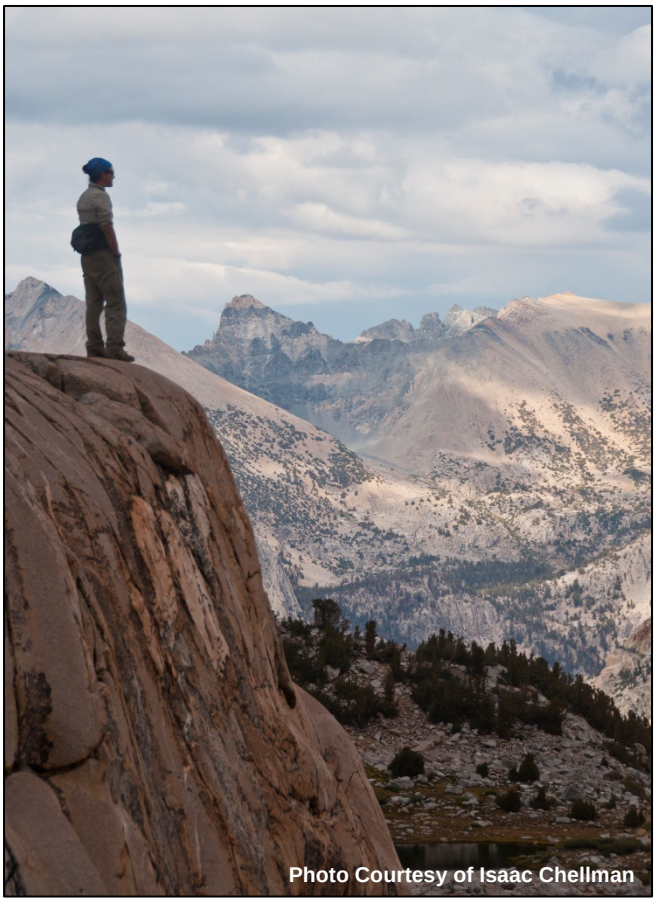
Wilderness stewardship planning focuses on preservation of wilderness character, the responsibility assigned to managers by the Wilderness Act. Wilderness character, however, is not specifically defined in the Wilderness Act. After carefully studying the act and its history, a formal interagency team developed *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character across the National Wilderness Preservation System* (Landres et al. 2008). This document describes wilderness character as

"the combination of biophysical, experiential, and symbolic ideals that distinguishes wilderness from other lands. These ideals combine to form a complex and subtle set of relationships among the land, its management, its users, and the meanings people associate with wilderness." In total, these relationships and meanings are described as "wilderness character."

The interagency team identified and developed a national framework for monitoring wilderness character that defines four foundational qualities that comprise wilderness character. These qualities were selected to be tangible, to link local conditions and management directly to the language of the Wilderness Act, and to apply to every wilderness regardless of size, location, or agency administration.

Four qualities that contribute to wilderness character are:

- *Untrammeled* — The Wilderness Act states that wilderness is "an area where the earth and its community of life are untrammeled by man" that "generally appears to have been affected primarily by the forces of nature." Therefore, wilderness is essentially unhindered, free from the actions of modern human control or manipulation. This quality is influenced by any activity or action intended to control or manipulate the components or processes of ecological systems. Actions that are taken to preserve or restore the natural quality often degrade the untrammeled quality, even when these actions are taken to protect resources, such as removing invasive plants or nonnative animals, or reducing unnatural fuel loads by cutting fuels or through management-ignited prescribed fires.
- *Natural* — The Wilderness Act states that wilderness is "protected and managed so as to preserve its natural conditions." Ecological systems within wilderness are substantially unaffected by modern civilization. This quality aims to preserve native species, patterns, and ecological and evolutionary processes, and to understand and learn from natural systems. This quality is degraded by such things as loss of native species, occurrence of nonnative species, alteration of ecological processes such as water flow or fire regimes, effects of climate change, and many other factors.
- *Undeveloped* — The Wilderness Act defines wilderness as "an area of primeval character and influence, without permanent improvements or human habitation…where man himself is a visitor who does not remain" and "with the imprint of man's work substantially unnoticeable." Wilderness retains its primeval character and influence. This quality is influenced by what are commonly called *Section 4(c) prohibited uses* — the presence of structures, installations, habitations, and aircraft landings, and the use of motor vehicles, motorized equipment, or mechanical transport. Removal of structures and avoiding these 4(c) prohibited uses preserves or improves this quality.
- *Solitude or a primitive and unconfined type of recreation* — The Wilderness Act states that wilderness offers "outstanding opportunities for solitude or a primitive and unconfined type of recreation." This quality is primarily about the opportunity for people to experience wilderness, and is influenced by factors that affect these opportunities. It provides for primitive recreation; the use of traditional skills; personal challenge, risk, and self-discovery; and freedom from constraints of modern life. This quality is preserved or improved by management actions that reduce visitor encounters, signs of modern civilization inside wilderness, facilities, and management restrictions on visitor behavior. In contrast, this quality is degraded by management actions that increase these restrictions.




**Looking east from North Guard basin near East Lake**

In addition to these four qualities, there are other values identified in the enabling legislation of the parks or wilderness that may contribute in a positive way to the overall concept of wilderness character. Wilderness Act Section 2(c)(4) states that a wilderness "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value"; these may include paleontological features, cultural resources, or even mining structures that are of wilderness-enhancing historical value. It is important to capture these other, often intangible values within the wilderness character framework and within wilderness stewardship planning. Wilderness areas in these parks contain valuable historic and cultural features and scientific features. These features contribute to the wilderness character of the parks and are described in "Chapter 3: Affected Environment."

There are also intangible aspects, such as symbolic and spiritual meanings, that are often unique to a single wilderness area or to specific places within a wilderness.

To determine how wilderness character could be applied to enhance wilderness preservation in national parks, the NPS formed a Wilderness Character Integration Team in 2010. This team produced two seminal documents to provide additional NPS guidance: *Wilderness Stewardship Plan Handbook: Planning to Preserve Wilderness Character* (NPS 2014a) and *Keeping it Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring* (NPS 2014b). Sequoia and Kings Canyon National Parks have used the guidance of both documents in developing this WSP.

## GOALS AND OBJECTIVES

Goals and objectives are key elements of a wilderness stewardship plan, as they establish and provide the direction for the parks' wilderness management program and reflect the purpose and need for planning. Wilderness goals and objectives flow from law, policies, park and wilderness enabling legislation, GMP objectives, public input, and more. The following identify what the WSP needs to address to achieve long-term successful management and protection of wilderness:

- Preserve ecological, geological, scientific, educational, scenic, and historical values of wilderness, including culturally significant resources and paleontological resources within wilderness, as important and prominent values, consistent with the Wilderness Act, California Wilderness Act, and applicable planning guidance from the GMP.
- Manage archeological, historical, and ethnographic sites in a manner that is compatible with wilderness and historic-preservation laws.

- Preserve dark night skies.
- Preserve natural soundscapes.
- Work to reduce conflicts between user groups as well as between users and sensitive resources.
- Determine the types and levels of commercial services that will be allowed in wilderness and manage these services subject to applicable laws and policies.
- Foster an inspired and informed public and park staff who value preservation of the parks' wilderness.
- Promote the Leave No Trace© minimum-impact practices.
- Promote safety within the context of wilderness where users are expected to be self-reliant.

## DESIRED CONDITIONS

*Desired conditions* are the natural and cultural resource conditions that the NPS aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources. In the context of a wilderness stewardship plan, *desired conditions* qualitatively describe an ideal condition of wilderness character. Some desired conditions may not be fully attainable due to factors unrelated to visitor use or the parks' management activities (e.g., due to external factors such as climate change and air pollution). However, the Wilderness Act requires that as a minimum, wilderness character be preserved from the time of designation, although Management Policies also allows for improvements to wilderness character. In this WSP, desired conditions are defined for the four primary qualities of wilderness character. More specific desired conditions are also provided under the qualities that relate specifically to visitor use management.

- The untrammeled quality of wilderness character would be preserved by limiting deliberate manipulation of ecological systems except as necessary to promote another quality of wilderness character.
- The natural quality of wilderness would be preserved by mitigating the impacts of modern civilization on ecosystem structure, function, and processes. The NPS aspires to minimize or localize adverse impacts caused by visitor use and administrative activities. In the wilderness, natural processes would dominate:
    - ecosystem structure and function
    - native biodiversity
    - water quality and quantity
    - decomposition, nutrient cycling, and soil forming processes
    - meadow and wetland productivity
    - fire regimes
    - soundscapes, dark skies, and viewsheds.

Additionally the NPS seeks to minimize adverse impacts caused by visitor use and administrative activities to cultural, historical, and pre-historical resources.

- The undeveloped quality of wilderness character would be preserved through the removal of installations that are unnecessary for the protection of other wilderness character qualities.

- Outstanding opportunities for solitude or primitive and unconfined recreation would be provided to support visitor use and enjoyment of the parks' wilderness areas in balance with the protection of other wilderness character qualities.
    - Visitors with diverse backgrounds and capabilities would have opportunities to use and be encouraged to enjoy wilderness;
    - Visitors would have opportunities to experience solitude, a state of being alone or feeling remote from society, although these opportunities could vary by location and time;
    - Visitors would have opportunities to participate in a variety of primitive recreation activities, characterized by non-motorized, non-mechanical travel and reliance on personal skill; primitive recreation activities would be managed to preserve other wilderness character qualities;
    - Visitors would have opportunities to recreate in an unconfined, self-directed manner, subject only to those regulations that are necessary to preserve wilderness character.

**Key Elements**

Because each alternative emphasizes different approaches to protecting wilderness character, alternative-specific objectives for the eleven planning elements were also developed. These can be found in "Chapter 2: Alternatives." These overarching element-specific objectives are:

- Visitor-use Levels — Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character.
- Trails — The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use.
- Campfires — Visitors would have the opportunity to enjoy campfires where campfires are compatible with the protection of vegetation and downed wood resources.
- Food Storage — Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food.
- Human Waste Management — Human waste would not contaminate water or create unsanitary or unsightly conditions. Management of waste would not unduly impact the undeveloped quality.
- Party Size — Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups.
- Camping/Campsites — Visitors would have the opportunity to choose camping locations, except in areas where camping would result in unacceptable impacts.
- Stock Use — Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character.
- Administrative Structures and Development — Installations and developments would be the minimum necessary for the administration of wilderness.
- Frontcountry Facilities to Support Wilderness — Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.
- Commercial Services — Commercial services may be performed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas and in a manner that ensures the preservation of wilderness character. Commercial services (wherein a service is performed for a fee or charge) would support visitor use and enjoyment of wilderness in a variety of appropriate ways.

**Hockett Meadow Ranger Station**

## VISITOR CAPACITY AND VISITOR-USE MANAGEMENT

The Wilderness Act requires the NPS, and three other federal land management agencies, to administer designated wilderness areas "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, [and] the preservation of their wilderness character . . ." The Act does not have an express requirement to determine or establish visitor capacity. However, NPS *Management Policies 2006* states: "The wilderness management plan will identify desired future conditions, as well as establish indicators [i.e., measures], standards, conditions, and thresholds beyond which management actions will be taken to reduce human impacts on wilderness resources" (6.3.4.2). NPS *Management Policies 2006* defines visitor capacity as "the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park."

One component of this WSP/FEIS is to identify visitor capacities for managing visitor use and to identify ways to monitor for and address unacceptable impacts on park resources and visitor experiences. Visitor capacity includes managing all components of visitor use (levels, types, behavior, timing, and distribution), with an understanding that with any use comes some level of impact that must be accepted. It is the responsibility of the NPS, to determine what level of impact is acceptable and what actions are needed to keep impacts within acceptable limits.

Visitor capacity has been determined to be a useful means of protecting wilderness character currently and in the future, is consistent with NPS *Management Policies 2006*, and is an element of the comprehensive wilderness planning process as defined by the NPS *Wilderness Stewardship Plan Handbook: Planning to Preserve Wilderness Character*. Development of the WSP includes several steps to determine the kinds and amounts of visitor use that the Sequoia-Kings Canyon, John Krebs, and proposed wilderness in the parks could sustain without unacceptable impact on wilderness character. These steps are identified in appendix A.

The number of stock in wilderness is also considered to determine if a stock capacity level could be established in addition to an overall visitor capacity level. The number of stock is controlled by trailhead quotas, party-size limits on and off trail, visitor service-day limits placed on commercial services

(appendix B), and grazing-capacity limits placed on individual meadows and forage areas. In addition, stock use is considered as integral within the overall visitor-capacity framework.

The WSP follows the three basic steps of accepted visitor-capacity frameworks (from Manning 2011):

1. Define desired conditions to be maintained or achieved.
2. Determine appropriate measures and establish standards for acceptable levels. Measures are then monitored to ensure they remain within standard. The monitoring component of visitor capacity helps test the effectiveness of management actions and provides a basis for informed adaptive management of public use.
3. For those measures that may exceed established standards, apply adaptive management actions or practices to return the measure to standard to prevent degradation of wilderness character.

Visitor capacity decision making is a continuous process that evaluates the results of monitoring efforts based on identified measures and standards. Management actions are taken when needed to control and maintain the impacts to remain within standard. The measures and standards included in this WSP would generally not change in the future. However, as monitoring of conditions in the wilderness of Sequoia and Kings Canyon National Parks continues, managers may decide to modify, add, or delete measures if better techniques/approaches are found to measure important changes in resource and social conditions. These changes related to measures, standards and monitoring, would be communicated to the public with a clear rationale to enable the public to provide input and track progress (see appendices A, B, C, and D for more thorough details on visitor capacity and wilderness character monitoring).

## BACKGROUND

Prior to designation of the Sequoia-Kings Canyon Wilderness in 1984, the terms *wilderness* and *backcountry* were often used interchangeably. Two plans developed in 1983 and updated in 1986, the BMP and the SUMMP, used the word *backcountry* to refer to all remote areas, including designated wilderness. The scope of these older plans, which included management of visitor use, stock use, and various resource-protection efforts, bears strong similarity to contemporary WSPs. However, the plans did not address certain issues that are specific to congressionally designated wilderness, such as applying the minimum-requirement concept to management actions, managing in a manner that preserves the whole of wilderness character, and establishing “extent necessary” for commercial services. The NPS recognized, as early as the late 1980s, that a future wilderness plan would need to reflect both the language and the statutory requirements of the Wilderness Act of 1964 (16 USC § 1131 et seq., PL 88-577). More information on the BMP and SUMMP can be found in the section “Previous Wilderness Planning Efforts.”

In 1993, the NPS released an environmental assessment (EA) supporting an increase in the maximum stock-party size from 20 to 25 head (*stock* includes horses, burros, mules, and llamas), to align NPS party-size limits with those of surrounding wilderness areas managed by the United States Forest Service (USFS) and Yosemite National Park. This plan was subsequently litigated (High Sierra Hikers Association v. Kennedy [1995 WL 382369, N.D. Cal.]) resulting in a return to the lower stock-party size in 1995. The central deficiency, reliance on an inadequate EA rather than developing a more detailed and thoroughly analyzed EIS, again pointed to the need for a comprehensive WSP.

In 1996, the NPS launched a public-involvement effort to kick off a comprehensive wilderness-planning effort. Several public-scoping workshops were hosted, and six internal workshops were held with park employees, to gather information on issues and desired conditions in wilderness. In the spring of 1997, the parks announced the intent to prepare an EIS for a wilderness management plan. The Notice of Intent

was published April 30, 1997 (*Federal Register* 23482, April 30, 1997). This was followed by the development and distribution in May 1998 of a "wilderness workbook" designed to obtain feedback from the public about wilderness issues, concerns, and possible management solutions (NPS 1998a).

However, after receiving national guidance on planning priorities, park managers determined that the wilderness-planning process would be suspended until a GMP was prepared for the parks. This intensive process was initiated in October 1997 and culminated with a ROD in September 2007. The GMP reaffirmed the need to develop a wilderness plan.

In the fall of 2009, the High Sierra Hikers Association brought suit against the NPS for failing to comply with the NPS Organic Act of 1916 (16 USC 1, 204), NEPA, the Wilderness Act, and the Administrative Procedure Act (PL 79-404, 60 Stat. 237) in the development of the GMP. The complaint revolved primarily around commercial stock services in wilderness. The court found that the GMP did not violate the NPS Organic Act, NEPA, or the Administrative Procedures Act. However, the court found that the GMP was deficient for failing to contain a specialized finding of necessity regarding the type and amount of commercial services that may be performed in park-managed wilderness (High Sierra Hikers Association v. U.S. Department of the Interior, 848 F. Supp. 2d 1036 [N.D. Cal. 2012]). The court directed the NPS to include such a finding in a WSP, which had been re-initiated with a Notice of Intent (*Federal Register* 23335, April 26, 2011).

The court also "vacate[d] all portions of the GMP and ROD which provide programmatic guidance regarding the type or level of commercial stock services necessary in the [parks'] wilderness area or direction as to the need, appropriateness, or size of developments, structures, or facilities used completely or partially for commercial stock services. This includes all references to the future development or installation of stock facilities" (High Sierra Hikers Association v. U.S. Department of the Interior, 848 F. Supp. 2d 1046 [N.D. Cal. 2012]). The court order further provided that the WSP could consider both frontcountry and backcountry issues in the WSP, and that the WSP "must consider imposing limits on group size, number of stock, trail suitability for various stock use types and the necessity of additional stock use facilities."

Soon after the court order was issued, Congress enacted the Sequoia and Kings Canyon Backcountry Access Act (PL 112-128), which was signed into law on June 5, 2012. The Backcountry Access Act directs the NPS to complete the WSP by June 5, 2015. The Act also invalidated the portion of the court order that had imposed an interim limit on the number of stock use nights that the NPS could authorize prior to completing a WSP. During the preparation of the WSP, the Act allows the NPS to authorize commercial services in wilderness at levels deemed appropriate by the Secretary.

## LEGAL REQUIREMENTS

This section summarizes the legal background in which this current wilderness planning effort is undertaken.

The NPS mission, along with other applicable laws, policies, and plans, directs wilderness management within the parks: "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations," (NPS Organic Act of 1916) and "The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations" (NPS *Management Policies 2006*).

The following laws, policies, and plans, in addition to those identified in the "Goals and Objectives" section, provide direction for wilderness management and are relevant to the planning effort for this WSP/FEIS.

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS *Management Policies 2006* (section 1.4) requires analysis of potential effects to determine whether proposed actions would impair park resources and values. As required, an impairment determination will be included in the ROD for the plan.

Wilderness legislation as it pertains to Sequoia and Kings Canyon National Parks is presented in appendix E. Additional wilderness regulations and permit conditions are presented in appendix F.

***Definition of Key Terms***

***Commercial Enterprise** – For the purposes of this plan, the Bearpaw Meadow High Sierra Camp and the Pear Lake Ski Hut are the only commercial enterprises in the lands managed as wilderness in Sequoia and Kings Canyon National Parks (pursuant to the House Report 98-40).*

***Commercial Service** – An activity in which any duties or work are provided by one person or entity for another person or entity in exchange for money; it includes diverse services commonly associated with guiding and outfitting.*

## WILDERNESS ACT OF 1964

**16 USC Sections 1131-1136, September 3, 1964, as amended 1978** — The Wilderness Act established the National Wilderness Preservation System (NWPS). More than 100 million acres have been included in the NWPS. Wilderness is a federal designation and the highest level of protection for wildlands that are found eligible for inclusion. By definition, wilderness is, "An area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or habitation, and which:

- generally appears to have been affected primarily by the forces of nature, with man's imprint substantially unnoticeable;
- has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- has at least 5,000 acres of land or is of sufficient size to make practicable its preservation; and
- may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Wilderness lands are managed under the provisions of the Wilderness Act of 1964 "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and to provide for the protection of these areas and the preservation of their wilderness character" (sec. 2(a)).

**Commercial Services** — The Wilderness Act prohibits commercial enterprise but allows commercial services "to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the [wilderness] areas." The parks permit (through a formal process) guided hiking and mountaineering trips and hired stock trips throughout much of wilderness. This WSP/FEIS includes the specialized finding to determine which commercial services are appropriate in wilderness and to what extent they would be authorized (appendix B).

## CALIFORNIA WILDERNESS ACT OF 1984

**Public Law 98-425 — September 28, 1984** — The California Wilderness Act of 1984 (PL 98-425) authorized the addition of more than three million acres of land within the State of California, to the NWPS established by the Wilderness Act of 1964.

> NATIONAL PARK WILDERNESS - SEC. 106: The following lands are hereby designated as wilderness in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 USC 1132(c)) and shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act.
>
> (2) Sequoia and Kings Canyon National Parks Wilderness, comprising approximately seven hundred and thirty-six thousand nine hundred and eighty acres; and potential wilderness additions comprising approximately one hundred acres, as generally depicted on a map entitled 'Wilderness Plan – Sequoia-Kings Canyon National Parks – California', numbered 102- 20, 003-E and dated July 1980, and shall be known as the Sequoia-Kings Canyon Wilderness. (pp. 9, California Wilderness Act of 1984)

## OMNIBUS PUBLIC LAND MANAGEMENT ACT OF 2009

**Public Law 111-11 — March 30, 2009** — On March 30, 2009, the Omnibus Public Land Management Act of 2009 (PL 111-11) designated 52 new wilderness areas and added acreage to 26 existing areas in the United States, adding a total of more than 2 million acres to the NWPS.

In Sequoia and Kings Canyon National Parks, this act established the John Krebs Wilderness and expanded the Sequoia-Kings Canyon Wilderness.

> SEC. 1902, DESIGNATION OF WILDERNESS AREAS:
>
> > In accordance with the Wilderness Act (16 USC 1131 et seq.), the following areas in the State are designated as wilderness areas and as components of the NWPS:
> >
> > (1) JOHN KREBS WILDERNESS —
> >
> > > (A) DESIGNATION — Certain land in Sequoia and Kings Canyon National Parks, comprising approximately 39,740 acres of land, and 130 acres of potential wilderness additions as generally depicted on the map numbered 102/60014b, titled ''John Krebs Wilderness'', and dated September 16, 2008.
> >
> > (2) SEQUOIA-KINGS CANYON WILDERNESS ADDITION — Certain land in Sequoia and Kings Canyon National Parks, California, comprising approximately 45,186 acres as generally depicted on the map titled ''Sequoia-Kings Canyon Wilderness Addition'', numbered 102/60015a, and dated March 10, 2008, is incorporated in, and shall be considered to be a part of, the Sequoia-Kings Canyon Wilderness.

## SEQUOIA AND KINGS CANYON BACKCOUNTRY ACCESS ACT OF 2012

The Sequoia and Kings Canyon Backcountry Access Act (PL 112-128), enacted on June 5, 2012, authorizes the Secretary of the Interior to allow the continuation of commercial stock services within the parks' wilderness until an "analysis and determination required under the Wilderness Act" is completed, or for four years, whichever is sooner. The act also directs the NPS to complete a WSP by June 5, 2015.

## HIGH SIERRA HIKERS ASSOCIATION V. U.S. DEPARTMENT OF THE INTERIOR, 2012 U.S. DIST. LEXIS, 74124 (N.D. CAL.)

This court order, as described in the "Background" section, vacated the portions of the parks' GMP that provided programmatic guidance regarding the type or level of commercial stock services in wilderness

as well as those portions of the GMP that provided guidance on facilities used to fully or partially support commercial stock services. In compliance with this court order, the NPS has not used these provisions of the GMP as guidance for this plan.

## NATIONAL PARKS OMNIBUS MANAGEMENT ACT OF 1998

The National Parks Omnibus Management Act of 1998 (P.L. 105-391) directs the Secretary of the Interior "to assure that management of units of the National Park System is enhanced by the availability and utilization of a broad program of the highest quality science and information." It established the framework for fully integrating natural resource monitoring into the management process of the NPS. Section 5934 of the Act requires the Secretary of the Interior to develop a program of "inventory and monitoring of NPS resources to establish baseline information and to provide information on the long-term trends in the condition of the National Park System resources." The message of the Parks Omnibus Management Act of 1998 was reinforced by Congress in the FY 2000 Appropriations bill.

## PRIVATE LANDS, NON-CONFORMING USES, AND RETAINED RIGHTS

**Bearpaw Meadow High Sierra Camp in Sequoia National Park**

The private lands, non-conforming uses, and retained rights on lands adjacent to or surrounded by wilderness, and therefore most relevant to this WSP/FEIS, are summarized below:

Two inholdings (private lands surrounded by public lands) are present in the parks' wilderness. The first consists of several parcels of land owned by multiple owners, comprising 12 acres with five cabins near Oriole Lake in Sequoia National Park. Oriole Lake and adjacent park lands are designated wilderness, as is the primitive road that provides access to these private lands. The other inholding with land adjacent to wilderness is a private-land parcel of approximately 17 acres on Empire Mountain in the Mineral King area.

The historic Pear Lake Ski Hut is used as a ranger station during the summer, and is operated as a ski hut in the winter months by the parks' cooperating association. The California Wilderness Act of 1984, and its accompanying House of Representatives Committee Report 98-40 (1983), provided for continued winter operation of the Pear Lake Ski Hut unless this nonconforming use is deemed to have unacceptable wilderness impacts. The five-acre area is categorized as a DPWA based on the nonconforming use of a commercial enterprise (winter ski-hut operation) in wilderness.

The Bearpaw Meadow High Sierra Camp, operated during the summer months, is a commercial lodging enterprise. A contracted concessioner operates the camp within a 32-acre DPWA, per the California Wilderness Act (1984) and its accompanying House of Representatives Committee Report 98-40 (1983).

Access to and maintenance of hydrologic, meteorological, and climatological devices, facilities, and associated equipment (e.g., snow pillows and storage sheds) throughout the parks' wilderness is allowed (House of Representatives Committee Report 98-40; and PL 111-11, Sec. 1903 Administration of Wilderness Areas). These devices and facilities are used by the California Department of Water Resources to determine water content of snow for downstream agricultural and domestic uses and to predict flood potential.

The operation and maintenance of four constructed dams to hold and regulate water runoff for electrical-power generation (a total of 112 acres of lands and impounded surface water in the Mineral King area) is authorized per Public Law 108-447 (118 Stat. 3068, December 8, 2005, amending Public Law 99-338, 100 Stat. 641, June 19, 1986). In the early 1900s, Congress authorized the development of hydroelectric facilities on forks of the Kaweah River adjacent to and within Sequoia National Forest (in what is now wilderness). These facilities are owned and operated by the Southern California Edison Company. In 2006, the NPS issued a 10-year special-use permit that allows the continued maintenance and operation of these hydroelectric facilities. The NPS is authorized to issue two subsequent 10-year permits for these facilities. Southern California Edison Company's current special-use permit is valid until September 8, 2016.

Two utility-powerline corridors are present in designated potential wilderness additions. The two rights-of-way are a 60-foot-wide corridor running from 0.5 miles northeast of Moro Rock summit south to the Middle Fork Road, and a 60-foot-wide corridor on the west side of Kings Canyon National Park from near Lookout Peak to the Cedar Grove vicinity (approximately 12 and 22 acres respectively).

## RELATIONSHIP TO OTHER PLANNING

This section includes previous wilderness plans, existing planning efforts, and planning efforts of adjacent wilderness areas that are relevant to wilderness management at the parks.

### PREVIOUS WILDERNESS PLANNING EFFORTS

A description of the previous wilderness planning efforts at Sequoia and Kings Canyon National Parks can be found below.

**General Management Plan (2007)** — The GMP and EIS process was initiated in October 1997 and culminated with a ROD in September 2007. It commits the parks to preparing a tiered plan for managing wilderness resources, and explains that this tiered plan would be an implementation-level plan that focuses on both the parks' wilderness stewardship overall and on stock use within wilderness.

The GMP establishes a vision for what these national parks should be. The GMP:

- establishes the parks' mission and defines the parks' significance (the significance is presented in the next section of this chapter);
- determines the appropriate amounts of visitation, types of experiences, and facilities;
- establishes broad desired conditions for natural and cultural resources and for visitor experiences;
- provides a management framework for the next 15 to 20 years; and
- calls for the development of a wilderness plan.

It is a function of the GMP to prescribe desired future conditions. Because the GMP is a conceptual plan, it does not assess whether it is feasible to achieve those prescribed conditions within the life of the plan. It

identifies what the parks should ultimately provide for resource protection and visitor experience. The GMP suggests the types and kinds of actions needed to reach the desired condition, but does not specify a course of action; that is the role of the strategic plan, implementation plans, and annual performance/work plans. The determination of whether each of the prescribed conditions will be achieved is also left up to subsequent plans.

The GMP affirms the need and desire of the parks to develop a wilderness plan. The purposes of the WSP include serving as an implementation-level guide to applying the GMP's long-term vision for protecting wilderness character, and to enhance established programs and actions deemed necessary for managing these areas as wilderness.

**Backcountry Management Plan (1986)** — The parks' current BMP was approved in 1986 and provides direction for managing wilderness and backcountry areas. The goal of the plan is to provide for the enjoyment of the parks while protecting park resources, the natural processes which shape them, and the quality of experience distinctive to them. The plan discusses the approach to backcountry/wilderness management necessary for the achievement of the goal of the plan, and provides an overview of the facilities and resources in the backcountry/wilderness. The plan also describes the management objectives for various activities in the backcountry/wilderness and the policies and actions required to implement them. The WSP will replace the BMP.

**Stock Use and Meadow Management Plan (1986)** — Recognizing that stock has distinctive effects on park resources, a SUMMP was developed concurrently with the 1986 BMP. Since 1986, stock use has been managed and regulated by the SUMMP. The SUMMP discusses the character of the parks' meadow resources and reviews the history of stock use and management. It provides the basis for use patterns and levels, and specific management prescriptions for those areas where grazing is allowed. It establishes controls to prevent areas open to grazing from further induced change in plant composition, density, cover, and/or vigor. The plan ensures that a series of meadows, including representatives of all types within the parks, be protected from grazing to provide opportunities to compare ungrazed meadows with grazed meadows as part of the monitoring program, provide opportunity for other scientific study of meadows that are not affected by stock grazing, and to provide opportunity for park visitors to observe a representative sample of meadows, in proximity to general travel routes, that are not affected by grazing. The SUMMP also establishes a monitoring program to provide continuing information about the effects of stock on the resources of the parks, so that guidelines can be modified to protect park resources or allow additional use to occur. This WSP will replace the SUMMP.

## EXISTING AND ONGOING PLANNING EFFORTS RELEVANT TO THE WILDERNESS STEWARDSHIP PLAN

This section includes a summary of existing and ongoing park plans that are pertinent to the WSP/FEIS.

**Aquatic/Water Resources Management Plan (1989)** — The Aquatic/Water Resources Management Plan describes park water resources information base and problems, along with park-specific objectives for management of aquatic and water resources. Data-collection efforts include developing water quality monitoring programs, identifying impacts in both frontcountry and wilderness areas, and monitoring species. Actions include managing visitor use, managing wet meadows, mitigating acidic deposition, and fostering public education, as well as conducting research. The parks' Resources Management Plan and GMP are both largely consistent with objectives identified in the 1989 Aquatic/Water Resources Management Plan. In addition, the Water Resources Information and Issues Overview Report (2005), prepared jointly by the NPS Water Resources Division and parks staff, updated the parks' water resources information base, identifies current issues, and provides considerations for future actions. Components of the 2005 report are used in the development of time-sensitive management strategies and actions relating

to water resource issues, in concert with emerging implementation plans including the Restoration of Native Species in High Elevation Aquatic Ecosystems Plan, the Resources Stewardship Strategy, and this WSP.

**Bear Management Plan (1992)** — Black bears are an important wildlife resource generally found below timberline throughout both parks. Although most of the bears subsist on natural foods, others learn to forage for human foods. In the front-country, human food becomes available to bears from several sources: intentional feeding by visitors, improper use of bear-proof garbage cans, inadequate garbage-collection schedules, inadequate design of garbage and/or food-storage facilities, and food left unattended. Because of their large home ranges, bears that become food-conditioned in front-country areas can travel to wilderness areas. Human food becomes available to bears in wilderness primary through insufficient food storage techniques that are easily overcome by bears (e.g., storing in backpacks, hanging in trees, etc.), or through improper use of food storage lockers and portable bear-resistant containers. Once bears discover human food, they often alter their wild behavior and foraging habits to obtain it, and closely approach people. The ensuing conflicts between bears and humans result in damaged property, personal injuries, and destruction of some bears. The goal of the Bear Management Plan is to restore and perpetuate the natural distribution, ecology, and behavior of black bears, free of human influences. Bear-management objectives include: eliminating human-food sources and human activities that may significantly modify bear populations; minimizing and mitigating human/bear interactions that result in a learned orientation of bears toward people, a negative experience for people, and/or a need to destroy bears; and providing opportunities for visitors to understand and appreciate the black bear in its natural environment.

**Cave Management Plan and Environmental Assessment (in process)** — More than 250 caves have been found within Sequoia and Kings Canyon National Parks, most of them within designated wilderness. The purpose of the Cave Management Plan and EA is to provide a comprehensive plan that considers future management and protection of cave and karst resources, while allowing safe and controlled public use and enjoyment of caves in accordance with law, policy, and regulations. It is the intent of the plan and assessment to identify a range of appropriate tools and management actions that could be used to achieve the plan's purpose and to ensure adherence to wilderness mandates and policies.

**Comprehensive Plan for Resource Education (2006)** — Even more than in the past, successful park management now requires a well-informed public that understands and supports the parks' mission and management. With the parks contending with a broader array of issues (such as global climate change) than ever before, interpretation for park visitors is increasingly seen as an important element in a larger initiative called "resource education." Resource education is usefully defined as an integrated program of communication initiatives intended to involve not only visitors but also park neighbors, interested parties, and the general public in relevant park issues. The general goals of resource education are: (1) strengthening public interest in the parks; (2) increasing public awareness of the NPS and its mission; (3) generating increased awareness of the accelerating problems facing parks; and (4) building public support for NPS management initiatives and programs as it works to preserve parks in the 21st century.

The GMP establishes long-term goals for the parks to pursue over the next several decades. The Sequoia and Kings Canyon National Parks Comprehensive Plan for Resource Education (CPRE), on the other hand, is intended to provide guidance for a shorter period of only 5 to 10 years. The CPRE identifies and pursues those portions of the GMP vision that seem most appropriate and possible for the life of this plan. The CPRE defines the role of interpretation and education at the parks, identifies appropriate methods for pursuing this work, calls for and defines a park-specific Comprehensive Interpretive Plan, and provides a general vision of the role of resource education in the parks.

**Fire and Fuels Management Plan (2003, with limited annual and comprehensive five-year updates [2013])** — Wildland fire has long been recognized as one of the most significant natural processes affecting and shaping Sierra Nevada ecosystems. Virtually all vegetation communities show evidence of fire dependence or tolerance. At the same time, wildland fire has the potential to threaten human lives, health, and property. Consequently there is a need to manage wildland fire to reduce threats, while at the same time restoring and/or maintaining its function as a natural process. The parks have developed a Fire and Fuels Management Plan (NPS 2013a) to provide long-term direction for achieving goals related to human safety and ecosystem management. The plan also satisfies the requirements and direction provided in policy, legislative authority, park-purpose statements, higher-level planning documents, and natural/cultural resource-management objectives with regard to wildland fire.

**Natural and Cultural Resources Management Plan (1999) and Resource Stewardship Strategy (in process)** — The Resources Management Plan (RMP) serves as the foundation for the parks' resource stewardship programs. The purpose of the RMP is to propose and justify a coordinated program to identify, protect, preserve, and enhance the natural and cultural resources of the parks. This plan draws upon appropriate legislation and NPS policy as well as on knowledge of the resources of the parks and their special needs.

The parks are updating the RMP with a Resources Stewardship Strategy (RSS) (expected completion in 2016). This will recommend science- and scholarship-based approaches to achieve and maintain the desired conditions of the parks' natural and cultural resources. It will focus on ways to conserve natural and cultural resources in an era of rapid change and uncertain conditions. The RSS will apply to all areas of the parks. The conservation goals outlined in the strategy will adhere to the law and the mission of the NPS and use the best available science to adaptively manage for the long term. Strategies to conserve native regional biodiversity and ecological integrity, and to preserve cultural values, will be identified in the RSS. In addition, future implementation plans would be developed based on the direction identified by the RSS.

**Restoration of High Elevation Aquatic Ecosystems Plan and EIS (in process)** — The purposes of this Restoration Plan are: 1) to guide NPS management actions to restore and conserve native-species diversity and ecological function to selected high-elevation aquatic ecosystems that have been adversely impacted by human activities (primarily the introduction of nonnative fish), and 2) to increase the resistance and resilience of these species and ecosystems to human-induced environmental modifications such as nonnative fish, disease, and climate change. Once completed, the Final Restoration Plan/Final EIS would be implemented over a period of 25 to 35 years, with an internal evaluation of management effectiveness scheduled every 5 to 10 years. The plan is expected to be completed in 2016 and will include a comprehensive discussion of appropriate management tools for restoring high-elevation aquatic ecosystems in the parks' wilderness.

## PLANNING EFFORTS OF ADJACENT LANDS AND WILDERNESS AREAS

Wilderness and related plans of adjacent USFS lands and Yosemite National Park are described in this section. Three national forests are immediately adjacent to the parks: the Sierra, Sequoia, and Inyo National Forests. Each of these has shared wilderness boundaries with Sequoia and Kings Canyon National Parks. Coordination with the adjoining USFS wilderness areas and Yosemite National Park was ongoing throughout the WSP/FEIS process and will continue in the future.

**United States Forest Service Wilderness Management Plan (Inyo and Sierra National Forests)** — The Inyo and Sierra National Forests released the ROD for the Final EIS/Wilderness Management Plan for the Ansel Adams, John Muir, and Dinkey Lakes wildernesses in 2001. This document is a joint plan for these forests' wilderness areas and replaces management direction in the Land Resource Management

Plans for the Ansel Adams, John Muir, and Dinkey Lakes wildernesses. The Wilderness Management Plan addresses issues associated with visitor use, commercial activities, and resource conditions. Key elements of the management direction for these wildernesses include commercial and non-commercial trailhead quotas, commercial services, wilderness permits, managing different areas for different levels of use, day use, system and user-created trails, single-use trails, campsite densities and conditions, closures for campfires, food storage, recreation-stock forage, structures, and cultural values.

**Sierra Nevada Forest Plan Supplemental Environmental Impact Statement (2010)** — Stretching along a north-south axis for more than 400 miles, the Sierra Nevada forms one of the longest continuous mountain ranges in the lower 48 states. The USFS manages nearly 11.5 million acres of land under the Sierra Nevada Forest Plan. In January 2004, the USFS issued the Sierra Nevada Forest Plan Amendment (SNFPA), which applies to eleven national forests in the Sierra Nevada to improve the protection of old-growth forests, wildlife habitats, watersheds, and communities in the Sierra Nevada and on the Modoc Plateau. The amendment is a Land and Resource Management Plan formulated and promulgated pursuant to the National Forest Management Act (16 USC §1604). The National Forest Management Act requires the USFS to provide for and to coordinate multiple uses of the national forests, including "outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness" (16 USC §1604(e)(1)).

In 2010, a supplemental EIS (SEIS) was released to address two orders issued by the Eastern District Court of California in 2009. This supplemental document provides an objective comparison of all the alternatives considered in detail in the 2004 SNFPA Final SEIS, including those carried forward from the 2001 SNFPA Final SEIS. It also compares the alternatives in terms of the objectives of reducing stand density for forest health, restoring and maintaining ecosystem structure and composition, and restoring ecosystems after severe wildfires and other large catastrophic events.

**Giant Sequoia National Monument Plan (2012)** — The Giant Sequoia National Monument is located adjacent to Sequoia and Kings Canyon National Parks and covers 328,315 acres administered by the USFS within Sequoia National Forest. It was created by presidential proclamation on April 15, 2000. The plan provides 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 direction in the 1988 Sequoia National Forest Land and Resource Management Plan for this part of the Sequoia National Forest. It is the single comprehensive management plan for this area. Parts of the Golden Trout and Monarch wilderness areas are within the monument; therefore, this planning document is important to consider in the WSP.

**Sierra, Sequoia, and Inyo National Forest Assessments and Forest Plan Revisions (in process)** — In December 2013, the USFS released the Final National Forest Assessments for the Sierra, Sequoia, and Inyo National Forests. These assessments resulted from the 2012 Planning Rule to provide a process and structure to create local land- and resource-management plans for national forests in California. The rule establishes an ongoing, three-phase process: 1) assessment; 2) plan development or revision; and 3) monitoring, and is intended to create understanding around landscape-scale management. It takes an integrated and holistic approach that recognizes the interdependence of ecological processes with social and economic systems. The assessments are designed to rapidly evaluate readily available existing information about relevant ecological, economic, and social conditions, trends, and sustainability and their relationship to the current land and resource management plan within the context of the broader landscape. The assessments are not decision-making documents, but provide current information on planning topics. The next steps in the forest plans revision process include identifying need-to-change and desired conditions for the forests as well as completing an EIS. The need-to-change identifies the areas that need a change in direction from the current management. The preliminary need-to-change is based on what is important to people; threats to resources; undesirable trends in social, economic, or ecological sustainability; and a need to correct current direction in plans that are not meeting needs to provide

benefits sustainably. Desired conditions (or goals) set forth the desired social, economic, and ecological goals of the USFS. The forest plans are anticipated to be completed in early 2016.

**Yosemite National Park Wilderness Plan (future)** — Yosemite National Park has begun the process of updating their existing Wilderness Management Plan. Sequoia and Kings Canyon National Parks and Yosemite National Park have much in common in regard to wilderness resources and use. During the development of this WSP/FEIS, several meetings were held between wilderness, planning, and resource staffs of these NPS units. The intent was to identify common issues and seek to devise common approaches to ensure as much consistency as possible in wilderness planning and management. Sequoia, Kings Canyon, and Yosemite National Parks are moving forward in a coordinated manner and will seek consistent management approaches. Yosemite National Park will likely be initiating wilderness planning in 2015.

## PURPOSE AND SIGNIFICANCE OF THE PARKS

An essential part of the planning process is understanding the purpose, significance, and mission of the parks for which this WSP/FEIS is being prepared. Along with the NPS Organic Act, the enabling legislation for Sequoia and Kings Canyon National Parks provides the legal basis of the parks. The parks' GMP outlines the purpose, significance, and park-specific mission and establishes overall management direction.

### ENABLING LEGISLATION

Enabling legislation is the statute that establishes a national park. Enabling legislation often describes the parks' purposes — a description of the special attributes that caused the area to be set aside for protection and enjoyment.

Sequoia National Park was established as the nation's second national park on September 25, 1890 (16 USC 41, 26 Stat. L., 478). The primary purpose for establishing the park is described in the act's preamble:

> Whereas, the rapid destruction of timber and ornamental trees in various parts of the United States, some of which trees are the wonders of the world on account of their size and limited number growing, makes it a matter of importance that at least some of said forests should be preserved.

The legislation also stipulated that Sequoia National Park is to be a place "dedicated and set apart as a public park, or pleasuring ground, for the benefit and enjoyment of the people," and it is to be managed "for the

**Young and mature Sequoias**

preservation from injury of all timber, mineral deposits, natural curiosities or wonders . . . [and for] their retention in their natural condition."

One week later, on October 1, 1890, legislation was enacted that nearly tripled the size of Sequoia National Park and established General Grant National Park (26 Stat. L., 650). This legislation extended the same protection to these new areas.

An act of July 3, 1926 (16 USC 688, 44 Stat. L., 818) again enlarged Sequoia National Park and instructed the secretary of the interior to establish regulations aimed at "the freest use of said park for recreational purposes by the public and for the preservation from injury or spoliation of all timber, natural curiosities, or wonders within said park and their retention in their natural condition . . . and for the preservation of said park in a state of nature so far as is consistent with the purposes of this Act."

Kings Canyon National Park was established by an act on March 4, 1940, absorbing General Grant National Park lands (16 USC 80, 54 Stat. L., 41). One purpose of the park included in the enabling legislation was "to insure the permanent preservation of the wilderness character of the Kings Canyon National Park." An act of August 6, 1965 (79 Stat L., 446, PL 89–111), added the Kings Canyon proper (the canyon of the South Fork of the Kings River, also known as the Cedar Grove area) and Tehipite Valley to Kings Canyon National Park and instructed that these lands be managed "subject to all the laws and regulations applicable to such park."

The National Parks and Recreation Act of November 10, 1978 (PL 95-625), added USFS lands in the Sequoia National Game Refuge to Sequoia National Park to "assure the preservation . . . of the outstanding natural and scenic features of the area commonly known as the Mineral King Valley . . . and enhance the ecological values and public enjoyment of the area."

In 2000, PL 106-574 authorized the addition of the Dillonwood sequoia grove to Sequoia National Park. This area was officially added on December 4, 2001, as a result of fundraising efforts by the Save the Redwoods League and a major contribution from the Wildlife Conservation Board, an agency affiliated with the California Department of Fish and Wildlife. The 1,518-acre tract has 1,180 acres of sequoia groves and is contiguous with the Garfield Grove on what was the southern boundary of Sequoia National Park. This addition protects a major sequoia grove and enhances opportunities for public enjoyment related to the parks' purposes.

## PARKS' PURPOSES

Sequoia and Kings Canyon National Parks are two separate national parks which share miles of boundary and are managed as one NPS unit. The purpose of Sequoia and Kings Canyon National Parks, as defined in the parks' GMP, is as follows:

- Protect the greater Sierran ecosystem – including the sequoia groves and high Sierra regions of the parks – and its natural evolution forever.
- Provide appropriate opportunities to present and future generations to experience and understand park resources and values.
- Protect and preserve significant cultural resources.
- Champion the values of national parks and wilderness.

### PARKS' SIGNIFICANCE

Park-significance statements capture the essence of a national park's importance to the natural and cultural heritage of the United States. Significance statements do not inventory the parks' resources; rather, they describe the parks' distinctiveness and help place the parks within regional, national, and international context. Defining the parks' significance helps managers make decisions that preserve the resources and values necessary to accomplish the purpose of the national park. Sequoia and Kings Canyon National Parks are significant because they contain the following resources (NPS 2007a):

- the largest giant sequoia trees and groves in the world, including the world's largest tree – the General Sherman Tree;
- an extraordinary continuum of ecosystems arrayed along the greatest vertical relief (1,370 to 14,494 feet in elevation) of any protected area in the lower 48 states;
- the highest, most rugged portion of the high Sierra, which is part of the largest contiguous alpine environment in the lower 48 states;
- magnificent, deep, glacially carved canyons, including Kings Canyon, Tehipite Valley, and Kern Canyon;
- the core of the largest area of contiguous designated wilderness in California, the second largest in the lower 48 states;
- the largest preserved southern Sierran foothills ecosystem;
- more than 250 known caverns, many inhabited by cave wildlife that is found nowhere else; and
- a wide spectrum of prehistoric and historic sites documenting human adaptations in their historic settings throughout the Sierran environments.

The purpose and significance statements recognize the parks' responsibility to manage legally designated wilderness within the boundaries, as well as recognize the significance of the parks' wilderness as a component of a larger, interagency wilderness area.

### PARKS' MISSION

The mission of the parks, based on the mission of the NPS as defined in the NPS Organic Act, is "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The parks' mission statement articulates the broad ideals and vision that NPS is striving to achieve within the parks:

> The mission of Sequoia and Kings Canyon National Parks is to protect forever the greater Sierran ecosystem – including the sequoia groves and high Sierra regions of the parks – and its natural evolution, and to provide appropriate opportunities to present and future generations to experience and understand park resources and values.

## SCOPE OF THE PLAN

This section includes a summary of the public comment process for scoping and for the preliminary draft alternatives. A summary of the comments from the public is also presented.

## PUBLIC SCOPING COMMENTS

To include the public in the planning process, the NPS used a variety of methods. First, information about the Wilderness Stewardship Plan and Draft Environmental Impact Statement (WSP/DEIS) was added to the parks' public website starting in late 2010 to inform the public of the upcoming plan. The parks used the NPS Planning, Environment, and Public Comment (PEPC) website to provide the public with background materials and information about the upcoming planning process. The first news release with information about the WSP/DEIS was issued on March 30, 2011. In addition, the NPS used social media such as Facebook and Twitter to reach out to the public and provide information on public meetings and the scoping process.

The public was notified of the upcoming scoping period and public meetings for the WSP/DEIS first in a letter dated March 30, 2011. Notifications were sent by U.S. Postal Service mail (341) or by email (382) to individuals, businesses, interest groups, agencies, and tribal groups. The Notice of Intent to prepare an EIS was published on April 26, 2011, in the *Federal Register* (76 FR 23335-23337). The NPS issued a public scoping newsletter on April 11, 2011, and issued subsequent news releases on April 20, 2011, to remind the public about upcoming public meetings, and on May 5, 2011 to remind the public about the public scoping opportunity (all scoping materials are included in appendix G). The newsletter included a description of the proposed WSP, the need for action, goals of the scoping process, and information on the planning process. The newsletter also provided details on upcoming public scoping meetings and about how to comment during the public scoping period. This newsletter was sent to individuals, businesses, agencies, and organizations, and a news release was issued inviting the public to comment.

Five public scoping meetings were held in California in 2011: Fresno (April 25), Oakland (April 26), Bishop (April 27), Los Angeles (April 28), and Visalia (April 29). Each meeting began with a presentation on the history of the parks, wilderness legislation, the significance of the parks, the purpose and need for the WSP/DEIS, potential issues and concerns, and the planning processes. After the presentation, NPS staff was on hand to discuss attendees' issues and concerns, and to answer questions.

A total of 108 individuals attended the public scoping meetings.

- Fresno – 11 attendees
- Oakland – 20 attendees
- Bishop – 18 attendees
- Los Angeles – 14 attendees
- Visalia – 45 attendees

In addition, park staff provided information and received input on the WSP/DEIS at agency meetings with the Sequoia National Forest and Sierra National Forest staff on April 26, 2011, with Inyo National Forest staff on April 28, 2011, and with Yosemite National Park staff on December 5, 2011. Information on the WSP/DEIS was provided to the attendees at the Sierra and Sequoia Tribal Forum Meetings on May 12, 2011, and June 8, 2011, respectively, and an update on the WSP/DEIS planning process was provided to the Sierra Nevada Native American Coalition on February 12, 2012.

The public was invited to submit comments on the scope of the plan and potential issues and concerns related to wilderness management through July 25, 2011. On July 14, 2011 the deadline for comments was extended to August 31, 2011. Information about scoping was published in the *Kaweah Commonwealth* (April 15, July 22, August 19, 2011) and *Inyo Register* (May 10, 2011), and included on

several public websites: National Parks Traveler website (April 4, 2011); High Sierra Topix (April 20, 2011); and Sierrawild.gov (July 25, 2011).

During the entire scoping process, 912 pieces of correspondence were received from 41 states and four countries (Australia, Germany, Slovakia, and the United States). All comments were read and analyzed; similar comments were grouped together and concern statements were developed to reflect the public sentiment for specific topics. Numerous commenters were concerned about issues that have been under discussion for years while others brought forward new wilderness management considerations and ideas. Full text of the public scoping comments and the Public Scoping Comment Summary Report are both available on the NPS PEPC website at: www.parkplanning.nps/sekiwild.

Comments received from the public covered many topics and issues. The following is a summary of the most common comments received.

The topics that received the majority of comments were stock use, commercial services, education of wilderness visitors, the protection of park resources, and appropriate management of visitor use of wilderness. The public comments were utilized by the NPS to help identify key topics to include in the preliminary draft alternatives.

- Commenters were divided on stock use. Many thought that stock use is appropriate in wilderness while others want it further restricted. There was concern that the meadows are being impacted by stock; others thought that there is no negative effect of grazing by horses and other stock on the meadows.
- Commercial services provision was a topic that the public commented on frequently. Views on commercial services focused on whether these services should or should not be allowed in wilderness.
- Many commenters recommended expanding the education program to improve wilderness ethics.
- Other topics related to visitor use, such as permits/quotas, trail and bridge maintenance, campfires, food storage, human-waste management, party (group size), and camping / campsites were brought forward.

## PRELIMINARY DRAFT ALTERNATIVE CONCEPTS

Because of the complexity of the alternatives, the NPS determined it appropriate to conduct an additional public review period to allow people the opportunity to provide feedback on the preliminary draft alternatives. On July 16, 2012, the parks provided a news release to 161 area media outlets announcing the upcoming public review of preliminary draft alternatives. A postcard announcing the impending public comment period and public meetings was sent (403) or emailed (921) to individuals, businesses, interest groups, and agencies, and provided to 64 area tribes and tribal groups. On October 25, 2012, the parks released the preliminary draft alternatives for the WSP/DEIS for public review. The review period ended November 19, 2012. During the 2012 comment period, NPS held five public meetings in California: Bishop (October 25), Los Angeles (October 26), Oakland (October 29), Visalia (October 30), and Three Rivers (November 5). These meetings presented information on the purpose and need for the WSP/DEIS, background on the parks' wilderness and planning process, wilderness legislation, concepts and elements of the alternatives, topics common to all alternatives, and the planning timeline in a formal presentation format. After the presentation, NPS staff was available to discuss attendees' questions and concerns. A total of 93 individuals attended the public scoping meetings:

- Bishop – 15 attendees

- Los Angeles – 4 attendees
- Oakland – 18 attendees
- Visalia – 36 attendees
- Three Rivers – approximately 20 attendees (a specific count of attendees is not available because the public meeting was incorporated into the monthly Three Rivers Town Hall meeting and no sign-in sheet was used)

The public were able to submit their comments on the plan using any of the following methods:

- electronically through the NPS PEPC website;
- in person at the public meetings; and
- by mailing comments to the NPS.

Information on the comment period and public meetings was published in the *Kaweah Commonwealth* on July 20 and November 16, 2012, and also included on several websites: National Park Traveler (July 27, 2012); *Clovis Independent* (July 19, 2012); Mineral King District Association website (July 16, 2012); Yosemite News website (July 19, 2012); and the George Wright Society website (July 27, 2012).

All comments received through November 26, 2012, were incorporated in the public alternative scoping process. A total of 201 pieces of correspondence providing feedback on the preliminary draft alternatives were received from 16 states and 2 countries (Canada and the United States). Of these letters, approximately 77% were submitted by individuals living in California. All comments were read and analyzed. Similar to the Public Scoping Comment Summary Report, public comments on the preliminary draft alternatives were grouped by similar topics, and concern statements were developed to capture the essence of the comment. The topics that received the majority of comments were stock use, grazing, commercial services, and zoning. Full text of the public comments and the Preliminary Draft Alternative Public Scoping Summary Report are available on the NPS PEPC website at: www.parkplanning.nps/sekiwild. The following is a summary of the most common comments received.

Comments received from the public on the preliminary draft alternatives covered many topics and issues. Many of the same issues that were expressed by the public during the scoping process were also brought forward during alternatives scoping:

- The appropriateness of stock use was a topic that the public commented on frequently. There were also differing views on whether to allow stock to graze in the parks.
- As in public scoping, views on commercial services varied as to whether these services should or should not be allowed in the parks.
- There were specific comments related to reopening the pack station at Mineral King and closing or maintaining the Bearpaw Meadow High Sierra Camp.
- Many commenters opposed the zoning strategy outlined in the preliminary draft alternatives, commenting that it was too complicated. Some felt that wilderness should not be zoned since the entirety of wilderness should be managed with the same goals. Commenters recommended either simplifying the zoning by having two zones: on-trail and off-trail zones, or eliminating zones. Others commented that the zoning regulations should be adopted, as these regulations would guide appropriate research and monitoring for different areas.

- Other elements included in the alternatives such as permits/quotas, trails/signs, campfires, food storage, human-waste management, party (group size), camping/campsites, and night limits generated many comments from the public. Many commenters felt that current conditions are adequate to support wilderness use and management, while others suggested changes.
- General comments included that the alternatives should be based not on limiting numbers of visitors but on improving the nature of the wilderness experience. It was proposed that the alternatives be restructured to achieve acceptable use without limiting visitor use. An alternative with only minimal infrastructure support was also suggested.
- Other suggestions included providing more visitor services and accepting the resulting impacts on wilderness areas.

Many of the comments submitted during the public review of the preliminary draft alternatives were used to update the alternatives and to further refine the framework for the WSP/DEIS. However, not all comments will be addressed in this plan. A summary of the comments received but not considered, and the justification for not including them in the WSP/FEIS, are described in the section "Elements or Topics Outside the Scope of the Plan" in this chapter and "Alternative Elements Considered but Dismissed from Detailed Analysis" in chapter 2.

## PUBLIC REVIEW OF THE WSP/DEIS

The WSP/DEIS was available to the public, federal, state, and local agencies, tribes, and organizations for a 60-day public review period from June 27 to August 25, 2014. The NPS distributed the WSP/DEIS beginning June 26, 2014, and a Notice of Availability (NOA) was published in the Federal Register on June 27, 2014. The NPS posted electronic copies of the WSP/DEIS to the NPS Planning, Environment, and Public Comment (PEPC) website at http://parkplanning.nps.gov/sekiwild on June 26, 2014. Printed or CD copies of the WSP/DEIS were provided to 236 interested parties on the parks' mailing list and to those who requested them. A printed copy was provided to 18 area public libraries in Tulare, Inyo, Fresno, and Kern counties. In addition, a NOA of the WSP/DEIS was sent by email or regular U.S. mail to 1,870 people on the parks' mailing list, and to 53 commercial use authorization holders. A news release was distributed to 151 media outlets, and was placed on the parks' website.

Park staff presented elements of the WSP/DEIS at seven public meetings, including three informational meetings (in Oakland, Bishop, and Visalia), three meetings with focused discussions on the commercial service portion of the WSP/DEIS (two in Bishop and one in Visalia) and a webinar on the management preferred alternative. Total attendance at the public meetings was 79; 25 people viewed the webinar. Park staff also conducted meetings with Inyo and Sequoia National Forest staff, and presented information at area tribal forum meetings. The public meeting schedule was as follows:

- July 8, 2014: Inyo National Forest headquarters, Bishop, CA
- July 9, 2014: Inyo National Forest headquarters, Bishop, CA
- July 15, 2014: Comfort Inn, Visalia, CA
- July 23, 2014: Richard Trudeau Training Center, Oakland, CA
- July 24, 2014: Eastern Sierra Tri-county fairgrounds, Bishop, CA
- July 28, 2014: Visalia Marriott Hotel, Visalia, CA
- August 14, 2014: Webinar on Management Preferred Alternative

The NPS received public comment letters through the PEPC system, by fax, U.S. mail, and hand delivery. The full text of public comment letters received can be viewed on the project website at: http://parkplanning.nps.gov/sekiwild. Personal information included with the comments (e.g., names and contact information) is redacted in the correspondence posted online to protect individuals' privacy. Information is included if the comment was submitted by agencies, tribes, businesses, and organizations.

During the 60-day public review period, the parks received 255 public comment letters: 212 from individuals; 4 from federal, state, county, or local governments; 1 from a non-governmental organization; 23 from recreational or conservation-related interest groups; and 14 from businesses. The analysis of these letters identified 1,040 discrete comments, from which 240 concern statements were generated. The results of the public comment analysis process and the NPS responses to substantive public comments are provided in "Appendix Q: Public Comment Analysis Report."

## PLAN REVISIONS IN RESPONSE TO PUBLIC REVIEW

The key revisions in this WSP/FEIS made in response to comments received during the public review of the draft plan and EIS are summarized below:

**Visitor Capacity Framework —** The most recent available data has been added to the visitor capacity framework specifically as it relates to trail encounter sampling (chapter 2 and appendix A).

**Trails —** The purpose and outcome of establishing a trails management and classification system has been clarified (chapter 2 and appendix K). The preferred alternative has been slightly modified to include the future construction of Class 1 and 2 trails. Under the preferred alternative, the Lower Big Arroyo trail has been designated as an abandoned trail; off-trail stock travel would continue to be allowed in Big Arroyo. The off-trail area from Glacier Pass to Spring Lake has been added to the list of areas to monitor for informal trail impacts. The preferred alternative has been modified to allow stock to travel up Miter Basin to a tie-up area at 11,300 feet in elevation below Sky Blue Lake.

**Stock Use and Grazing —** The preferred alternative has been updated to allow grazing only by private stock users in the Lower Soldier Lake Meadow. The specific area to be closed to grazing in the preferred alternative on the Bighorn Plateau has been clarified, and additional meadows have been opened to grazing by burros and llamas (Woods Lake Basin Meadow and the Lake South America Loop/ Kern Headwaters). The site-specific night limit at Ouzel Meadow would be removed.

**Administrative Structures in Wilderness —** The preferred alternative has been updated to allow the continued use of the Redwood Canyon Cabin for the administration of wilderness, primarily by researchers, but with a smaller footprint and fewer associated installations.

**Frontcountry Facilities to Support Wilderness —** The preferred alternative has been updated to provide for short-term use of the Wolverton corral by private parties and commercial service providers. There would be no permanent occupation of the facility by a commercial pack station for wilderness use.

**Affected Environment and Environmental Analysis —** Information has been added to the affected environment (chapter 3) and the environmental analysis (chapter 4) related to climate change. The analysis in chapter 4 has been updated for soils, water resources, and vegetation.

**Extent Necessary Determination —** Commercial service days for 2013 have been added to the extent necessary determination and used to update the preferred alternative (chapter 2 and appendix B).

**Climbing Management Strategy —** The Climbing Management Strategy (appendix J) has been refined to clarify the definition of fixed anchors.

**Research and Science —** The National Parks Omnibus Management Act of 1998 has been added to the list of applicable laws and legislation (chapter 1), and considered when updating the preferred alternative (chapter 2).

# ISSUES AND IMPACT TOPICS

This section includes a summary of the planning elements that are addressed in this plan, impact topics selected for detailed analysis, impact topics that were considered for this plan but were dismissed, and planning issues or topics that are outside the scope of this plan.

## PLANNING ELEMENTS TO BE ADDRESSED

Specific planning elements or topics to be addressed in the plan were developed for discussion and to set the framework for the alternatives. Each of these topics will be addressed under each alternative and a comparison of the environmental consequences of each alternative will be completed. These planning topics were identified based on internal and external scoping; federal laws, regulations, and executive orders; NPS *Management Policies 2006*; site visits; and public comments. A brief rationale for the selection of each topic is given below.

## MANAGEMENT ACTIONS APPLICABLE TO ALL ALTERNATIVES

**Wilderness Education** — Education is a critical component of wilderness stewardship. Programs that help visitors and staff to understand wilderness values and ethics are extremely important across all alternatives. Information explaining proper wilderness behavior and how to access less-visited areas of wilderness could help reduce the impacts of visitors on the environment and one another's experiences, as well as disperse use (Cole et al. 1987). Understanding the qualities and benefits of wilderness also leads to improved stewardship. A wilderness information and education strategy has been developed as part of this plan (appendix H).

**Aviation (Military, Commercial, and Private)** — Managing military and private aviation above the parks' wilderness is outside the scope of the WSP; however, the plan will determine the future of commercial air tours over wilderness. Through this planning effort, Sequoia and Kings Canyon National Parks would be permanently removed from the Federal Aviation Administration (FAA) list of NPS units where air tours are allowed. The parks will continue to work cooperatively with regional and national military leadership to ensure that military aviation operations are no more than minimally disruptive to the experience of wilderness visitors. Private aircraft use would continue to be managed by the FAA, and the NPS will continue to work cooperatively with the FAA to resolve problems.

**Administrative Communications in Wilderness** — Effective radio-communication systems are necessary to support resource protection actions, emergency services, the safety of wilderness staff, and transmittal of information on wilderness conditions to the frontcountry to inform wilderness visitors. Radio repeaters in wilderness exist in strategic and remote locations and require maintenance. Helicopter use may be authorized to maintain radio repeaters if it is determined by the superintendent to be the minimum requirement needed to achieve the purposes of the area as wilderness, including the preservation of wilderness character. As future technologies are developed, the existing structures would be considered for replacement, with replacement outside of wilderness preferred. If structures are able to be removed, the installation sites would be restored to natural conditions.

**Administrative Activities (e.g., Ranger Patrols and Operations, Maintenance Activities, Resource Management Activities, Park Aviation, etc.) and Minimum Requirement Standards —** Administrative presence may impact opportunities for solitude and unconfined recreation. Rangers, trail crews, and resource management crews are stationed in the parks' wilderness to educate and assist visitors, enforce regulations and restrictions, carry out projects, and perform maintenance activities to protect and preserve wilderness character. Many of these actions, such as those requiring the use of helicopters, are approved only after a MRA determines that the actions are appropriate in wilderness (appendix I).

**Tree Hazard Management —** The removal of hazard trees in wilderness is not a normal or desirable activity, but may be allowed under certain circumstances after a MRA is undertaken to determine that the actions are appropriate and necessary to administer the area as wilderness.

**Research —** The parks are recognized for advancing scientific research and integrating knowledge gained from scientific inquiry into the management of wilderness resources. Researchers from outside entities submit approximately 60 to 80 requests for permits each year to study aspects of the wilderness environment. For some park visitors, interaction with agency personnel and researchers may reduce the unconfined feeling or opportunities for solitude (Fauth and Tarpinian 2011; NPS 2011a). Other research actions may result in a temporary trammeling of wilderness but may improve the natural quality of wilderness over time. Research that has the potential to affect wilderness character, or that proposes a prohibited action, is evaluated separately through a MRA (appendix I).

**Winter Use —** A wide range of activities can be experienced in the wilderness during the winter, generally from November through mid-May. Due to the high-elevation, demanding terrain, and potentially extreme weather of the parks' wilderness, winter activities can be challenging and hazardous for the inexperienced user. However, users of the winter environment will find the quiet, solitude, and beauty of the parks' wilderness extraordinary and inspiring. The winter use of the wilderness will be managed consistently across the alternatives.

**Climbing Management —** Climbing management in national park wilderness is directly guided by relevant NPS management policies, director's orders, and reference manuals. The U.S. Code of Federal Regulations and the parks' Superintendent's Compendium also provide indirect and direct management control of climbing and related activities. Director's Order #41: Wilderness Stewardship provides specific guidance on the management of climbing in wilderness. A climbing management strategy has been developed as part of this WSP and is included as appendix J.

## KEY ELEMENTS CONSIDERED IN THE ALTERNATIVES

The following elements summarized below represent key aspects of managing wilderness. In chapter 2, each one is discussed under each alternative. The variations in these elements are what make the alternatives different.

**Visitor Use —** Sequoia and Kings Canyon National Parks rely on permits and quotas as primary controls to effectively manage wilderness visitor use. In certain areas of wilderness, use has increased (particularly the Pacific Crest National Scenic Trail [PCT], John Muir Trail [JMT], High Sierra Trail [HST], Rae Lakes Loop, Bishop Pass, and Mount Whitney) and impacts on wilderness character and other resources may be occurring. The alternatives consider different options for day use and overnight permits, as well as modifications to the existing trailhead quota system, to protect wilderness character and meet the specific goals of a given alternative.

**Trails** — A network of trails and appropriate signs would continue to be maintained in the parks' wilderness. A trail management and classification system, adapted from elements of the USFS Trail Management Handbook, has been developed as a component of the WSP (appendix K). The phrase *trail class* describes the level of development and expected recreational experience along a given segment of trail, and *designed use* describes the modes of travel for which the trail is designed and maintained, including trail suitability for various use types, including stock use. The same trail classes would be adopted across all action alternatives, but the trails included in the different classes may vary based on the overall objective of a given alternative.

**Campfires** — Campfires are currently restricted by elevation to support the protection of park resources. Campfires can result in significant loss of woody debris and damage to trees, impacts on ecosystem components, and the permanent loss of paleo resources. However, restricting campfires can also affect the primitive and unconfined recreation quality of wilderness. The alternatives consider a variety of methods to balance both of these qualities.

**Food Storage** — Proper food storage prevents wildlife from obtaining human food, which protects both wildlife and visitors. Visitor use is concentrated around food-storage boxes, and large parties tend to camp near them, which can affect natural qualities and opportunities for solitude. Facilities such as food-storage boxes also impact the undeveloped quality of wilderness. A range of methods are considered within the alternatives to ensure proper food storage while limiting developments in wilderness.

**Human Waste Management** — The parks have constructed privies and restrooms, recommended the use of carry-out waste bags, and promoted visitor education as methods to manage human waste. The alternatives consider ways to reduce development by removing unnecessary toilet facilities; protecting natural and cultural resources; protecting human health; reducing litter created by improperly disposed of toilet paper; and increasing visitor knowledge of appropriate sanitation and toilet-paper disposal in wilderness.

**Party Size (Group Size)** — Size of parties traveling and/or camping together is managed to preserve the opportunities for solitude of other visitors and to reduce adverse impacts on the natural quality of wilderness. The number of stock and people per group is managed to protect resources, preserve opportunities for solitude, and to control impacts on wilderness character created by limiting the number of stock and people traveling and camping together. Different party sizes are considered across all alternatives, based on the overall objective of a given alternative.

**Camping/Campsites and Night Limits** — The designation of campsites and the establishment of limits on the number of nights a party may stay in one place are effective methods for managing visitor impacts. Establishing *designated campsites* helps to confine use to a certain area, and night limits can reduce the effects of visitors camping in a single area for an extended period of time. However, designated campsites can detract from opportunities for primitive and unconfined recreation, and maintenance of designated campsites/camp areas can necessitate removing native vegetation (e.g., hazardous trees), which results in an adverse effect on the natural quality of wilderness. The alternatives examine a variety of ways to manage camping and campsite impacts.

**Stock Use** —Recreational stock use is a historically and culturally significant traditional use that is an appropriate means for fulfilling the recreational purpose of wilderness. The GMP stated that administrative and recreational stock use would continue to be allowed, with controls that would keep the effects of such use within acceptable limits (NPS 2007a). Based on the court order in HSHA v. U.S. Dept. of the Interior, the GMP cannot be used to provide programmatic guidance on commercial stock use. As a result, this plan evaluates commercial stock use as part of the specialized finding for commercial services (appendix B).

Stock use both by visitors and park staff can have distinctive effects on the natural qualities of wilderness, including increased risk of introduction of nonnative plant species, impacts on sensitive plants and animals, and impacts on water quality. Overlapping uses of hikers and stock can create safety concerns. The alternatives consider ways to mitigate the impacts from stock use on resources, visitor safety, and visitor experience.

Grazing by stock has been allowed in the parks' wilderness since well before they were established. The impacts of grazing are analyzed and alternatives for grazing and grazing management are considered. The alternatives also evaluate the necessity of all stock-related structures and facilities (e.g., drift fences and hitchrails) and a range of options for their management is provided. Appendix D includes an updated Stock Use and Meadow Monitoring and Management Strategy.

**Administrative Structures and Facilities** — Administrative facilities such as ranger stations, administrative pastures, crew camps, and research facilities are important for the administration of wilderness. However, these facilities can adversely affect the undeveloped quality of wilderness. Ranger stations can reduce opportunities for solitude and primitive and unconfined recreation by attracting larger numbers of visitors. Administrative pastures, crew camps, and research facilities may also affect wilderness character. Different options for the retention or removal of these structures and facilities are considered across the alternatives, depending on the overall objective of the alternative.

**Frontcountry Facilities that Support Wilderness Use** — Development or enhancement of facilities in the frontcountry that support wilderness use would affect opportunities for recreation and education, and would possibly reduce development in wilderness. The alternatives offer a range of options for frontcountry facilities to support visitor use of wilderness, but any modifications to frontcountry facilities would require separate implementation planning and compliance.

**Commercial Services** — The Wilderness Act prohibits commercial enterprise but allows commercial services to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the [wilderness] areas. This WSP/FEIS incorporates the specialized finding to determine which commercial services are appropriate in wilderness and to what extent they would be authorized (appendix B). The alternatives present a range of options for the types and levels of commercial services that would be authorized.

## DERIVATION OF ISSUES AND IMPACT TOPICS

NEPA requires an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 *Code of Federal Regulations* [CFR] 1501.7). Issues are problems, opportunities, and concerns regarding the current and potential future management strategies for managing wilderness as well as impacts of management actions that are included in this WSP/FEIS.

Specific impact topics were developed for discussion and to allow comparison of the environmental consequences of each alternative. Impact topics and issues were identified based on internal and external scoping; federal laws, regulations, and executive orders; NPS *Management Policies 2006*; site visits; NPS knowledge of limited or easily impacted resources; and the potential for measurable effects on these resources.

The resources that could be affected and the impacts that could occur are described in detail in "Chapter 3: Affected Environment" and "Chapter 4: Environmental Consequences."

A brief rationale for the selection of each impact topic is given below, followed by issue statements associated with that resource.

## IMPACT TOPICS SELECTED FOR DETAILED ANALYSIS

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives presented in this plan. The NPS defines *measurable effects* as those with moderate or greater impacts and *no measurable effects* as those impacts that are minor or less. The reason the NPS uses *no measurable effects on* is to determine whether impact topics are dismissed from further evaluation so the WSP/FEIS can concentrate on issues that are truly significant to the action in question, rather than amassing unneeded detail, in accordance with Council on Environmental Quality (CEQ) regulations at 1500.1(b).

It was determined that there would be a measurable effect on the following resources (table 1):

**Table 1: Impact Topics Selected for Detailed Analysis**

| Impact Topic or Issue | Reasons for Retaining Impact Topic | Relevant Laws, Regulations, and Policies |
|---|---|---|
| Wilderness Character<br>Untrammeled<br>Undeveloped<br>Natural<br>Solitude or a primitive and unconfined type of recreation | Preserving wilderness character is the fundamental purpose of wilderness, per the Wilderness Act. For that reason, the evaluation of how each alternative affects wilderness character is an integral part of this WSP/FEIS and this topic will be included for further analysis. | NPS Organic Act of 1916<br>Wilderness Act of 1964<br>California Wilderness Act of 1984<br>Omnibus Public Land Management Act of 2009<br>NPS *Management Policies 2006*<br>NPS Director's Order 41: *Wilderness Stewardship*<br>Sequoia and Kings Canyon Management Directive 49: *Minimum Requirement Analysis and Determination* |
| Soils | Several elements of the alternatives have the potential to affect soils, including constructing, maintaining, or restoring trails, placing or removing food-storage boxes, establishing designated camps, and general visitor use. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>NPS *Management Policies 2006* |
| Water Quality | Visitor use and administrative actions near lakes, streams, ponds, and rivers has the potential to impact water quality through increased turbidity from run off, and from human and stock waste. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>Clean Water Act of 1972 |

**Table1: Impact Topics Selected for Detailed Analysis (continued)**

| Impact Topic or Issue | Reasons for Retaining Impact Topic | Relevant Laws, Regulations, and Policies |
|---|---|---|
| Vegetation<br>Wetlands<br>Meadows<br>Long-lived high-elevation trees<br>Alpine vegetation<br>Special-status species<br>Invasive species | Vegetation can be affected by activities such as trampling by visitors and stock; grazing in meadows; collecting wood for campfires; constructing, maintaining, and restoring trails; and transporting and establishing nonnative vegetation. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>Executive Order 11990, "Protection of Wetlands"<br>Executive Order 13112, "Invasive Species"<br>NPS *Management Policies 2006*<br>NPS Director's Order 77-1: *Wetland Protection* |
| Wildlife<br>Black bears<br>Birds<br>Invertebrates | Wildlife, particularly bears, can be affected by visitor use and administrative activities related to food storage. Stock use can lead to the introduction of nonnative cowbirds. Invertebrates can be affected by grazing and visitor use. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>NPS *Management Policies 2006*<br>NPS Director's Order 77-1: *Wetland Protection* |
| Special-status Species<br>Sierra Nevada bighorn sheep<br>Yosemite toad<br>Mountain yellow-legged frog<br>Sierra Nevada yellow-legged frog | Some special-status species can be affected by visitor use and administrative activities. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>Endangered Species Act of 1973<br>NPS *Management Policies 2006*<br>NPS Director's Order 77: Natural Resource Protection<br>California Endangered Species Act |
| Cultural Resources | The alternatives considered in the WSP/FEIS have the potential to affect historic structures and archeological sites. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>National Historic Preservation Act of 1966<br>Native American Graves Protection and Repatriation Act<br>NPS *Management Policies 2006*<br>NPS Director's Order 41: *Wilderness Stewardship* |
| Socioeconomics | Alternatives related to visitor use and access and commercial services have the potential to affect the region's socioeconomic resources. Therefore, this topic will be further evaluated. | NPS *Management Policies 2006* |
| Visitor Use and Experience (other than those addressed under Wilderness Character) | There are a number of elements within the alternatives that could affect visitor use and experiences (other than those addressed in the "Wilderness Character and Qualities" section), including actions that affect aesthetic and social values of wilderness. Therefore, this topic will be further evaluated. | NPS Organic Act of 1916<br>The Redwood Act, 1978<br>Concessions Management Improvement Act of 1998<br>NPS *Management Policies 2006*<br>NPS Director's Order 77: Natural Resource Protection<br>NPS Director's Order 41: *Wilderness Stewardship* |

**Table1: Impact Topics Selected for Detailed Analysis (continued)**

| Impact Topic or Issue | Reasons for Retaining Impact Topic | Relevant Laws, Regulations, and Policies |
|---|---|---|
| Park Operations | Park operations would be affected by changes to visitor use and wilderness infrastructure and facilities. Therefore, this topic will be further evaluated. | NPS *Management Policies 2006* |

## OTHER ISSUES CONSIDERED

**Climate Change** — Accelerated climatic change and other global changes are likely to be the greatest challenges that wilderness stewards have ever faced (Stephenson and Millar 2012). Evidence of climatic change and its effects on resources are seen in the region as well as within the parks.

Temperatures have warmed significantly in the Southern Sierra Nevada this century, and are expected to continue to rise. Regardless of uncertain projected future precipitation, warming temperatures will increase the fraction of rain relative to snow, speed the onset of snowmelt, push the snowline uphill, and amplify the amount of water evaporated to the atmosphere. Stream flows and soil moisture may increase during winter, but water availability in summer will decline. Recent increases in wildfire activity are expected to persist and accelerate in most future scenarios. More severe storms and flooding may interact with fire activity to increase soil erosion.

Potential consequences of these biophysical changes on wilderness resources include drying of wetland and aquatic habitat; rising incidence of drought stress and insect and disease outbreaks in woodlands and forests; shifts in seasonality and ranges of plants and animals; new or intensified nonnative species invasions; changes in wildlife behaviors; and die-off of species that cannot adapt to these changes. Cultural resources are vulnerable to increased fire activity and erosion.

Climate change may amplify health and safety risks to park visitors and staff, including fires, floods, extreme hot temperatures, ozone, and expansion of toxic plants or poisonous, aggressive, or disease-carrying animals. Visitation to the parks could change, including the magnitude, distribution, seasonality, and type of wilderness recreation.

Key climate change vulnerabilities include:

- Warming temperatures
- Reduced water availability especially in summer
- More severe storms and flooding
- More frequent and severe wildfires
- Increased erosion
- Increased insect and disease outbreaks
- Shifts in the distribution of species

While accelerated climate change is a major concern for the future of the parks' wilderness, a full analysis of climate change and its effect on the parks' resources is beyond the scope of this WSP. However, the

WSP/FEIS does consider climate change in the alternatives and in the analysis. First, the WSP is designed to be responsive to shifting environmental conditions. This allows managers to protect wilderness resources by responding to natural variability as well as to directional change in environmental conditions. For example, monitoring provides information on meadow condition that can then be used to revise stock grazing regulations for a given year, if needed. Second, there are several impact topics where climate change warrants consideration in the analysis (e.g., soils, vegetation, wildlife, and special-status species). Therefore, background information on climate change is included in chapter 3 for specific impact topics. Climate change is also considered in the environmental consequences (chapter 4). A full analysis of climate change and strategies for management response will be addressed in the Sequoia and Kings Canyon Resource Stewardship Strategy (in process).

## IMPACT TOPICS OR ISSUES DISMISSED FROM FURTHER ANALYSIS

**Air Quality and Greenhouse Gas Emissions** — The 1977 amendment to the Clean Air Act of 1963 (42 USC 7401 et seq., PL 88-206) requires federal land managers to protect the parks' air quality. Sequoia and Kings Canyon National Parks were designated Class I under the 1970 Clean Air Act, as amended. A Class I area is subject to the most stringent regulations of any designation. Further, the 1970 Clean Air Act provides the federal land manager (the parks' superintendent) with an affirmative responsibility to protect the parks' air-quality-related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health) from adverse air-pollution impacts. Section 118 of the Clean Air Act requires the parks to meet all federal, state, and local air-pollution standards.

Most of the air pollutants within the parks originate outside park boundaries. Air-quality conditions in the parks are a consequence of the parks' geographic location relative to significant sources of air pollution. The parks are downwind of numerous major urban areas and associated industrial activity; two heavily traveled transportation corridors (I-5 and CA 99); and the extensive San Joaquin Valley agricultural landscape, one of the most productive in the U.S. The parks and their wilderness areas are within the San Joaquin Valley Air Pollution Control District. Nonpoint or area sources are the major contributor of air pollutants in the San Joaquin Valley Air Pollution Control District, including cars, trucks, farm equipment, and other agricultural activities. Wildland fires also contribute to air pollutants in the region.

Greenhouse gases contribute to climate change on a global scale. Naturally occurring greenhouse gases include carbon dioxide, methane, and nitrogen oxide. Human activities (e.g., fuel combustion and waste generation) lead to increased concentrations of these gases in the atmosphere.

While greenhouse gases have global impacts, the impacts of criteria air pollutants (those with established human-health thresholds) are often local and regional in nature. Deposition of air pollutants on the parks' landscapes has the potential to adversely alter terrestrial or aquatic ecosystems (Fenn et al. 2008; Sickman et al. 2001). Spatially, the air-quality condition (an assessment that takes into account the worst of all the air-quality threats—e.g., ozone, nitrogen) is assessed as being *poor* at lower elevations in the western region of the park, due to proximity to pollution sources. Air quality improves to *good* at higher elevations and towards the eastern side of the park. Wilderness encompasses the entire range of conditions (Panek et al. 2013).

Of pollution generated within the parks, data from a 2006 inventory of emissions from park operations shows that transportation contributes 66% of the parks' greenhouse gases and criteria air pollution. The largest portion of this is from visitor vehicle miles travelled. In an effort to reduce air-pollution sources within the park, the parks have formed a partnership with the U.S. Environmental Protection Agency through the Climate-Friendly Parks Program. The parks have developed an action plan to reduce both criteria air pollutants and greenhouse gases. Transportation strategies described in the plan include improving vehicle efficiency and reducing idling (NPS 2008a).

Air quality in localized areas would be temporarily affected due to certain elements of the WSP (i.e., the use of helicopters to transport materials, trail maintenance, campfires, and dust from visitor and stock use). Helicopter flight-path data from 2009, which includes fuel use, was used to calculate an example of ongoing impacts. Using the Climate Friendly Parks emission-calculation program, emissions, specifically of criteria air pollutants, were calculated. Jet fuel used by the helicopter in all of 2009 equaled 7,232 gallons. This equates to 0.30 ton of nitrogen oxides, 15.2 tons of carbon monoxide, and 0.30 ton of volatile organic compounds. These values of criteria pollutants are considered a negligible-to-minor impact on air quality and air-quality-related values. A proportionate increase in flights due to increased administrative activities would likely remain at a minor impact or less.

Project-specific activities would require site-specific planning and analysis. While these activities could result in slight degradation of air quality in localized areas, effects would not likely exceed National Ambient Air Quality Standards and would last only as long as project activities.

Overall, air quality in the parks is primarily affected by activities and sources outside park boundaries. Impacts on regional air quality would be negligible to minor for WSP/FEIS alternatives; therefore, air quality was dismissed as an impact topic.

**Caves** — The parks contain about 250 known caves; most are located in wilderness. They formed in Mesozoic marble originally deposited on the margins of marine islands (one exception being caves and karst in Paleozoic rocks on the east side of Kings Canyon National Park). The parks' caves are generally formed by sinking streams. During the spring months, these streams typically flood due to snowmelt and winter rains. Inside the caves, floods typically overwhelm existing passages and promote the development of mazes of parallel passages. Such mazes are very common in all larger caves in the parks. Cave temperatures in the parks vary from 31°F to 62°F, with lower-elevation caves being the warmest and some higher-elevations caves containing permanent ice. Many caves have brisk winds that develop due to temperature variation between the inside of the caves and the surface.

Diverse minerals found in caves include barite, tungsten, copper minerals, sulfates, and oxides. Calcite deposits found in the parks' caves include the common stalactites, stalagmites, and flowstone, but also unusual speleothems including filamental helictites and shields, which have not been documented outside of the parks.

Karst features represent an important and diverse resource in the parks. Karst is defined as an area of marble (more commonly limestone in areas outside the parks) affected by chemical solution erosion as well as mechanical erosion. Unique features associated with karst landscapes are karst springs, sinkholes, sinking streams, collapsed former caves, shallow pits, rillen and runnels in bedrock marble, travertine, and tufa. Arguably the most important aspect of these features is karst hydrology — subsurface streams, lakes, and aquifers — which can host aquatic cave-adapted animals and which can transport pollutants and contaminants much more quickly than typical ground water. Karst hydrology also includes numerous natural aquifers in the parks where water is retained within the karst system and released via springs to surface streams.

Cave and karst features are managed under the separate *Cave Management Plan* (NPS 1998b). The current *Cave Management Plan* was adopted in May 1997. A new plan is being drafted at this time and its direction is being informed by this WSP. Actions proposed under the WSP alternatives would have indirect and no, or negligible, impact on cave resources. Therefore, caves will not be analyzed in this WSP/FEIS.

**Hydrology** — Hydrology is the study of the movement and distribution of water. In the simplest sense, the movement and distribution of water is often depicted as a water cycle, a closed system whereby water

vapor in the atmosphere condenses and falls to the ground as precipitation. When precipitation reaches the ground, it can percolate deeply to recharge aquifers, it can be taken up by vegetation, or it can flow across the earth's surface, where it is concentrated in ever-larger streams and rivers as it flows downslope. At any time in the process, it can reenter the atmosphere as a vapor via evaporation or transpiration. In addition to measuring the frequency, duration, and magnitude of water as it moves through the water cycle, the quality of the water is an important consideration, as this has a direct impact on its suitability for different types of use.

The movement of water can be measured in terms of its frequency, duration, and magnitude. An example of this is rainfall. To place any rainfall event into its proper context, it is important to ask "How often does it rain?" (frequency), "How long has it been raining?" (duration), and "How hard is it raining?" (magnitude). The answers to these three questions give the amount of water that has fallen in any given area. Another important aspect to consider is whether precipitation falls as rain or snow, as this impacts the timing of runoff and recharge, and melting Sierran snowpack plays a particularly important role in supplying water during summer when precipitation is at a minimum.

No actions or alternatives included in this WSP will impact physical hydrology; therefore, physical hydrology is dismissed from further analysis.

**Dark Night Skies** — The NPS uses the term "natural lightscape" to describe resources and values that exist in the absence of human-caused light at night. Natural lightscapes are critical to nighttime scenery and to maintaining nocturnal habitat. Many wildlife species rely on natural patterns of light and dark for navigation, to cue behaviors, or hide from predators. Lightscapes can be cultural as well, and may be integral to the historical fabric of a place. Human-caused light may be obtrusive in the same way that noise can disrupt a contemplative or peaceful scene.

Wilderness – and the majority of lands in the parks – falls in the "Naturally Dark Zone," an area defined as having a natural lighting regimen and the absence of artificial light sources (Duriscoe et al. 2011). Visitors to this zone have the best opportunity for adaptation to darkness and experiencing natural lightscapes, such as a natural starry sky, and nocturnal habitat receives maximum protection.

Particulates from anthropogenic sources can reduce clarity of the night sky. Sources of these particulates usually originate from outside the parks boundaries. The WSP proposes no actions that would modify the dark night skies within the wilderness of the parks; therefore, this topic will not be further analyzed.

**Wildlife** — The diversity of habitats resulting from the range of elevation, climate, and topography at the parks support a diverse assemblage of wildlife. The parks contain more than 331 native vertebrate species, including 12 amphibians, 24 reptiles, 8 fish, 83 mammals, and approximately 204 bird species. Invertebrate species have not been inventoried at the parks, thus the number of species is not known, but it is likely that more than 97% of the animal species in the parks are invertebrates (Buchsbaum et al. 1987).

Although the parks represent only 1% of California's area, 26% of the diversity of vertebrate species within the state is found in the parks (Schwartz et al. 2013). Even though the wildlife found in the parks is relatively similar to wildlife found in areas surrounding them, the parks provide core protected habitat for many species.

The types of impacts associated with wildlife that relate to wilderness visitor use and administrative activities include disturbance or displacement, injury or mortality, habitat alteration, and/or behavior alteration. For most species, these disturbances in wilderness are generally not measurable and are localized; they may affect individuals, but do not affect the species or habitat overall. The alternatives in

the plan, however, may have an effect on black bear, native birds, and invertebrates; these will be further evaluated in "Chapter 4: Environmental Consequences." Special-status species will be considered separately below. The following information summarizes the remaining species that would not be affected by the alternatives, and therefore, will not be further analyzed in this WSP/FEIS.

*Mammals* — Mammalian species richness peaks at the middle elevations of the parks (4,921 to 8,202 feet) but appears relatively constant across the rest of the elevational gradient (1,312 to 14,445 feet), until a substantial decrease in the high country above 11,483 feet (Schwartz et al. 2013). The most common small mammals captured during a 2004 vertebrate survey were the brush mouse (*Peromuyscus boylii*), deer mouse (*Peromyscus maniculatus*), golden-mantled ground squirrel (*Spermophilus lateralis*), long-tailed vole (*Microtus longicaudus*), and lodgepole chipmunk (*Tamias speciosus*) (Werner 2004). Other small-mammal species considered common in the parks include the American pika (*Ochotona princeps*), mountain pocket gopher (*Thomomys monticola*), and California ground squirrel. While these species may be disturbed or displaced, or their behavior altered by the presence of visitors or administrative activities in wilderness, the effects would be temporary and localized and would not result in more than a negligible effect. Therefore, these species will not be further analyzed in "Chapter 4: Environmental Consequences."

The parks are home to 17 bat species. Most common are the Brazilian free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), and Yuma myotis (*Myotis yumanensis*) (NPS 2013b). The Townsend's big-eared bat (*Corynorhinus townsendii*) and western mastiff bat (*Eumops perotis*) are considered particularly rare in the parks (NPS 2013b). Three additional species, the pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), and western red bat (*Lasiurus blossevillii*) are not common (NPS 2013b). Human disturbance may compromise the availability of roosts for bats, particularly within the parks' caves if bats are disturbed during times of the year when they are particularly vulnerable (e.g., during the maternity season or hibernation). Additionally, hazard-tree removal as well as hiking and backpacking traffic along trails can negatively affect bats (Chung-MacCoubrey 2013). There would continue to be a slight effect on bats from disturbance or displacement associated with visitor use and administrative activities in wilderness; there would be no additional impact from the WSP alternatives. Since the level of effect is negligible and localized, effects on bats will not be further analyzed.

Larger mammal species found within the parks include coyote (*Canis latrans*), mule deer, black bear, gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), western spotted skunk (*Spilogale gracilis*), and American marten (*Martes americana*). These species all may be impacted slightly by visitor use and administrative actions; however, only the black bear could be affected in more than a minor way. Therefore, the black bear will be further analyzed in this WSP/FEIS, and other large mammal species will be dismissed from further analysis. The Sierra Nevada bighorn sheep, and the fisher (*Martes pennanti*), are discussed in the "Special-status Species" section of this chapter.

*Amphibians, Reptiles, and Fish* — Most amphibian, reptile, and fish species found within the parks would not be affected by any of the alternatives and will not be analyzed further in this plan. There are 12 species of amphibians and 24 species of reptiles found in the parks. Common amphibians include the Pacific chorus frog (*Pseudacris regilla*), ensatina (*Ensatina eschscholtzii*), and California newt (*Taricha torosa*), while species such as the gregarious slender salamander (*Batrachoseps gregarius*), western toad (*Bufo boreas*), and Kings River slender salamander (*Batrachoseps regius*) are uncommon or rarely seen (NPS 2013b). The Yosemite toad (*Anaxyrus canorus*), the two species of mountain yellow-legged frogs (*Rana muscosa* and *R. sierrae*), and the Mount Lyell salamander (*Hydromantes platycephalus*) are discussed in the "Special-status Species" section below.

Reptile species found in the parks include northern and southern alligator lizards (*Elgaria coerulea* and *Elegaria multicarinata*) and western fence lizard (*Sceloporus occidentalis*). Snake species include the rubber boa (*Charina bottae*), common kingsnake (*Lampropeltis getula*), striped racer (*Masticophis*

*lateralis*), the western terrestrial garter snake (*Thamnophis elegans*), and the western rattlesnake (*Crotalus oreganus*). One turtle species, the western pond turtle (*Clemmys marmorata*), is commonly found in the parks (NPS 2013b). One skink species confirmed in the parks is the Gilbert's skink (*Eumeces gilberti*). Additionally, the western skink (*Eumeces skiltonianus*) was observed just outside the parks in the 2003 vertebrate surveys (Werner 2004), indicating that it could potentially be found within the parks.

Many lakes and ponds in the parks' high-elevation ecosystems support only very simple food webs due to the unweathered granitic rock, sparse vegetation, and short summer growing season. Most lakes of the Sierra Nevada were historically fishless in part because of the high-elevation (Matthews and Knapp 1999; Rosenthal 2003). Stocking of fish dating back more than 150 years has changed aquatic systems in the Sierra, and now most lakes and streams within the parks contain nonnative fish plus a few native species (Knapp 1996). Native fish in the parks include Sacramento sucker (*Castostomus occidentalis*), California roach (*Hesperoleucus symmetricus*), Kern golden trout (*Oncorhynchus mykiss gilberti*), and Little Kern golden trout (*Oncorhynchus mykiss whitei*) (NPS 2013b). The Little Kern golden trout is listed as federally threatened under the ESA. The Kern golden trout (sometimes called the Kern rainbow trout) and the California golden trout (*Oncorhynchus mykiss aguabonita*) are listed as California species of special concern. These fish are discussed in the "Special-status Species" section. Although these species are listed or species of special concern, the Little Kern golden trout, Kern golden trout, and California golden trout are considered invasive in areas in the parks where they have been transported and have hybridized with nonnative trout species.

There would be slight effects on amphibians and reptiles from visitor use and administrative activities, but these would be localized, short-term, and would result in less than minor effects on individuals. Recreational fishing would continue to be available in the parks, thus there would be occasional mortality to fish, but the overall effect would be negligible. Therefore, amphibians, reptiles, and fish will not be further analyzed in this WSP/FEIS.

*Birds* — The Sierra Nevada is home to a rich assemblage of bird species. The diversity of habitats within the parks and the lack of extensive development provide an important refuge for many bird species, and birds are found from the foothill zone up to the top of Mount Whitney. Bird diversity is closely correlated with the major river canyons of the parks. Overall, the low-lying southwestern region has the highest diversity, and this peak diversity is associated with montane hardwoods, montane riparian habitats and water.

Some of the common bird species in the parks include the dark-eyed junco (*Junco hyemalis*), mountain chickadee (*Poecile gambeli*), yellow-rumped warbler (*Setophaga coronata*), Steller's jay (*Cyanocitta stelleri*), red-breasted nuthatch (*Sitta canadensis*), American robin (*Turdus migratorius*), California towhee (*Pipilo crissalis*), western tanager (*Piranga ludoviciana*), American kestrel (*Falco sparverius*), and Anna's hummingbird (*Calypte anna*) (Holmgren et al. 2012; NPS 2013b).

Stock grazing and trampling could alter habitat quality (either positively or negatively, depending on the species considered) and disturbance associated with recreational activities could cause behavioral responses and nest failure. Impacts associated with these disturbances would be less than minor across all alternatives. They are briefly described below but will not be further analyzed. Impacts associated with the brown-headed cowbird (*Molothrus ater*), a nonnative species that frequents stock operations, will be further analyzed in "Chapter 4: Environmental Consequences."

Stock grazing and trampling in meadows and riparian areas would adversely impact habitat used by some meadow-dependent bird species (e.g., belted kingfisher [*Megaceryle alcyon*], red-breasted sapsucker [*Sphyrapicus ruber*], Wilson's warbler [*Wilsonia pusilla*]) and enhance habitat used by other species that are benefitted by light to moderate levels of grazing (e.g., Brewer's blackbird [*Euphagus cyanocephalus*],

common poorwill [*Phalaenoptilus nuttallii*], pine siskin [*Carduelis pinus*] [Bock et al. 1993; Steel et al. 2012]). It is probable that more species would be adversely affected than beneficially affected. For the following reasons, it is reasonable to conclude that impacts from stock grazing and trampling to birds would be less than minor (see Steel et al. 2012 for discussions of stock impacts species by species).

- Research conducted within the parks demonstrates that there are minimal impacts of stock grazing to invertebrates, a primary food source for many bird species (see chapter 4).
- Most stock grazing occurs outside of the bird breeding season. In dry, normal, and wet years, 14%, 56%, and 92% of meadow zones respectively, are closed to grazing until July 15 or later (NPS 2008a). Between 1985 and 2012, 65% of overnight stock use nights occurred during August to December (Frenzel and Haultain 2012) after the bird breeding season (mid-May to mid-July).
- Adverse impacts on birds as a result of grazing and trampling are often associated with commercial livestock operations (i.e., cattle and sheep grazing), which involve much higher densities of animals that graze for longer periods of time each year, than what occurs with stock grazing in the parks. Steel et al. (2012) recognized this distinction in an assessment of Sierran birds, noting that "As compared to the greater Sierra Nevada where cattle grazing is widespread, adverse impacts from stock grazing are likely relatively small and localized in [the Sierra Nevada parks]."

Some birds may be disturbed by hikers, backpackers, rock climbers, or even by "intrusive birding" at their nest sites (Steel et al. 2012). Such disturbances would usually be of short duration, localized, and have a negligible effect. It is possible that disturbance could lead to occasional nest failures, but there would be no population level effects. Due to the above stated reasons, birds will not be further analyzed in this WSP/FEIS.

*Nonnative Wildlife Species* — Through a variety of means, nonnative fish, birds, amphibians, and mammals have become established in the parks. Nonnative species are those that do not naturally live in a given ecosystem; their presence is a result of direct, indirect, or accidental human activities (NPS 2013c). Austin et al. (2013) list 25 nonnative vertebrates (1 amphibian, 11 birds, 9 fish, and 4 mammals) that are either confirmed or suspected of maintaining a presence in the parks, either through a breeding population or through continued replenishment from outside park boundaries. Because four subspecies of the same species were treated separately by Austin et al. (2013) — (rainbow trout [Oncorhynchus mykiss mykiss], California golden trout, Little Kern golden trout, and Kern River golden trout) — this list can be condensed to 22 distinct species (table 2).

Of the nonnative species listed, only the brown-headed cowbird has the potential to be influenced by the management alternatives and therefore, its effects on native birds will be further analyzed in "Chapter 4: Environmental Consequences."

**Table 2: Nonnative Vertebrates Confirmed or Suspected of Maintaining a Presence in Sequoia and Kings Canyon National Parks**

| Common Name | Scientific Name | Is the Species Invasive[1]? |
|---|---|---|
| **AMPHIBIANS** | | |
| American bullfrog | *Rana catesbeiana* | Yes |
| **BIRDS** | | |
| Brown-headed cowbird | *Molothrus ater* | Yes |

**Table 2: Nonnative Vertebrates Confirmed or Suspected of Maintaining a Presence in Sequoia and Kings Canyon National Parks (continued)**

| Common Name | Scientific Name | Is the Species Invasive[1]? |
|---|---|---|
| Barred owl | *Strix varia* | Yes |
| Chukar partridge | *Alectoris chukar* | No |
| Rock dove | *Columba livia* | No |
| White-tailed ptarmigan | *Lagopus leucura* | No |
| Wild turkey | *Meleagris gallopavo* | No |
| House sparrow | *Passer domesticus* | No |
| Indian peafowl | *Pavo cristatus* | No |
| Great-tailed grackle | *Quiscalus mexicanus* | No |
| European starling | *Sturnus vulgaris* | No |
| Black swan | *Cygnus atratus* | No |
| **FISH** | | |
| Black bullhead | *Ameiurus melas* | Yes |
| Green sunfish | *Lepomis cyanellus* | Yes |
| Rainbow trout | *Oncorhynchus mykiss* spp. | Yes |
| Brown trout | *Salmo trutta* | Yes |
| Brook trout | *Salvelinus fontinalis* | Yes |
| Golden shiner | *Notemigonus crysoleucas* | No |
| **MAMMALS** | | |
| Domestic pig | *Sus scrofa* | Yes |
| Domestic cow | *Bos taurus* | No |
| Virginia opossum | *Didelphis virginiana* | No |
| Domestic cat | *Felis silvestris* | No |

[1]An invasive species is a nonnative species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species display rapid growth and spread, establish over large areas, and persist. Adapted from Austin et al. (2013)

In summary, although wildlife species may be affected by the alternatives in this plan — primarily through disturbance or displacement, injury or mortality, habitat alteration, and/or behavior alteration — these impacts would be localized, affecting individuals but not affecting the species or habitat overall. Therefore, most wildlife has been dismissed from further analysis. The species with the potential to be affected by the alternatives, which will be further evaluated in "Chapter 4: Environmental Consequences," include the black bear, the brown-headed cowbird and its effects on native birds, and invertebrates. Special-status species will be considered separately (below).

**Special-status Species** — Special-status species are those federally listed species per the ESA or are other species of management concern. Several special-status species are not included in the impacts analysis. These species were eliminated from analysis for one of the following reasons: 1) the species is believed to be extirpated from the parks; or 2) the alternatives would have only a negligible to minor impact on the species or its habitat. A full listing of the species considered but dismissed from analysis is included in appendix L.

The following provides more information on selected special-status species that are of particular management concern:

*Little Kern golden trout (Oncorhynchus mykiss whitei)* — The Little Kern golden trout was listed as a federally threatened species in 1977 and critical habitat was designated the following year. The critical habitat consists of the entire Little Kern River watershed from one mile below the mouth of Trout Meadows Creek (USDA 2010), which is outside the park. Less than 4% (3,189 acres) of the critical habitat lies with the boundaries of the parks; the majority of the critical habitat (79,450 acres) exists within Sequoia National Forest. Because the Little Kern golden trout, as well as its designated critical habitat, exists only in a discrete area at the southernmost boundary of the parks in an area that is not highly used or likely to be affected by visitors or stock, the Little Kern golden trout will not be discussed further or analyzed in this WSP/FEIS.

*California condor (Gymnogyps californianus)* — The California condor is a federally and state-listed endangered species. Historically, this condor inhabited the western United States, but its distribution in California is currently limited to reserves in Ventura, Santa Barbara, Kern, Monterey, and San Luis Obispo counties (The Ecology Graduate Student Project Collective and Schwartz 2013). In 2013, the U.S. Fish and Wildlife Service (USFWS) documented the exploratory flight of a single California condor across the parks boundaries over the course of 2 days in July (Scott Scherbinski, pers. comm., 2013), which was the first documentation of the species in the parks since 1981. Given its vagrant status, this species will not be analyzed further.

*Swainson's hawk (Buteo swainsoni)* — The breeding population of Swainson's hawk is listed by the State of California as threatened. Swainson's hawks generally avoid mountainous terrain or steep canyons; thus they are rare residents and incidental visitors in the parks (NPS 2007a). Therefore, this species will not be analyzed in this WSP/FEIS.

*Bald eagle (Haliaeetus leucocephalus)* — The bald eagle is currently state listed by California as endangered for the breeding and wintering population. It was removed from federal listing in 2007, although it is still protected by the Migratory Bird Treaty Act and the Bald Eagle and Golden Eagle Protection Act. This species prefers undisturbed areas near large lakes and reservoirs, marshes and swamps, or stretches along rivers where it can find open water for foraging. Because the parks do not provide preferred habitat, bald eagles are only rarely observed. Additionally, there are no known nest sites or communal roosts within the parks (NPS 2007a). For these reasons, the bald eagle will not be analyzed further.

*Peregrine falcon (Falco peregrinus)* — The peregrine falcon is a species of special concern in the State of California. It was removed from federal listing in 1999. Peregrine falcons occasionally nest at both Moro Rock and Chimney Rocks, and climbing restrictions to protect them from disturbance are enacted during the nesting season each year. Changes proposed under the plan alternatives would have indirect and no or negligible impact on peregrine falcon habitat. Therefore, this species will not be further analyzed in this WSP/FEIS.

*Great gray owl (Strix nebulosa)* — The great gray owl is listed as an endangered species by California. The preferred habitat of the great gray owl is boreal forests. They use a wide range of habitats and elevations; however, forest and meadow associations are preferred, as these provide foraging and nesting areas (Ulev 2007). These large owls are nonmigratory, and most movement is associated with availability of prey species.

Great gray owls are rarely seen in the parks. A 2004–2005 study included areas near, but not within, Sequoia National Park; no great gray owls were located during this survey (Sears 2006). The results of

this study show that parts of the Sierra National Forest at the border of Yosemite National Park are likely the core habitat for these owls in California (Sears 2006). The parks are likely outside of the normal range of the great gray owl. Based on this information, this species will not be analyzed further in this WSP/FEIS.

*Black-backed woodpecker (Picoides arcticus)* — The black-backed woodpecker is a nonmigratory species native to the Sierra Nevada. It is a candidate for listing under the California ESA. The black-backed woodpecker lives in mid- to high-elevation coniferous forests with a strong association with recently burned coniferous forests. The primary threats to the species are thought to be certain forest management practices, including fire suppression, thinning to reduce risk of high severity fire, and especially post-fire salvage logging (Bond et al. 2012). Because changes proposed under the WSP alternatives would not affect the parks' Fire and Fuels Management Plan, this species was dismissed from further analysis.

*Townsend's big-eared bat (Corynorhinus townsendii)* — Townsend's big-eared bat is a candidate for listing under the California ESA; it is found throughout California. Townsend's big-eared bat populations are concentrated in areas with caves and cave-like roosting habitat, such as mines, bridges, buildings, and hollows in large old-growth trees (Gruver and Keinath 2006). Threats to this bat include human disturbance and habitat destruction. It is extremely sensitive to human disturbance during roosting; disturbance can cause hibernating bats to rouse at inappropriate times, resulting in an unnecessary use of energy and possibly death (Gruver and Keinath 2006). Changes proposed under the WSP alternatives would have indirect and no or negligible impact on Townsend's big-eared bat habitat. Therefore, this species will not be analyzed in this WSP/FEIS.

*Sierra Nevada red fox (Vulpes vulpes necator)* — The Sierra Nevada red fox is a high-elevation-restricted subspecies of the widespread red fox (*Vulpes vulpes*), which is considered nonnative at lower elevations. It is unknown how common the Sierra Nevada red fox may have been in the parks historically, but recent carnivore surveys using track plates and motion-activated cameras failed to detect them. In the winter of 2015, an individual was detected in Yosemite National Park, and the nearest known population is located near Sonora Pass, about 100 miles north of the parks. Because the Sierra Nevada red fox may have been extirpated in the parks and because the WSP alternatives are not expected to impact its habitat, this species was dismissed from further analysis.

*Wolverine (Gulo gulo)* — The wolverine is listed as a threatened species by the State of California; it is also a candidate for federal threatened status. While potential habitat exists in a large portion of the parks, wolverines are thought to have been extirpated from California in the 1920s. Since the last verified specimen was collected in 1922, there has been only one verified detection of a wolverine in California, which was determined to be a long-distance migrant from the Rocky Mountains (Moriarty et al. 2009). Several unverified reports indicate the possibility of wolverines in the parks as recently as 2008; however, a survey by the Institute for Wildlife Studies did not collect evidence of wolverine presence even though there was an 85% to 98% chance of detecting one if as few as four individuals remained. Because there are no recent sightings and this species is likely extirpated within the parks, it will not be further analyzed.

*Pacific Fisher (Martes pennanti)* — The distinct west coast fisher population has undergone a substantial range reduction over the last century and is classified as "warranted but precluded" from listing under the ESA (USFWS 2004). The fisher is strongly associated with mature-forest habitat (Powell et al. 2003). The primary threats to the species are small population size and the loss and fragmentation of habitat (e.g., via severe wildfire, habitat conversion, and excessive logging) (USFWS 2004). Because timber harvest generally does not occur in the parks and changes proposed under the WSP alternatives would not affect the parks' Fire and Fuels Management Plan, this species was dismissed from further analysis.

*Tompkins' sedge (Carex tompkinsii)* **—** Tompkins' sedge is a perennial herb that is a California state-listed rare plant. This species is found mostly within protected public lands, including Kings Canyon National Park. Tompkins' sedge inhabits chaparral, cismontane woodland, and montane conifer forest habitats and grows in soils derived from metamorphic or granitic rock in the Sierra Nevada. This perennial grass-like herb grows on steep, dry, south-facing rocky slopes as well as shady mesic, north-facing slopes and moist riparian areas (CDFG 2005). In Kings Canyon, it grows on gentle-to-steep slopes at elevations that range from 4,160 to 6,000 feet in canyon live oak (*Quercus chrysolepis*) – California laurel (*Umbellularia californica*) and canyon live oak – singleleaf pinyon *(Pinus monophylla)* associations and mixed coniferous forest (NPS 2003). There are ten known populations in Kings Canyon National Park, seven of which are in the Cedar Grove area of the South Fork of the Kings River canyon; three are along the Middle Fork of the Kings River in Tehipite Valley. The Cedar Grove populations represent the southernmost extent of this species range.

While Tompkins' sedge is listed as a rare species, it is now known to grow in a wider variety of habitat types than when it was listed in 1979. Surveys conducted in 2003 and 2004 estimated Tompkins' sedge population size at 706% above estimates based on early 1980s surveys (Huber et al. 2013). Therefore, Tompkins' sedge is recognized as less vulnerable than previously considered (CDFG 2005). In the areas that it does grow, mitigations are in place to protect the species from fire-line construction and trail-maintenance activities. Therefore, the species was dismissed from further analysis.

*Giant sequoia (Sequoiadendron giganteum)* — Although the giant sequoia is not federally listed or state-listed, the tree is renowned for both its massive size and long life span. The protection of giant sequoia groves drove the establishment of Sequoia National Park, and the species remains a cultural icon of international significance. Although other species surpass the giant sequoia in height and some individual trees may have a greater diameter, giant sequoias have the largest volume of any tree species (Cook 1955). The parks contain the largest giant sequoia trees and groves in the world, including the world's largest tree (by volume), the General Sherman tree. Giant sequoias are also long lived, with lifespans of upwards of 3,000 years. Despite their social relevance, physical size, and longevity, giant sequoias represent a relatively small component of the complex ecosystems of the southern Sierra Nevada, and of the parks.

The natural distribution of giant sequoia is restricted to approximately 75 scattered groves, comprising a total area of 35,607 acres along a limited area of the western Sierra Nevada (Habeck 1992). The parks' wilderness contains 65% of the area of sequoia groves in the two parks and roughly 20% of the area of all the sequoia groves in the world. Giant sequoias prefer deep sandy loam soils with low clay content which tend to be wetter, less acidic, higher in calcium, and lower in nitrogen than soils associated with other conifers in the parks (NPS 2013c). Giant sequoia trees characterize rather than dominate the species composition of the groves, which most commonly exist within the more extensive montane mixed coniferous forest. Common tree associates include white fir (*Abies concolor*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and ponderosa pine (*Pinus ponderosa*) (Barbour et al. 2007).

Fire is an important ecological process which drives giant sequoia population dynamics and shapes the groves. Sequoias have thick, non-resinous bark, thus are well protected from fire. Fire stimulates seed release from cones and also removes the accumulated organic layer from mineral soil; sterilizes the soil, thereby killing seedling pathogens; and opens up the forest canopy to allow in sufficient sunlight for germination and growth. Historically, occasional localized high-intensity/high-severity fire events — in an otherwise low-intensity fire regime — created canopy gaps where giant sequoia seedlings could establish and recruit. As a result, a large number of seedlings tended to germinate after fire.

Fire suppression has led to changes in the age structure and species composition of giant sequoia groves. Loss of the structural diversity usually created by fire, as well as the buildup of duff and litter layers usually removed by fire, has resulted in lower seedling recruitment and thus groves with fewer young sequoias than were present historically. Absence of fire has increased the dominance of fire-intolerant white fir and incense-cedar in many groves, as these species are more able to establish in shaded conditions. For these reasons, the reintroduction of fire into giant sequoia groves is a primary focus of the parks fire management plan.

Air pollutants, especially ozone, can also impact giant sequoias. Although increased ozone levels do not appear to affect mature trees, increased levels can harm the foliage of young seedlings, resulting in increased seedling death rates of giant sequoias as well as other conifer species found in giant sequoia groves (York et al. 2013).

Climate change may alter conditions that sustain giant sequoia growth and regeneration. Snow melt, a major source of soil-water recharge in sequoia groves, is beginning progressively earlier in the spring, prolonging the summer drought characteristic of the Sierra's Mediterranean type climate. Giant sequoia trees are sensitive to changes in temperature and moisture, having reached their current extent over the past 4,500 years in response to climatic cooling and increased moisture. Smaller groves have little room to contract without disappearing. Further, barriers such as shallow or rocky soils on the upper elevation edges of groves may limit any natural expansion uphill as climates continue to warm. If climate model projections are correct, increasing temperature over the next several decades, by inducing earlier snowmelt and prolonging summer droughts, may cause a return to conditions unfavorable to giant sequoias. Studies show that the regeneration phase — dispersal, germination, and early establishment — is the most sensitive to the effects of climate change.

The risk of potential impacts from visitor use is greater in the more accessible groves of giant sequoias, and includes localized soil compaction, loss of topsoil, erosion, and reduced organic matter in soils. Erosion can expose the roots of established trees, while soil compaction can inhibit regeneration, as compacted soils are an unsuitable rooting substrate (York et al. 2013). These types of impacts are seen primarily in non-wilderness areas of the parks, and are mitigated through the establishment of trails, protective fencing, and through visitor education. Potential impacts in wilderness are mitigated by not allowing camping or campfires in giant sequoia groves. Because mitigating the primary stressors to these iconic trees (alteration of the natural fire regime, air pollution, and climate change) lies outside the scope of this plan, and as the WSP alternatives would not result in measurable impacts on giant sequoias, the species was dismissed from further analysis.

**Natural Soundscapes** — The natural soundscape is the aggregate of all natural sounds that occur in the parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur both within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials. The NPS will restore degraded soundscapes to their natural condition wherever possible, and will protect natural soundscapes from degradation due to noise (NPS 2006a).

Two years of monitoring data were collected from six sites in Sequoia and Kings Canyon National Parks. These data cover acoustic conditions for a variety of vegetation zones and seasons in various locations in the parks. Aircraft overflight noise was a pervasive and dominant sound source. Generally, aircraft activity peaked during daylight hours but, from dusk to dawn, its audibility dropped to almost zero at all sites (Formichella et al. 2006). The most remote site, at Crabtree Meadow, did not have the longest noise-free interval or the smallest percent of time that extrinsic, non-natural sounds were audible. Instead, the longest noise-free interval was found at Buckeye Flat and Redwood Canyon. Nevertheless, the mean percent time during which extrinsic sounds were audible was relatively low at all sites. Therefore, the

natural soundscape of the parks' wilderness is in good condition with infrequent human-made noise intrusions.

There would be a negligible effect on natural soundscapes for alternatives 1, 2, 4, and 5. People hiking, stock groups, and helicopter flights all produce audible extrinsic sounds. In alternative 3, an increase in trailhead quotas would produce no more than a negligible effect on natural soundscapes in localized areas. Therefore, this topic was dismissed as a standalone topic in the WSP/FEIS, but it will be addressed under wilderness character.

**Wild and Scenic Rivers** — The designated as well as eligible and suitable rivers were evaluated. These include Middle and South forks of the Kings River and North Fork of the Kern River (designated), and the Marble, Middle, East, and South forks of the Kaweah River, and the South Fork San Joaquin River (eligible and suitable). A Comprehensive River Management Plan was an integral part of the GMP, and river-protection measures were developed. Because this plan would incorporate those measures and proposes no changes to river management and because the actions and alternatives in the WSP/FEIS would not result in adverse impacts on Wild and Scenic River resources or changes to the enhancement or protection of outstandingly remarkable values, this topic is dismissed from further analysis.

**Indian Trust Resources** — Secretarial Order 3175, "Identification, Conservation and Protection of Indian Trust Assets" requires that any anticipated impacts on Indian trust resources from a proposed project or action by Department of the Interior agencies be explicitly addressed in environmental documents. The lands comprising the parks are not held in trust by the Secretary of the Interior for the benefit of Indians or because of their status as Indians; therefore, this topic has been dismissed from further analysis.

**Prime Farmland** — In 1980, the CEQ (40 CFR 1500) directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture, Natural Resources Conservation Service. Prime farmland soil produces general crops such as common foods, forage, fiber, and oil seed and unique farmland produces specialty crops such as fruits, vegetables, and nuts. There are no prime or unique farmlands within the parks' wilderness; therefore, this topic is dismissed from further analysis.

**Biosphere Reserves, Ecologically Critical Areas, and Other Unique Areas** — In 1976, Sequoia and Kings Canyon National Parks were designated an international biosphere reserve by the United Nations Educational, Scientific, and Cultural Organization under the direction of the Man and the Biosphere Program. According to NPS *Management Policies 2006*, "Biosphere Reserves are sites that are part of a worldwide network of natural reserves recognized for their roles in conserving genetic resources; facilitating long-term research and monitoring; and encouraging education, training, and the demonstration of sustainable resource use…." The WSP alternatives would not threaten the associated qualities and resources that make the parks significant, nor would it affect the parks' status as an international biosphere reserve. Rather, it would benefit those resources for which the parks became a biosphere reserve. These topics are dismissed from further analysis.

**Environmental Justice** — Executive Order 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations" was published in the *Federal Register* (59 FR 7629) on February 11, 1994. This order requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on Native American Indian and other minority populations and low-income populations.

The assessment of potential environmental justice impacts is guided by the CEQ's Environmental Justice Guidance under NEPA (CEQ 1997). Determination of environmental justice impacts requires three steps:

1. determining the geographic distribution of low-income and minority populations in the affected area;
2. assessing whether the action under consideration would produce impacts that are high and adverse; and
3. f impacts are high and adverse, a determination as to whether these impacts would disproportionately affect minority and low-income populations.

Sequoia and Kings Canyon National Parks are largely surrounded by other federal lands but there are several communities within close proximity to the southwest portion of Sequoia National Park, and west of Kings Canyon National Park (near Grant Grove). East of the parks there are communities located near the parks that provide important access points to the parks' wilderness.

There are five Indian Reservations near the parks; four in Inyo County and one in Tulare County. In Inyo County, the Big Pine Paiute, Bishop Paiute, Fort Independence, and Lone Pine reservations are situated along U.S. Highway 395, which runs generally north-south through the county, five miles or further from the nearest NPS boundary, and with portions of Inyo National Forest lying between the communities and the parks' boundary. All four reservations are affiliated with the Paiute tribe, with members of the Shoshone also affiliated with the Fort Independence and Lone Pine reservations. According to the 2010 Census, the total population, including some non-Indians, ranged from 93 (Fort Independence) to 1,588 (Bishop Paiute).

The Tule River Indian Reservation is southwest of Sequoia National Park, separated from it by portions of the Sequoia National Forest and with no direct road connection. The 2010 Census reported 1,045 inhabitants on the reservation.

The absence of a permanent resident population within the parks, other than NPS and concessioner staff, distance from Indian Reservations, and lack of proposed actions under the WSP alternatives that would directly or indirectly affect the American Indian, other minority or low-income populations, effectively eliminates the potential for environmental justice concerns. Thus, absent the availability of additional information, no further consideration of environmental justice concerns is deemed necessary for the proposed wilderness-management alternatives. The alternatives analyzed in this document would not result in any identified effects that would be specific to any minority or low-income community. Therefore, environmental justice will not be further analyzed.

**Energy Requirements/Depletable Resource Requirements and Conservation Potential** — None of the alternatives would affect energy-depletable resource requirements or conservation potential to the extent that detailed analysis would be required. Therefore, this topic will not be analyzed in this WSP/FEIS.

## ELEMENTS OR TOPICS OUTSIDE THE SCOPE OF THE PLAN

Many commenters brought forward issues that the WSP/FEIS will not address because the topics are operational in nature; are outside the scope of the plan; are addressed elsewhere in laws, regulations, policies, or previous planning documents; are related to frontcountry uses that do not directly support wilderness use; or the topics will be addressed in other ongoing or future planning documents. Examples of some of the comments brought forward and the justification for ruling out the topics is provided below

in table 3. A complete list can be found in the "Scoping Summary Report" available on the NPS PEPC website at: www.parkplanning.nps/sekiwild.

**Table 3: Elements or Topics Outside the Scope of the Wilderness Stewardship Plan**

| Planning Issue or Topic | Outside the Scope of the Plan Rationale |
|---|---|
| Commenters recommended changing the parks' fees, had issues with hours of operation for permitting, and with staffing levels and experience of wilderness employees. Commenters also had concerns about funding levels for the parks and wilderness management. | These topics are operational issues not subject to plan-level decisions. |
| There were numerous comments related to allowing certain activities or uses in wilderness that are currently not allowed, such as goat packing, bicycling, dogs, mechanized/motorized uses, hunting, hang-gliding, etc. | These activities are currently prohibited in wilderness either through laws, regulations, and restrictions. Goats are specifically not allowed in the parks due to their ability to carry diseases that are catastrophic to native endangered Sierra Nevada Bighorn Sheep. This plan will not change the existing laws and restrictions related to these uses/activities and will not be included in the WSP. |
| A number of commenters brought forward issues related to cave resources, external threats such as pollution and deposition, climate change, and wildlife-management activities. | Many of these topics will be addressed by ongoing or future planning efforts, thus they will not be included in the WSP. |
| Commenters asked if the existing Wild and Scenic Rivers Management Plan could be amended through the WSP to remove the existing use restrictions on the South Fork of the Kings River. | In the 2007 GMP, the parks previously analyzed the aspect of allowing floatation devices (i.e., non-motorized boating) on the lower reach of the South Fork Kings River (Bubbs Creek confluence with South Fork downstream to the parks' boundary) and decided to not allow this activity. NEPA does not require that decisions contained in valid management plans and Records of Decision be revisited in tiered NEPA documents. The NPS, in the WSP/FEIS, need not revisit the question of whether boating should be allowed on this section of river. |
| The use of the Ash Mountain pasture for administrative operations was a topic suggested for inclusion in the WSP/FEIS. | The frontcountry facilities discussed in the WSP/FEIS are limited to those facilities vacated by HSHA v. USDOI. The pasture and facilities at Ash Mountain are used solely for administrative purposes, and are not utilized wholly or partially by commercial service providers. Therefore the use of the Ash Mountain facilities was not vacated from the GMP. An evaluation of the frontcountry facilities associated with administrative stock use, including the Ash Mountain pasture, would be a component of a future planning effort. Therefore, this topic will not be included in the WSP. |
| The use of ranger stations for public occupancy/use was brought forward as a potential planning issue. | In most cases, with the exception of the Pear Lake Ranger Station, which is within a DPWA, the use of ranger stations by the public are contrary to the purposes of wilderness and will not be considered in any of the alternatives. |
| Instituting a shuttle system for wilderness visitors was suggested. | A shuttle system currently operates in summer within a portion of Sequoia National Park. Expanding the shuttle system to support wilderness visitors is outside the scope of this planning process. |

**Table 3: Elements or Topics Outside the Scope of the Wilderness Stewardship Plan (continued)**

| Planning Issue or Topic | Outside the Scope of the Plan Rationale |
|---|---|
| The parks' wilderness character faces a number of external threats. The most challenging to deal with, and potentially the most damaging, are those outside of NPS control, such as air pollution, atmospheric contaminant deposition, and climate change (NPS 2013c). These external threats "include airborne contaminants such as nitrogen, sulfur, heavy metals, pesticides, and herbicides, which are concentrated along the west side of Sequoia National Park (Panek and Esperanza 2012)." In a study of western national parks, Sequoia and Kings Canyon ranked highest in contamination of air, vegetation, snow, and water by semi-volatile organic compounds. Some fish found in the Kaweah River drainage contained levels of dieldrin, DDT, and mercury high enough to pose health risks to humans and other predators (Landers et al. 2008). | These agents that originate outside the parks degrade natural conditions in wilderness and are difficult or impossible to influence, resist, or mitigate (NPS 2013c) and are therefore outside the scope of the WSP. However, monitoring would continue per the Wilderness Character Monitoring Strategy (appendix C). |
| Natural and cultural resources management and protection is an important component of wilderness management. Commenters brought forward issues such as the protection and long-term maintenance of historic resources, the protection of archeological resources, and a long-term strategy to protect natural resources in wilderness. | The WSP has taken into account the preservation and protection of natural and cultural resources, but does not outline particular strategies for the long-term management of these resources. However, a Resource Stewardship Strategy (in development) will address these topics. |

# Chapter 2

Alternatives

**ON THE PREVIOUS PAGE**
Atop Glacier Pass
Photo Courtesy of Rick Cain

# CHAPTER 2: ALTERNATIVES

## INTRODUCTION

This chapter describes the range of alternatives considered for the WSP/FEIS. A total of five alternatives, including the no-action alternative, are presented below. The environmentally preferable alternative is identified later in this chapter. Summary tables comparing the key topics between the alternatives are presented at the end of this chapter.

NEPA requires federal agencies to consider and fully evaluate a range of reasonable alternatives that address the purpose of and need for an action. Reasonable action alternatives must be economically and technically feasible and demonstrate common sense. CEQ regulations (40 CFR 1502.14) also require that federal agencies analyze a "no-action" alternative; this alternative evaluates future conditions under existing management plans or practices and allows the public to evaluate what would happen if no new action was implemented.

Alternatives to be considered may originate from the agency proposing an action, from cooperating agencies, or from members of the public. Alternatives may also be developed in response to comments from coordinating or cooperating agencies. With the exception of the no-action alternative, it is important to note that alternatives must meet, to a large degree, the stated purpose and objectives for taking action and should not conflict with federal, state, or local laws, regulations, and policies or constraints identified during public scoping of the WSP.

Alternative 1 (the no-action or status-quo alternative) describes how wilderness is currently managed in the parks. This provides a baseline for comparison with the other alternatives. Alternatives 2, 3, 4, and 5 (alternatives proposing a change in the status quo) describe a range of reasonable and feasible approaches that meet the purpose and need for action and to achieve the WSP objectives.

## DEVELOPMENT OF ACTION ALTERNATIVES

The alternatives described in this chapter were developed through a multi-year process that included repeated opportunities for both agency and public input. At the start of this planning process, the NPS solicited input from the public, park staff, government agencies, tribal officials, and other organizations for input on key issues and conditions desired for the parks' wilderness.

An interdisciplinary planning team (IDT) comprised of park staff reviewed and considered the staff and public comments received during the 2011 scoping period, as well as from the 1997 scoping period. From these comments, the IDT identified the key concepts that would be included in the alternatives. From 2009 to 2014, studies were completed regarding a number of important wilderness resources. The conclusions of these studies also helped in developing the alternatives. Using this varied information and input, the IDT identified a dozen key aspects of wilderness management that needed to be addressed in the WSP, including wilderness use levels, access and trails, stock use and grazing, commercial services, and recreational and administrative infrastructure.

The IDT then drafted six alternative approaches for managing the overall character of the parks' wilderness. Each of these draft alternatives emphasizes particular visitor experiences associated with different wilderness qualities. Each one meets applicable laws, as well as the goals, objectives, and desired conditions described in chapter 1. The high standard for natural resource preservation required by the 1964 Wilderness Act means there is little variation across the alternatives in terms of how natural

resources are addressed. The main differences between these alternatives lie in the key elements of wilderness management – use levels, access and trails, stock use and grazing, and infrastructure, both recreational and administrative. These differences are driven by the different approach to management that each alternative offers. Each alternative serves visitor and/or operational needs and commercial services in different ways.

After the IDT developed these preliminary draft alternatives the parks' Leadership Team and the leadership of the NPS Pacific West Regional Office reviewed them. In the fall of 2012, the preliminary draft alternatives were published for public review and comment on the NPS PEPC system. Approximately 200 comment letters were received. These public comments raised significant points that were used in revising the draft alternatives for this WSP/FEIS. The number of action alternatives was reduced from five to four.

The final set of five alternatives outlined in this chapter represent a broad range of ideas designed with maximum input to best achieve the purpose of the plan – to guide the management of visitor use and associated administrative activities in order to preserve wilderness character.

## SELECTION OF THE NPS PREFERRED ALTERNATIVE

In summer 2013, the parks held a facilitated decision-making workshop with key staff to identify which alternative in this WSP is preferred by park management. The workshop incorporated a wide range of resource and visitor-use information to give the participants the best available knowledge for making reasoned and informed decisions. Once the preferred alternative was selected, it was presented to leadership staff at the Pacific West Regional Office for concurrence.

Alternative 2 is the NPS preferred alternative (Note: At the time of the 2012 public review period, this alternative was entitled "preliminary draft alternative 3"). It was selected by comparing the relative advantages of each alternative and examining how each alternative met the goals, objectives, and desired conditions for wilderness stewardship. Park managers believe that alternative 2 provides the most balanced, comprehensive approach to protecting wilderness character when compared with any other alternative. Overall, alternative 2 provides the best combination of management strategies, resulting in a practical, common sense approach to wilderness management. It protects the qualities of wilderness, supports a balance of resource preservation and use over the long term, and welcomes visitors to participate in stewardship and use of one of the world's finest wilderness areas. The NPS environmentally preferable alternative is alternative 5 described later in this chapter.

**Rae Lakes**

# ALTERNATIVE 1: NO-ACTION / STATUS QUO

## OVERVIEW

The overarching idea behind alternative 1 is that the current documents and actions used by the parks to oversee wilderness would remain the same. That does not mean that nothing could change, but changes would be driven by the same plans currently in use.

**Alternative 1 General Concept: Continue Current Management.**

Under alternative 1, the management of all wilderness areas would continue to be guided by the *Backcountry Management Plan* (BMP) and *Stock Use and Meadow Management Plan* (SUMMP), each approved in 1986. [Note: the original BMP dealt with "backcountry." Most of what was referred to as "backcountry" is now either designated wilderness, listed as a potential addition to designated wilderness, or proposed (and therefore managed as) wilderness. Consequently, where "backcountry" is used, it refers to wilderness.]

The BMP allows for recreational use in such a manner that the parks' resources are preserved now and into the future. The BMP establishes trailhead quotas, a wilderness permit system, and management objectives for campfires, campsites, sanitation, food storage, special-use limits, area closures, stock use and grazing, education and interpretation, trails and travel, signs, commercial operations, ranger stations, administrative policies, and monitoring (e.g., meadows monitoring). Alternative 1 includes the continuation of management objectives established under the BMP.

These BMP's objectives include ensuring that:

- Maximum-use levels would continue to keep resource impacts within acceptable limits.
- A variety of recreational uses and opportunities would continue to be offered to provide a range of wilderness experiences.
- Regulations would continue to be minimized to allow as much freedom of recreational use as possible.
- Recreational use would continue to accommodate a range of visitor densities, from the relatively social experience that occurs in popular areas to the solitude found in the more rugged and remote areas.
- Visitors would continue to follow procedures that keep impacts on park resources and other visitors to a minimum.
- Information, education, and interpretation would continue to be directed at achieving visitor understanding, support, and compliance.
- Scientific research would continue to be conducted in wilderness to inform management decisions and ensure that natural processes are unimpaired.
- The network of wilderness trails would continue to be maintained.

- A trail signage program would continue to be used and refined, using materials and designs appropriate to the wilderness setting.
- Stock use by visitors and park work crews would continue to be within limits that ensure resource protection and maintain the quality of visitor experience.
- Commercial guide services would continue to be allowed as appropriate. Commercially guided trips would continue to be regulated through the established permit system.
- Structures necessary for the purposes of administration and historic preservation would continue to be allowed. These include existing ranger stations, historic cabins, snow-survey cabins, radio facilities, dams for water storage and electric generation, Bearpaw Meadow High Sierra Camp, snow-course markers and telemetry devices, toilets, and research facilities.
- Administrative activities for maintenance of trails and facilities, visitor protection and information, natural resource management, research, and general management purposes would continue to be conducted.
- The BMP would continue to be updated to protect natural and cultural resources as new information becomes available through research and monitoring.

The 1986 SUMMP establishes the management system and tools for stock use and includes site-specific opening dates for grazing, grazing management, use levels, protection of Sierra Nevada bighorn sheep ewe-lamb ranges, installation of drift fences, stock and camp etiquette, implementation of temporary variances, and other closures. The SUMMP also establishes a monitoring program to inform and modify management as necessary to reduce resource impacts.

Alternative 1 includes the continuation of management objectives established under the 1986 SUMMP. These management objectives include ensuring that:

- Stock, to the extent possible, would continue to be allowed in the wilderness of the parks on the same areas and trails at the same levels and patterns unless information from the monitoring system indicates need for change.
- Management controls would remain in place to protect forage areas from change in plant species composition, cover, and/or vigor, and from adverse effects on soils and associated sod that may lead to deteriorated productivity or unnatural erosion, and to allow recovery where necessary.
- Management controls on use levels, limits on travel on- and off-trail, temporary closures and opening dates, number of stock, number of nights per area variances, education, and monitoring would continue to be used to minimize the effects of pack and saddle stock on trails, camps, drainage patterns, and water quality.
- A series of meadows (or definable parts of meadows), including representatives of all major types within the parks, would continue to be protected from stock use so that they are perpetuated as – or allowed to become – naturally functioning ecosystems. These meadows would continue to provide an opportunity for all visitors to enjoy seeing meadows in their natural state, and provide opportunities for scientific study. This includes comparison with meadows that are grazed, so that the relative effects of climate, plant-succession, and grazing may be better understood.
- A program of education and participative support for minimum-impact stock use and improved understanding and cooperation between stock users and backpackers would continue.
- Rehabilitation projects would continue to be considered in areas where past use has left an impact on park resources.

- The monitoring program established through the 1986 SUMMP would continue to provide information about the effects of pack and saddle stock on the resources of the parks so that guidelines may be modified to protect the parks' values. The monitoring program would continue to take into account variation in annual climate, the characteristics of specific forage areas, and the inherent abilities of different species to withstand grazing and trampling pressure.

## KEY ELEMENTS OF ALTERNATIVE 1

During the internal and public scoping, eleven key topics were identified as critical to managing wilderness. These elements are the same for each alternative; however, the management actions vary by alternative.

### Element 1: Visitor-use Levels

**Permits and Quotas** — Under alternative 1, all overnight visitors (with the exception of administrative users) in the parks' wilderness, whether private (i.e., self-supported) or traveling with the support of a commercial service provider, are subject to the trailhead quota system (table 4), and must obtain a wilderness permit from an approved source [e.g., NPS, United States Forest Service (USFS), or Pacific Crest Trail Association]. Daily quotas are established for most trailheads and are based on visitor frequency and distribution patterns, including those of commercially supported visitors. These limits are intended to ensure reasonable use levels, the protection of wilderness character, and thus a high quality wilderness experience for visitors.

For those trailheads managed by the parks on the west-side of the parks, visitors must remain within the established quotas with rare exceptions. The BMP states an exception: "On days that the trailhead quotas are full the commercial pack station operator may override the quota for that day since the quotas are structured with the commercial pack station use included."

Those visitors entering the parks' wilderness via trailheads managed by Inyo National Forest on the east side of the parks are subject to the trailhead quotas of Inyo National Forest (table 4). Most of these quotas are "combined" (i.e., one quota for both private and commercially supported visitors), and some are "split" (i.e., separate quotas for private visitors and commercially supported visitors).

Visitors also enter the parks' wilderness from more distant Yosemite National Park and USFS managed trailheads (e.g., Sierra and Sequoia national forests), of which some have quotas and some do not. These visitors are subject to the entry policies of the agency issuing the permits at the trailhead.

**Table 4: Current Trailhead Quotas – North to South**

| Trail/Area Name (Agency Issuing Permits)[1] | Entry Name/Park[1] | Daily Quota or Use Level[2] | Commercial Quota[3] |
|---|---|---|---|
| JMT/YOSE/Sierra NF | Piute Creek/KICA | VH | |
| Pine Creek/Inyo NF | Piute Creek/KICA | 15 | 15 |
| North Lake/Piute Pass/Inyo NF | Piute Creek/KICA | 30 | 15 |
| Florence Lake/Sierra NF | Piute Creek/KICA | 72 | |
| Sabrina/Inyo NF | Lamarck Col/KICA | 10 | 8 |
| Courtright Reservoir/Sierra NF | Hell-for-Sure Pass/KICA | VL | |
| Bishop Pass/Inyo NF | Dusy Basin/KICA | 36 | 15 |
| Taboose Pass/Inyo NF | Upper Middle Fork Kings/KICA | 10 | |

**Table 4: Current Trailhead Quotas – North to South (continued)**

| Trail/Area Name (Agency Issuing Permits)[1] | Entry Name/Park[1] | Daily Quota or Use Level[2] | Commercial Quota[3] |
|---|---|---|---|
| Crown Valley/Rancheria/Sierra NF | Blue Canyon/KICA | VL | |
| Crown Valley/Rancheria/Sierra NF | Tehipite/KICA | L | |
| Sawmill Pass/Inyo NF | Woods Lake Basin/KICA | 10 | |
| Baxter Pass/Inyo NF | Baxter Lake/KICA | 8 | |
| Deer Creek/Sierra NF | Monarch Divide/KICA | L | |
| Lewis and Hotel Creeks/SEKI | Monarch Divide/KICA | 25 | |
| Copper Creek/SEKI | Monarch Divide/KICA | 20 | |
| Woods Creek/Paradise Valley/SEKI | Rae Lakes Loop/KICA | 25 | |
| Bubbs Creek/SEKI | Rae Lakes Loop/KICA | 25 | |
| Onion Valley/Kearsarge/Inyo NF | Rae Lakes Loop/KICA | 60 | 15 |
| Don Cecil/KICA | Don Cecil/KICA | VL | |
| Summit Meadow/Sequoia NF | Don Cecil/KICA | VL | |
| Sugarloaf/Marvin Pass/Sequoia NF/SEKI | Sugarloaf/KICA | 25 (if into SEKI) | |
| Rowell Meadow/Belle Canyon/Sequoia NF/SEKI | Sugarloaf/Belle Canyon/KICA | 25 (if into SEKI) | |
| J.O. Pass/Big Meadows/Sequoia NF/SEKI | Sugarloaf/Twin Lakes/KICA/SEQU | 15 (if into SEKI) | |
| Redwood Canyon/SEKI | Redwood Canyon/KICA | 15 | |
| Shepherd Pass/Inyo NF | Tyndall Creek/SEQU | 15 | |
| Twin Lakes/SEKI | Twin Lakes/SEQU | 30 | |
| Lakes Trail/SEKI | Emerald/Pear Lakes/SEQU | 25[(4)] | |
| Alta/Wolverton/SEKI | Panther Gap/SEQU | 25 | |
| North Fork Lone Pine Creek | Mount Whitney/SEQU | 10 | 8 |
| Whitney Portal/Inyo NF | Mount Whitney/SEQU | 60 (+100 day-users) | |
| North Fork Kaweah/SEKI | Yucca Creek/SEQU | VL | |
| Colony Mill Road (east)/SEKI | Crystal Cave Road/SEQU | VL | |
| Colony Mill Road (west)/SEKI | North Fork/SEQU | VL | |
| HST/SEKI | Bearpaw/SEQU | 30 | |
| Middle Fork Kaweah/SEKI | Bearpaw/River Valley/SEQU | 25 | |
| Cottonwood Lakes/Inyo NF | New Army Pass/SEQU | 60 | 15 |
| Cottonwood Pass/Inyo NF | Rock Creek/Kern River/SEQU | 40 | |
| PCT–South/Multiple | Rock Creek/SEKI | M | |
| Trail Pass and Mulkey Pass/Inyo NF | JMT/Rock Creek/Kern River/Inyo NF and SEKI | L | |
| Paradise Ridge/SEKI | Paradise Ridge/SEQU | 15 | |
| Atwell/SEKI | Hockett/SEQU | 25 | |
| Timber Gap/SEKI | Timber Gap/Cliff Creek/SEQU | 25 | |
| Sawtooth/SEKI | Monarch Lakes/Sawtooth Pass/Kern Drainage/SEQU | 20 | |
| Tar Gap/SEKI | Hockett/SEQU | 25 | |
| Mosquito/SEKI | Mosquito Lakes/SEQU | 25 | |

**Table 4: Current Trailhead Quotas – North to South (continued)**

| Trail/Area Name (Agency Issuing Permits)[1] | Entry Name/Park[1] | Daily Quota or Use Level[2] | Commercial Quota[3] |
|---|---|---|---|
| Eagle/SEKI | Eagle Lake/SEQU | 20 | |
| White Chief/SEKI | White Chief/SEQU | 25 | |
| Franklin/SEKI | Franklin Lakes and Pass/SEQU | 30 | |
| Farewell Gap/SEKI | Farewell Gap/Sequoia NF | L | |
| Ladybug/SEKI | South Fork/Ladybug/SEQU | 15 | |
| Garfield/SEKI | South Fork/Garfield/Hockett/SEQU | 15 | |
| Shake Camp/Sequoia NF | Hockett/SEQU | L | |
| Lewis Camp (Quaking Aspen)/Sequoia NF | Hockett/Kern/SEQU | M | |
| Jerkey Meadow/Sequoia NF | Kern/SEQU | L | |

[1]Agency names are abbreviated as follows: YOSE = Yosemite National Park; SEKI = Sequoia and Kings Canyon National Parks; SEQU = Sequoia National Park; KICA = Kings Canyon National Park; NF = National Forest
[2]In regard to quotas and estimated use into SEKI from the indicated trailhead: VL= very low estimated use (<100 users/yr); L = low estimated use (100–300 users/yr); M = medium estimated use (>300 users/yr) and VH (>3000 users/yr). Note: each user averages ~3–4 use nights/trip. A cell with a use-level letter indicates no quota.
[3]Separate commercial quotas only apply to specific trailheads originating in Inyo NF. Some of the entries, both private and commercial, into wilderness from those trailheads would not enter SEKI, remaining exclusively in Inyo NF.
[4]Lakes Trail is controlled by a destination quota – which limits the number of people in each of the two lake basins at Emerald and Pear lakes with a maximum allowable of 25/night. If hikers are traveling past Pear Lake to Tablelands, the quota is 25.

Destination quotas are applied for Emerald and Pear lakes to limit visitor density.

Access to Mount Whitney from the east side (Whitney Portal Trailhead) is controlled by a special permit system administered by the USFS. This special permit system applies to both day-users and overnight-users.

There are no day-use permits or day-use quotas other than the USFS day-use permit for Mount Whitney.

**Visitor Capacities and Encounter Standards** — Although the BMP and the SUMMP did not formally establish visitor capacities and encounter standards, current use levels of visitors are controlled through several methods. Primary among these is the use of a quota system on daily entries into the parks' wilderness from individual trailheads. This method is in place at nearly all Sequoia and Kings Canyon National Parks managed trailheads and at most trailheads managed by the USFS (Inyo, Sierra, and Sequoia national forests). Additional methods include requiring the use of designated campsites and areas, group size limits, and night-stay limits in specific areas. Many of these controls were put in place in the 1970s and 1980s (specifically with the 1986 BMP) to control the historically highest use levels, and the subsequent impacts of use, of that time period.

The average number of overnight wilderness visitors for the past three years (2010–2012) is approximately 23,000, accounting for an average of approximately 111,000 visitor-use days (VUD) per year. These figures are compiled from permits issued by Sequoia and Kings Canyon National Parks, and Inyo, Sequoia, and Sierra national forests. This does not include Pacific Crest National Scenic Trail users coming from south of Sequoia National Forest or coming from north of Inyo and Sierra national forests, or John Muir Trail users coming from Yosemite National Park or other points north of Sierra National Forest. It is estimated that these additional 3,500 users account for an additional 28,000 visitor-use days (based on projected numbers of users and days of use – estimates of visitor-use days in these parks per trip per person for Pacific Crest National Scenic Trail and John Muir Trail users is eight). For the purposes of the WSP, only the VUDs calculated from wilderness permits are used. The estimates from

PCT/JMT long-distance use have not been included, though they have been considered in visitor-capacity decision making.

**Element 2: Trails**

The NPS maintains a network of trails in the parks' wilderness, including the PCT, JMT, HST, and many others. Under alternative 1, these trails are maintained, reconstructed, or rerouted following the general standards established in the NPS Trail Maintenance Handbook (Hooper 1983). Routine trail maintenance includes removing rocks and downed trees, clearing brush, water-bar construction and cleaning, filling washed-out trails, and bridge repairs or reconstruction. All maintenance activities are conducted in a manner that protects park resources and minimizes visitor disturbance. Under alternative 1, new trail construction does not take place in areas that are currently without trails. Figure 6, depicting the current wilderness trail system, can be found on page 83.

The NPS maintains trail signs with directional markers and mileages. Interpretive signs are generally not placed in wilderness, unless special circumstances exist. Marking informal trails with plastic ribbons, cairns, or other markers is prohibited. The only exception is the use of temporary markings for emergency purposes such as search and rescue and fire management. In these cases, markings are removed after emergency activities end.

**Element 3: Campfires**

Recreational campfires are allowed in the foothill and montane forest areas where adequate wood supplies exist. Recreational campfires are allowed up to:

- 10,000 feet in the San Joaquin River drainage.
- 10,000 feet in the Kings River drainage.
- 9,000 feet in the Kaweah River drainage.
- 10,400 feet in the Kern River drainage. (This elevational limit was established in 2009 to protect downed wood resources, especially foxtail pine resources, and superseded the BMP campfire limit of 11,200 feet in the Kern River drainage.)

In addition, there are site-specific prohibitions in the Kings (Granite Basin and Redwood Canyon), Kaweah (Hamilton Lakes and Mineral King Valley), Kern (above 10,000 feet in Nine Lakes Basin / Big Arroyo, and within ¼ mile of the food-storage box at Lower Crabtree Meadow), Tule River (Summit Lake Basin and Dillonwood area) drainages, and in certain sequoia groves (table 5 on the next page). The restrictions in sequoia groves would apply across all alternatives.

This alternative allows recreational campfires in 398,829 acres of the total 837,806 acres of wilderness (48% of the wilderness). Figure 7 (page 85) depicts campfire restrictions for alternative 1.

**Table 5: Camping and Campfire Restrictions in Giant Sequoia Groves in Sequoia and Kings Canyon National Parks – All Alternatives**

| Grove Name | Wilderness Camping Allowed? | Campfires Allowed? |
|---|---|---|
| Atwell | No | No |
| Big Springs | Yes | No |
| Big Stump[1] | No | No |
| Board Camp | Yes | No |
| Cahoon (Creek) | Yes | Yes |
| Castle Creek | Yes | Yes |
| Cedar Flat | Yes | Yes |
| Clough Cave | No | No |
| Coffeepot | No | No |
| Dennison | Yes | Yes |
| Devils Canyon | Yes | Yes |
| Dillonwood[1] | No | No |
| Douglass | Yes | Yes |
| East Fork | Yes | Yes |
| Eden Creek | Yes | Yes |
| Forgotten | No | No |
| Giant Forest | No | No |
| Garfield | Yes | Yes |
| Granite Creek | Yes | Yes |
| Grant[1] | No | No |
| Homer's Nose | Yes | No |
| Horse Creek | Yes | Yes |
| Little Redwood Meadow | Yes | Yes |
| Lost[1] | No | No |
| Muir | No | No |
| Oriole Lake Grove | Yes | Yes |
| Pine Ridge | Yes | No |
| Putnam-Francis | Yes | No |
| Redwood Canyon | Yes | No |
| Redwood Creek | Yes | No |
| Redwood Meadow | Yes | Yes |
| Redwood Mountain | Yes | No |
| Sequoia Creek[1] | No | No |
| Skagway | Yes | No |
| South Fork | Yes | Yes |
| Squirrel Creek | Yes | Yes |
| Surprise | Yes | No |
| Suwanee | No | No |

[1] Not in wilderness

### Element 4: Food Storage

There are some 86 food-storage boxes (also called *lockers*) presently in the parks' wilderness (see figure 3, page 67, for a map of current locations, and table 15, pages 106–110, for names of locations). Portable food-storage containers are required in three specific areas on a seasonal basis, per the following regulations implemented after the BMP.

Effective 5/01 to 10/31: Portable, NPS-allowed, food-storage containers (including panniers) with the capacity to store all garbage, food, and scented items are required for all overnight parties entering and or exiting the following areas:

- Rae Lakes Loop and vicinity — all visitors must use NPS-allowed, portable food-storage containers. Long distance through hikers on the PCT and the JMT may use either portable containers or food-storage boxes.
- Dusy and Palisades basins — all visitors must use portable containers.
- Rock Creek area — all visitors must use park-allowed, portable food-storage containers. Long distance hikers on the PCT may use portable containers or food-storage boxes.

The technique of counterbalancing or hanging food is allowed year-round within wilderness, with the exception of Dusy Basin, Rae Lakes, and Rock Creek from May 1 to the end of October. Posting a guard to watch and protect food is a prohibited food-storage technique.

Commercial service providers are required to provide NPS-approved portable containers for trips to any part of wilderness. Use of counterbalancing, food-storage boxes, or food guarding is prohibited.

### Element 5: Human-waste Management

Restrooms and privies are located in areas where conditions warrant and where determined to be the minimum necessary for the administration of wilderness (currently there are two restrooms and an estimated 22 privies in wilderness, excluding toilets associated with ranger stations). A cat-hole (a shallow hand-dug hole for burying human waste) or carrying-out of waste is required where no privies or restrooms are provided. Pack-out waste kits are recommended in the Mount Whitney area.

### Element 6: Party Size

Party size refers to the number of people and stock in a single group of wilderness visitors. Under alternative 1 the current maximum party size for on- and off-trail hikers is 15 people with area specific exceptions per the BMP and SUMMP. Tables 6 and 7 present party size limits under alternative 1.

**Table 6: Party-size Limits for Hikers and Boaters for Alternative 1**

| Type of Hiking Trip | Maximum Party Size |
|---|---|
| On-trail (day-use) | 25 |
| On-trail (overnight use) | 15 |
| Off-trail (overnight and day-use) | 15 |
| Area-specific | Redwood Canyon – 10 |

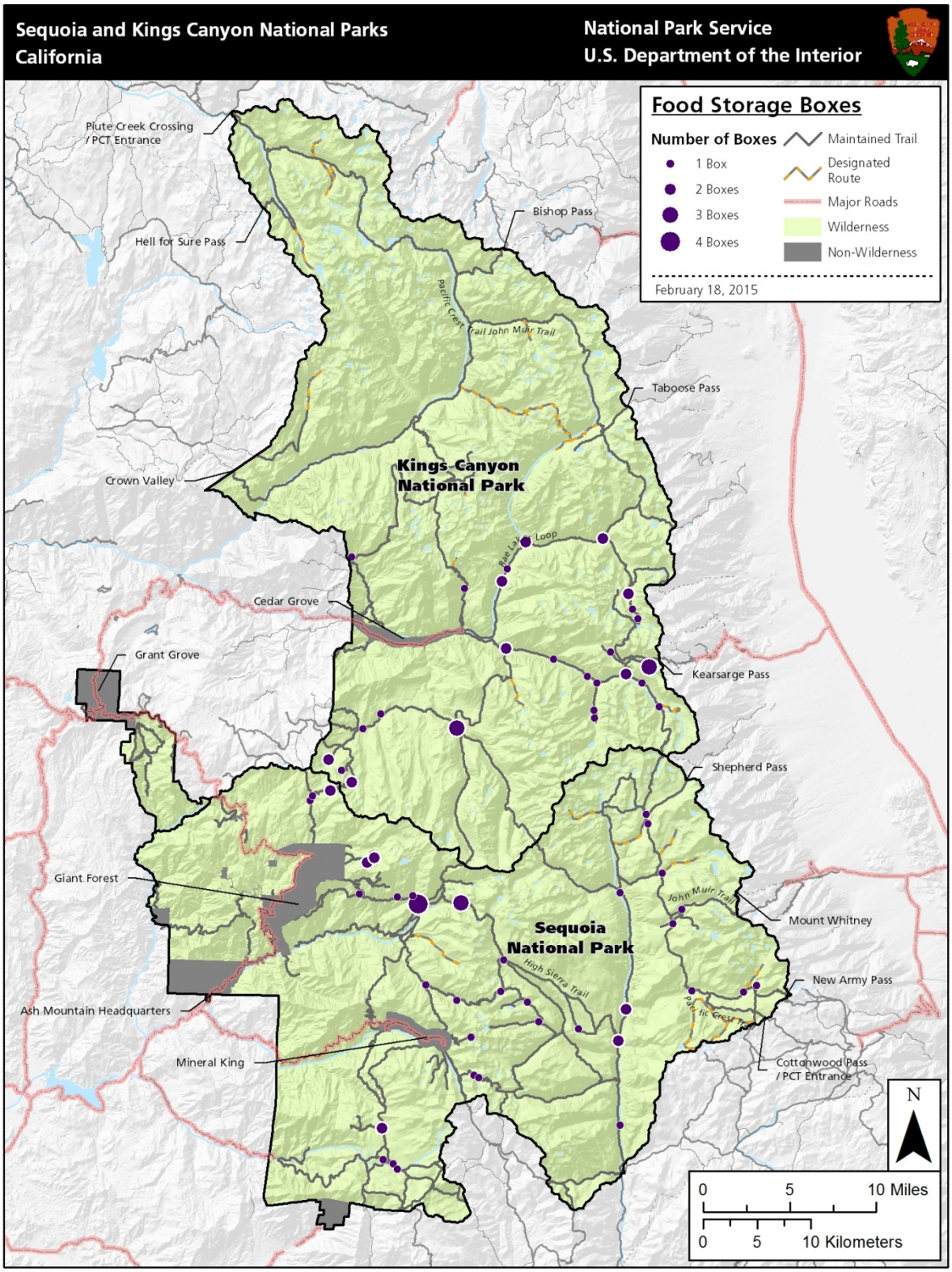



**Figure 3: Current Food-storage Box Locations**

**Table 7: Party-size Limits for Stock Parties for Alternative 1**

| Type of Stock Trip | Maximum Party Size for People and Stock |
|---|---|
| Day-use (including spot, dunnage, and day rides) | People: 25<br>Stock: 20<br>Combined: 45 (with some lower exceptions per BMP/SUMMP) |
| On-trail | People: 15<br>Stock: 20<br>Combined: 35 (with some lower exceptions per BMP/SUMMP) |
| Off-trail (in areas specifically designated for off-trail stock use) | People: 15<br>Stock: 20<br>Combined: 35 |
| Area-specific | Temporary limits in five specific areas where there is a maximum party size of eight people/stock or combination: Dusy Basin, Sphinx Lakes, Darwin Canyon, Mount Langley, and Sixty Lake Basin.<br>Redwood Canyon maximum of 10 head of stock.<br>Milestone Basin maximum of 8 head of stock. |

### Element 7: Camping/Campsites and Night Limits

To preserve the unconfined aspect of recreation in the parks' wilderness, there are few restrictions on where overnight visitors can camp. Following Leave No Trace© practices helps to preserve the natural quality.

Camping is prohibited within one mile of any road and generally prohibited within four miles of a developed area or trailhead complex (NPS 1986a). The BMP identifies first allowable campsites for trailheads, and camping along trail corridors is prohibited prior to reaching the first-camp locations (tables 8 and 9). These first-camp limits minimize impacts in heavy day-use areas and protect solitude. In many instances, the first-camp locations are the first suitable site (with water and room to camp) from the trailhead. First-camp policies also prevent frontcountry overflow camping from extending into wilderness, to control impacts at sensitive "close-in" areas, and to protect opportunities for solitude for day-use visitors.

Additional first camps not specified in the BMP are listed in table 9 on the next page. These trails have historically received low use, and the distances reflect the general one-mile restriction or indicate the first available water source and/or the probable camp destination.

**Table 8: First Camps Established in 1986 Backcountry Management Plan (BMP)**

| Trailhead Name | Distance to First Camp | Name of First Camp |
|---|---|---|
| Lewis Creek | 4 miles | Comb Creek |
| Copper Creek | 3.6 miles | Lower Tent Meadow |
| Woods Creek/Paradise Valley | 7 miles | Lower Paradise Valley (designated sites only) |
| Bubbs Creek | 4 miles | Sphinx Creek |
| Twin Lakes | 3 miles | Cahoon Meadow |
| Lakes – Emerald/Pear Lakes | 5 miles | Emerald Lake (designated sites only) |
| Alta (Wolverton) | 3 miles | Panther Gap (no water) |
| HST/Crescent Meadow | 3 miles | Panther Creek |
| Atwell/Hockett | 6 miles | Clover Creek |

**Table 8: First Camps Established in 1986 Backcountry Management Plan (continued)**

| Trailhead Name | **Distance to** First Camp | Name of First Camp |
|---|---|---|
| Timber Gap | 4 miles | Timber Gap (no water) |
| Sawtooth-Monarch/Crystal | 1 mile | Groundhog Meadow |
| Franklin | 4 miles | Farewell Junction |
| Farewell Gap | 4 miles | Farewell Junction |
| White Chief | 4 miles | White Chief Bowl |
| Eagle | 3.4 miles | Eagle Lake |
| Mosquito | 4 miles | Mosquito Lake #2 (Mosquito Lake #1 closed to camping) |
| Tar Gap | 6 miles | Deer Creek |
| Ladybug (South Fork) | 4 miles | Ladybug Camp |
| Garfield | 4 miles | Garfield Grove / Snowslide Canyon |

**Table 9: First Camps Established Subsequent to the 1986 Backcountry Management Plan**

| Trailhead Name | Distance to First Camp | Name of First Camp |
|---|---|---|
| Lewis Creek and Hotel Creek | 5.4 miles | Comb Creek |
| Sugarloaf (Marvin Pass Trailhead) | 2.3 miles | Rowell Meadow (USFS) |
| Rowell Meadow (Belle Canyon Trailhead) | 2.2 miles | Rowell Meadow (USFS) |
| J.O. Pass (Big Meadows) | 2.2 miles | Rowell Meadow (USFS) |
| North Fork Kaweah | 1 mile | |
| Colony Mill Road Trail | 1 mile (each end) | |
| Middle Fork Kaweah | 3.5 miles | Panther Creek |
| Paradise Creek | 1 mile | |
| Paradise Ridge | 1 mile | |

Camping is prohibited along the following trails or in the following areas:

- Big Baldy Trail
- Buena Vista Trail
- Don Cecil Trail
- Giant Forest and Crystal Cave areas
- Little Baldy Trail
- Lost Grove Area Trails
- Marble Falls Trail
- Muir Grove Trail
- Oriole Lake Trail
- Tokopah Falls Trail

No camps are designated for the exclusive use of stock users with the exception of Upper and Lower Funston Meadows, which are designated for stock use only per the 1990 addendum to the SUMMP (NPS 1990). These camps were designated exclusively for stock users to ensure stock could camp in appropriate areas and not be displaced to inappropriate areas by backpackers occupying the stock sites.

The current policies of camping on durable surfaces (not on vegetation) and away from water sources apply. Camping on vegetation or in meadows is prohibited. There are camping restrictions associated with selected sequoia groves (table 5 on page 65) and these would apply across all alternatives. Camping within 25 feet of water is prohibited; 100 feet is the recommended camping distance from water.

**Length of Stay/Night Limits** — Night limits exist to protect popular areas from crowding and campsite proliferation (i.e., increase in numbers of campsites) and the resulting reduction in solitude. Night limits also prevent extended stays, which keeps popular areas available to more groups by preventing a small number of groups from occupying the area for long periods.

All campers are currently limited to stays of 14 consecutive nights at a single location, 21 total nights per trip, and 63 total nights per year. Exceptions exist for specific areas and are presented in table 10.

**Table 10: Site-specific Exceptions to the Night Limits under Alternative 1**

| Location | Night Limits Exceptions (Consecutive Nights in One Location) |
|---|---|
| Charlotte Lake, Hamilton Lake, Kearsarge Lakes, Paradise Valley, Redwood Canyon | 2-night limit |
| Rae Lakes | 1-night limit per lake |

**Designated Campsites** — The BMP identified 12 areas where designated campsites could be established and include the following:

- Bearpaw Meadow
- Eagle Lake
- Emerald Lake
- Evelyn Lake
- Hockett Meadow
- Kern Hot Spring
- Lower Funston
- Lower Mosquito Lake
- Paradise Valley
- Pear Lake
- Summit Lake
- Upper Funston

Designated campsites are established to control physical and social impacts at the most frequently visited areas. To date, designated campsites have been established only at Paradise Valley (accommodating approximately 100 people in three sections), Emerald and Pear lakes (25 people per night per lake), and Bearpaw Meadow Camp area (approximately 30 people). Camping is prohibited outside the designated campsites or areas in these four locations under alternative 1 (Note: in 2013, designated camp limits were changed to apply only in Lower Paradise Valley).

The parks promote the use of established camps through ranger contacts with visitors and the publication of informational materials.

**Campsite Condition Standards** — There is currently no campsite condition standard established under alternative 1. (For information on campsite conditions and standards, see appendix A, page A-15 and A-24.)

**Element 8: Stock Use**

Figures 8a and 8b depict stock access and grazing restrictions for alternative 1. Figure 8a shows stock access and grazing restrictions in Kings Canyon National Park and can be found on pages 86/87. Figure 8b shows stock access and grazing restrictions in Sequoia National Park and can be found on pages 90/91.

***Stock Access and Travel***

*On-trail* — Stock travel is generally allowed on wilderness trails. Stock parties are allowed to travel up to 0.5 mile from trails to reach campsites.

Most maintained trails are open to stock travel (637 of 653 miles), as are 77 miles of "designated unmaintained routes" (mostly informal and abandoned trails). Some trails and routes are open to stock parties for travel only (no overnight camping), some are open to camping and grazing for walking parties with burros and llamas, but limited to travel only for parties with horses or mules, and some are closed to stock travel entirely. Approximately 598 miles of maintained and unmaintained trails would be open to camping with stock. Trails are closed to stock to provide for visitor safety, to protect areas with resource concerns, and due to popular use by day hikers. Trails or routes with restricted stock access under alternative 1 are described below.

Trails and routes open for travel only (115 miles – includes mileages to first camps):

- Alta Trails
- Baxter Pass Trail
- Big Baldy Trail
- Buena Vista Trail
- Cataract Creek Route
- Center Basin Trail (to Golden Bear Lake)
- Don Cecil Trail
- JMT along Timberline Lake
- Kearsarge Lakes Trail to Kearsarge Lakes
- Kern Canyon Overlooks

- Lake 11,092 Route (shown as Lake 11,106 on older maps)
- Lakes Trail
- Little Baldy Trail
- Martha Lake Route from 1 mile above Hell-for-Sure Junction
- Miter Basin Trail above Primrose Lake outlet stream
- Muir Grove Trail
- Redwood Canyon area trails
- Upper Sixty Lake Basin Trail
- Tokopah Falls Trail
- Wallace Creek Route to Wallace Lake above 11,200 feet in elevation
- Wright Creek Route to Wright Lakes above 11,200 feet in elevation

Trails open to travel only for parties with horses or mules; camping for walking parties with burros and llamas allowed (15 miles):

- All Mineral King Basin Trails (Monarch Lakes, Crystal Lake, Franklin Pass, Farewell Gap, White Chief, Eagle Lake, Mosquito Lakes, and Mineral Lakes Trails)

Trails open to camping by special permit (2 miles):

- Milestone Basin (closed to stock travel above 10,800 feet in elevation, with free-roaming/grazing stock allowed up to 11,200 feet in elevation)

Trails closed to all stock travel (16 miles):

- Bullfrog Lake Trail west of Kearsarge Lakes Trail
- HST from Crescent Meadow to Wolverton Cutoff
- Lower Sixty Lake Basin Trail (currently a temporary restriction)
- Marble Falls Trail
- Mount Whitney Trail – base of switchbacks to the summit
- Sawtooth Pass Trail from Monarch Lake to Columbine Lake

*Off-trail* — Stock parties are allowed to travel up to 0.5 mile from trails to reach camps. Travel more than 0.5 mile from maintained trails is allowed in four areas of the parks: on the Hockett Plateau, on the Monarch Divide including Hotel Creek, in the Roaring River drainage, and along the western side of the Kern River watershed south from the Chagoopa Plateau.

Per the 1986 SUMMP, exceptions to access limits are allowed. The 1986 SUMMP states that "trips to areas not open to off-trail travel may be allowed. Such trips may be proposed to the superintendent and would be considered on a case-by-case basis."

*Stock Grazing* — One goal of wilderness management in the parks is to allow recreational use of stock within guidelines that will protect natural resources and values, the processes that shape them, and the

quality of experience distinctive to them. Stock grazing can affect park resources by removing vegetation, trampling small animals, vegetation and underlying soils, and depositing stock urine and feces on trails, in streams, and near camps. Therefore, grazing is managed and regulated by the SUMMP, BMP, and through the Superintendent's Compendium.

Under alternative 1, grazing is managed in accordance with the 1986 SUMMP and is informed by the results of the meadow-monitoring program. Traditional methods of adjusting use levels and patterns are employed when necessary, including:

- adjusting the number of nights a given party may graze an area;
- adjusting the number of stock per party that may graze an area;
- adjusting opening dates to reflect moisture conditions, which are designed to prevent unacceptable mechanical disturbance to surface soil and vegetation; and
- temporarily closing an area to stock access or grazing.

Estimated grazing capacities for wilderness meadows have been developed using a model of biomass production and forage consumption that takes into account the elevation, soil moisture, and condition of the meadow. These capacities are used to inform grazing management, and are refined as additional information is acquired. The capacity of individual meadows and uplands to sustain grazing is informed by each meadow's vulnerability to erosion or change in hydrologic function, susceptibility to invasion by nonnative plants, habitat requirements of sensitive plants and animals, productivity and the ability to sustain herbage removal, and the requirements of unique ecological communities such as peat-accumulating wetlands.

Administrative grazing is held below the estimated capacity of park meadows and, in most areas, managed to give visitors traveling with stock priority over administrative users.

In areas that are closed to grazing but open to overnight stock use, camping is allowed. The use of certified weed-free supplemental feed is not required; however, the NPS recommends that commercial pack stations use certified weed-free feed and the NPS uses weed-free feed in its administrative operations.

The current monitoring system established by the 1986 SUMMP is employed to track use, document conditions, and provide information for preventing and mitigating impacts. The monitoring program takes into account variation in annual climate, the characteristics of specific forage areas, and the inherent abilities of different species to withstand grazing and trampling pressure. Monitoring of species composition occurs in five pairs of grazed and ungrazed meadows on a five-year rotation, and repeat-photography points are updated as time and resources allow. Monitoring of residual biomass and bare ground, initiated in 1993, occurs and the results are used to inform decisions regarding grazing management.

The following meadows are closed by the 1986 SUMMP to grazing for scientific and social value: Big Pete Meadow forested portion, Crabtree Ranger Station Meadow, Dragon Lake Meadow, Ellis Meadow, Goddard Creek Meadows, Guyot Creek Meadows west of trail, Lake South America Col Meadow, Mitchell Meadow, Rock Creek #2 Meadow, Wallace Creek Closed Meadow, Woods Lake Shoreline Meadow, and Wright Creek Closed Meadow.

The following meadows are closed by the 1986 SUMMP to grazing due to high levels of visitation and resource concerns: Charlotte Lake Upper and Lower Meadows, Dusy Basin and Rainbow Lakes, East

Lake Shoreline Meadows, Granite Lake, Hamilton Lake Basin, Kearsarge and Bullfrog Lakes Basins, Paradise Valley, Rae Lakes Basin, Seville Lake, Timberline Lake, Tom Sears Meadow, Vidette Meadow, and Woods Creek Crossing South Side Meadows.

The following meadows are closed to grazing under the superintendent's authority to enact visitor-use restrictions: Crabtree Lakes (closed to stock access and grazing above existing camp west of lowest lake), Darwin Meadow proper, Forester Lake Meadow, Kern Hot Spring Meadow, meadows within five miles of Giant Forest Museum, Milestone Creek above 11,200 feet in elevation, Sixty Lake Basin, Summit Lake Meadow, and Upper LeConte Canyon above 10,000 feet in elevation.

The following are restrictions on grazing in areas otherwise open to grazing:

- Open to grazing by walking parties with burros or llamas, closed to grazing by parties with horses or mules: Bubbs Creek below Junction Meadow, Evolution Lake to Muir Pass, Guitar Lake, and Mineral King lakes' basins
- Open to administrative use and grazing only: Hockett Pasture, JR Pasture (Roaring River), Kern Ranger Station pastures, Lackey Pasture (Roaring River), and Upper Redwood Meadow

Table 11 presents the site-specific night and/or head grazing limits on meadows in the parks.

**Table 11: Site-specific Night and/or Head Grazing Limits under Alterantive 1**

| Location | Stock Head Limit | Night Limit |
|---|---|---|
| Bubbs Creek | 20 | 1 |
| Castle Domes Meadow | 15 | 1 |
| Cement Table Meadow | 15 | 2 |
| Charlotte Creek (below drift fence) | 20 | 2 |
| Crabtree Meadow | 15<br>(larger parties consult ranger) | 14 |
| Junction Meadow (Bubbs) | 15 | 1 |
| Junction Meadow (Kern) | 15 | 1 |
| Lower Funston Meadow | 20 | 2 |
| Milestone Basin | 8* | 2* |
| Redwood Meadow | 15 | 2* |
| Scaffold Meadow | 15 | 2 |
| Shorty's Meadow | 20 | 2 |
| Upper Evolution Valley (above Evolution Meadow) | 20 | 1 |
| Upper Funston Meadow | 20 | 2 |
| Upper Rock Creek (Nathan's Meadow and above) | 20 | 2 |
| Wallace Creek Waterfall Meadow | 6* | 1* |

*Added or modified post SUMMP

*Stock-use Structures* — The parks' wilderness contains structures that facilitate stock use and protect resources. There are 52 existing hitch rails and 54 existing drift fences, pasture fences, and gates (see tables 51a and 51b starting on page 272 at the end of this chapter). Several fences listed in the 1986 SUMMP, constructed after 1986, or proposed for installation, were never built or have been removed; managers determined that these fences would not be built due to changes in visitation and management

needs. These were at Aspen Meadow, Bearpaw Meadow, Cartridge Creek, Charlotte Lake, Colby Lake, Dollar Lake, East/Middle Vidette, Franklin-Montgomery, Lower Junction Meadow, Lower Rock Creek, Lower Simpson, Lower Vidette, Pinto Lake, Screwball Camp, Sphinx Creek Junction, Upper Paradise, Upper Simpson, and Williams Meadow.

**Element 9: Administrative Structures**

Administrative facilities such as ranger stations, administrative pastures, crew camps, and research facilities are important for the administration of wilderness. Currently there are 15 ranger stations, 3 patrol cabins, 4 pastures, and approximately 25 administrative camps located in wilderness.

**Ranger Stations** — Under alternative 1, ranger stations at the following locations are maintained and staffed as funding is available (figure 4 on page 76):

- Bearpaw Meadow
- Bench Lake (platform and tent)
- Charlotte Lake
- Crabtree
- Hockett Meadow
- Kern Canyon
- LeConte Canyon
- Little Five Lakes (platform and yurt)
- McClure Meadow
- Monarch (platform and tent)
- Pear Lake
- Rae Lakes
- Roaring River
- Rock Creek
- Tyndall Creek

**Other Administrative Structures** — Three patrol cabins and a research facility are maintained at the following locations:

- Quinn (patrol cabin)
- Redwood Meadow Ranger Station (patrol cabin)
- Simpson Meadow (patrol cabin)
- Redwood Canyon Cabin (research facility)

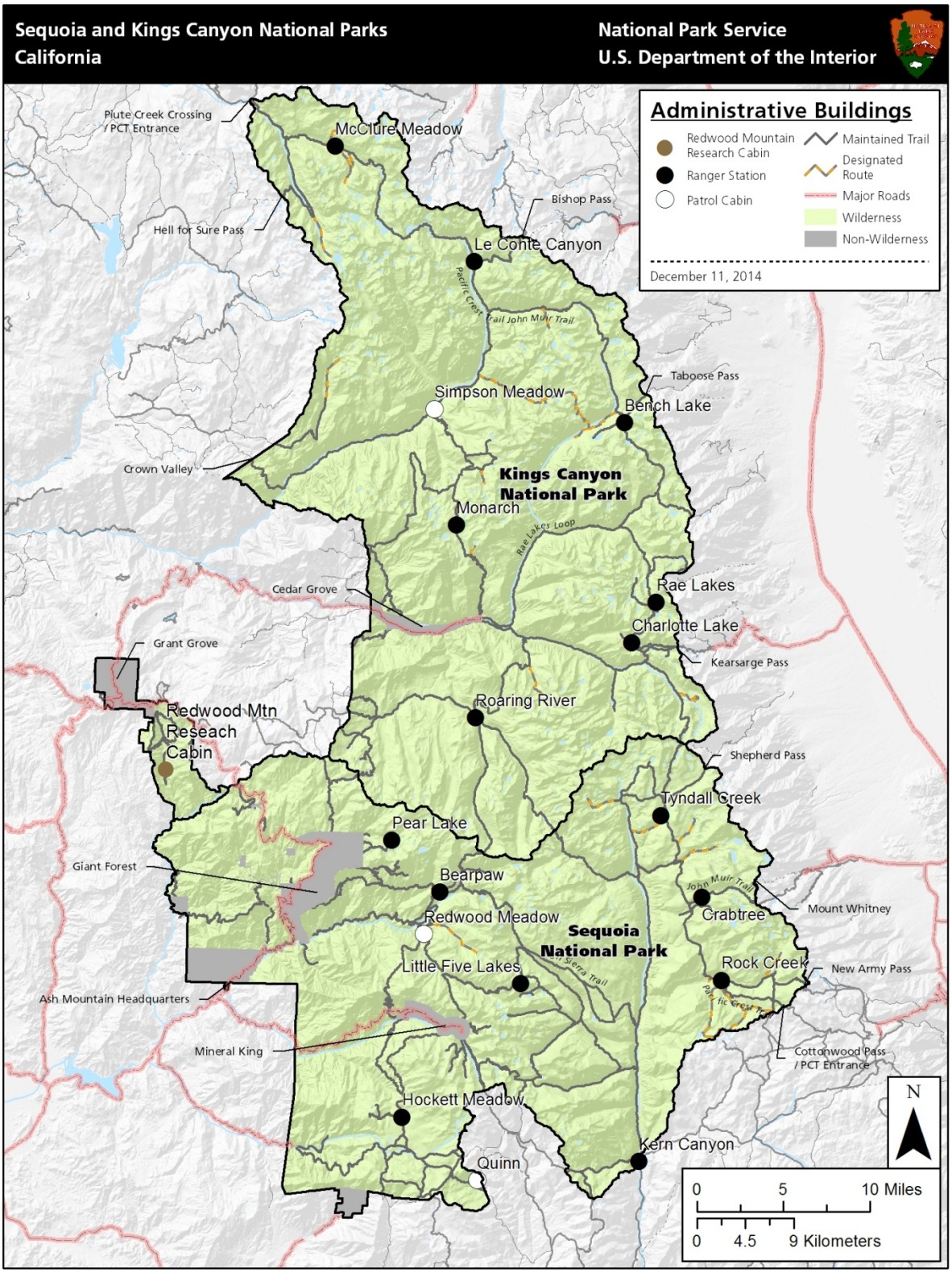



**Figure 4: Administrative Buildings in Sequoia and Kings Canyon National Parks' Wilderness**

**Pastures** — Some areas of the parks' wilderness are patrolled by mounted rangers. To maintain stock close to the patrol cabins for quick emergency response, and to reserve some grazing for the parks' stock, some of these locations have fenced pastures. Stock pastures associated with ranger stations are located at Hockett Meadow, Kern, Redwood Meadow, and Roaring River. Additional facilities include hitching rails and storage structures associated with the Hockett Meadow Ranger Station and the Quinn Patrol Cabin, and Redwood Meadow Ranger Station.

**Crew Camps** — Crew camps can be established for short- or long-term administrative purposes (e.g., enforcement/patrols, resource management/research, and trail maintenance/project activities). There are 15 established and long-term trail crew camps within Kings Canyon National Park, located at major junctions or hubs, and 10 established and long-term trail crew camps within Sequoia National Park. These camps have up to three food-storage boxes, a fire pit, and may have small tool caches.

**Element 10: Frontcountry Facilities to Support Wilderness Access and Use**

Although outside wilderness, facilities in the frontcountry that support visitor use of wilderness are considered in each alternative. Frontcountry facility locations are presented in figure 5 on the next page. These facilities include:

**Permitting Stations** — Permitting stations exist in the parks' frontcountry to provide wilderness use permits required of all visitors (on foot or with stock) remaining overnight in areas managed as wilderness. Permits are issued by the NPS or by the USFS during the quota season (Friday of Memorial Day weekend to late September) and generally self-issued during the non-quota season (late September to late May). The current permitting stations would remain in place across all alternatives.

***Kings Canyon National Park***

*Cedar Grove Pack Station* — This pack station operates under concession authority based on a contractual relationship with the parks. Private stock parties can informally arrange with Cedar Grove Pack Station to use existing facilities for holding animals and parking.

***Trailheads/Stations***

*The alternatives do not consider changes to the permitting stations at Road's End (Kings Canyon); Kings Canyon Visitor Center (Grant Grove); Lodgepole Visitor Center; Ash Mountain/Park Headquarters; and Mineral King Ranger Station. There would be no changes proposed in the WSP for the Redwood Saddle /Redwood Canyon trailhead, Dorst, and Dillonwood areas. Therefore, these facilities are not discussed further in this document.*

*Kings Canyon Visitor Center in Grant Grove* — This visitor center provides information on wilderness resources and to issue permits for the Redwood Canyon and Roaring River.

*Redwood Saddle/Redwood Canyon Trailhead* — Redwood Saddle/Canyon Trailhead includes parking and turnaround space, and a vault toilet. There is no camping at the trailhead for stock users or backpackers, and no use of the trailhead by commercial service providers.

*Road's End Permit Station and Trailheads* — This permit station for trailheads within Kings Canyon National Park operate seasonally (Note: Vehicle access to Kings Canyon proper is allowed generally between mid-April through mid-October).

***Sequoia National Park***

Ash Mountain/Park Headquarters Area — The Wilderness Office and Foothills Visitor Center provide information on wilderness resources and issue permits for area trailheads (Middle, North, and South Fork Kaweah areas, and Mineral King in winter).

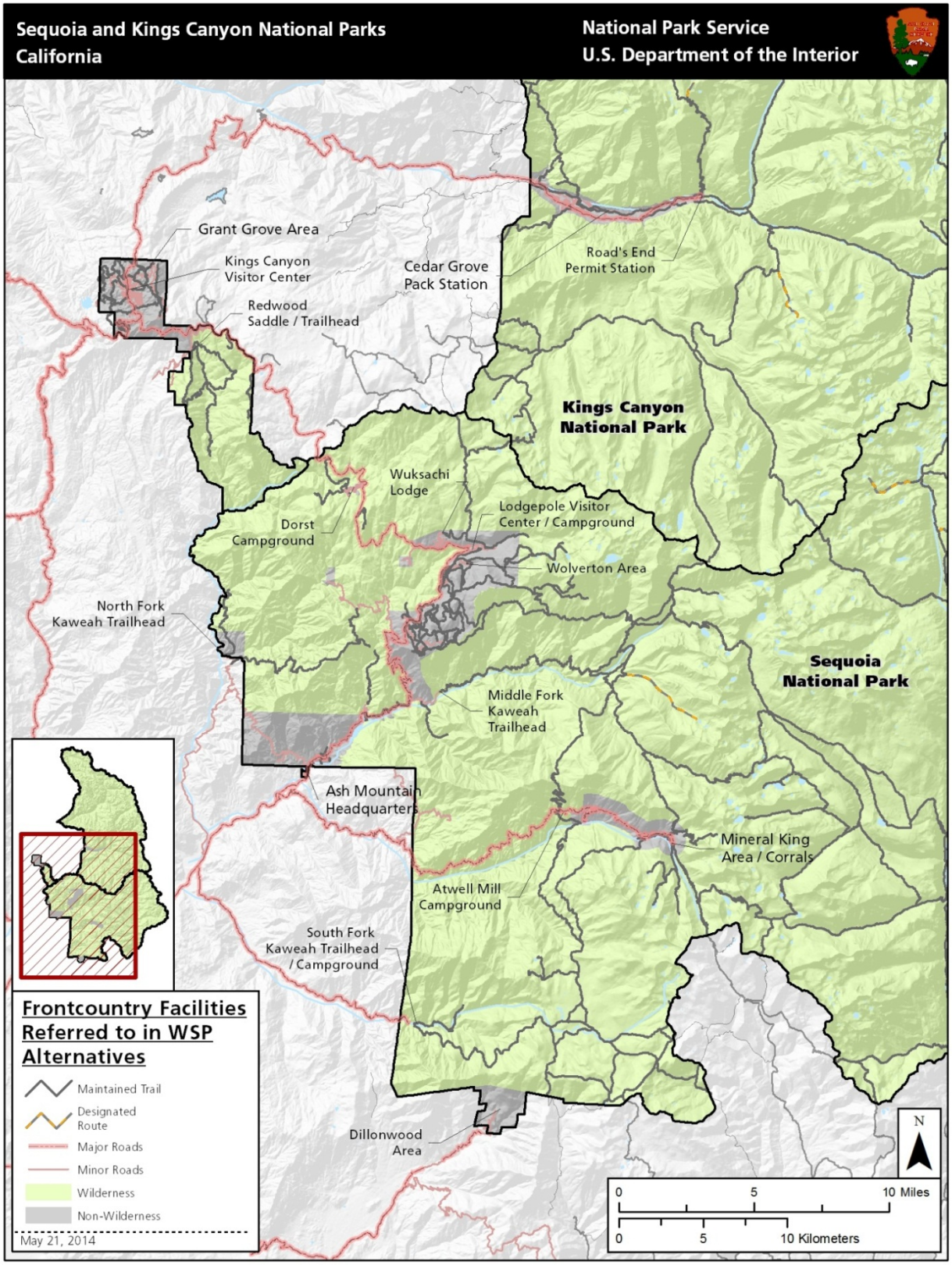



**Figure 5: Map of Frontcountry Facilities Referred to in WSP Alternatives**

*Dillonwood Area* — Road conditions in the Dillonwood area, which was added to the parks in 2001, limit vehicular access. Access is by foot or stock from the parks' boundary. It is anticipated that when funding is available, a management plan specific to Dillonwood would be developed.

*Dorst Area* — Dorst includes a campground and trailhead, but is not a starting point for overnight wilderness travel. Dorst, and nearby Halstead and Cabin Creek, are not considered for alternative locations for a pack station due to budget limitations and the lack of trails going into wilderness from these locations.

*Lodgepole Visitor Center (Permit Station) and Area Trailheads* — Lodgepole facilities include a large parking lot with a turnaround for stock users accessing Twin Lakes Trail and Old Lodgepole Road Trail to Wolverton. Backpacker campsites could be added to the area, per the GMP. The Lodgepole Visitor Center issues wilderness permits for Lodgepole, Wolverton, and Giant Forest Trailheads. The summer shuttle system operates in the area and provides access to some wilderness trailheads.

*Middle Fork Kaweah Trailhead* — This trailhead on the Middle Fork of the Kaweah River is near Potwisha and Buckeye Flat campgrounds, neither of which provides overnight camping for stock. There is a small dirt parking area with food-storage boxes.

*Mineral King Area* (Atwell Mill and Cold Springs campgrounds, Mineral King Ranger Station, administrative corrals, and trailheads) — Mineral King has public campgrounds at Atwell Mill and Cold Springs. There is a large dirt parking lot with signs and food-storage boxes at the Atwell-Hockett Trailhead for stock users and backpackers. There are currently no amenities for camping with stock at either campground. The GMP authorizes closing the Atwell Mill Campground and the establishment of trailhead campsites for backpackers.

The Mineral King administrative corrals, in east Mineral King Valley, include buildings, corrals, and stock-support equipment. Existing facilities are used for park administrative purposes, and occasionally by holders of commercial use authorizations (CUAs) and private users to stage trips.

*North Fork Kaweah Trailhead* — The area includes a small dirt parking lot at the North Fork Kaweah Trailhead. A primitive campground authorized by the GMP may be added.

*South Fork Kaweah Campground and Trailhead* — The South Fork Kaweah Trailhead facilities include a small parking area at the trailhead and a small rustic campground (10 sites, nonpotable water, vault toilets, and food-storage boxes).

*Wolverton Area (Trailheads and Administrative Corrals)* — The Wolverton area facilities include a parking lot, trailhead, and administrative stock facilities. Existing facilities are used by commercial service providers to stage resupply trips for the Bearpaw Meadow High Sierra Camp.

### Element 11: Commercial Services in Wilderness

Commercial services are a means for the NPS to provide opportunities for visitors to engage in activities that are consistent with the parks' objectives for visitor use. For the purposes of the WSP/FEIS, a commercial service is one that relates to or is connected with commerce wherein a service is performed for another person or entity, and where the primary purpose is the experience of wilderness through support and where the primary effect is that the wilderness experience is guided and shaped through the use of support services provided for a fee or charge. It may be operated by for-profit or non-profit entities. Commercial services must meet standards expressed in the Wilderness Act (1964) and the Concessions

Management Improvement Act (1998). The Wilderness Act limits commercial services to the type and amount of services that are necessary for activities that are proper for realizing the public purposes of wilderness (i.e. recreational, scenic, scientific, educational, conservation, and historic use per the Wilderness Act §4(b)). The Concessions Management Improvement Act limits commercial activity in parks to those that are necessary and appropriate for public use and enjoyment.

Commercial service levels and types are managed to provide high quality visitor experiences while protecting natural, cultural, and scenic resources. Commercial services may be authorized through concession contracts, CUAs, cooperative agreements, and special use permits.

Under the no-action alternative, CUAs are issued to the extent necessary to support hiking and backpacking services, stock services, mountaineering, ski mountaineering, snowshoe and cross-country ski tours, and photography. To date no CUAs have been issued specifically for climbing, fishing, porters, or river running. Table 12 describes the existing levels of commercial services. See also appendix B.

**Table 12: Existing Amounts of Visitor Use and Commercial Services (2010–2013)**

| Activities | Current Visitor Use Levels Supported by Commercial Services | |
|---|---|---|
| **Total Visitor-use Days** – private and supported by commercial services (this does not take into account use by PCT and JMT visitors that are not recorded by the parks' wilderness permit system, or day-use visitors). | Current visitor-use days from overnight use:<br>109,815 high<br>108,167 average | Visitor-use days – All Use<br>7,474 high<br>6,550 average |
| **Non-stock Activities**<br>Backpacking and hiking trips<br>Overnight camping – gear support<br>Mountaineering (summer and winter)<br>Oversnow travel (ski and snowshoe touring and winter camping – winter only, Nov 15–Apr 15. | Wilderness-wide: activities that are supported by non-stock based commercial services. | Visitor-use days – Non Stock<br>4,675 high<br>4,063 average |
| | Mount Whitney Management Area: activities that are supported by non-stock-based commercial services. | Visitor-use days – Non Stock:<br>1,346 high<br>1,062 average |
| **Stock-based Activities**<br>Stock trips – riding, packing, day rides, and overnight camping with stock.<br>Overnight Camping – gear support, including stock spot and dunnage | Wilderness-wide: activities that are supported by stock-based commercial services. | Visitor-use days – Stock-based:<br>3,110 high<br>2,487 average |
| | Mount Whitney Management Area: activities that are supported by stock-based commercial services. | Visitor-use days – Stock-based:<br>635 high<br>521 average |

The Bearpaw Meadow High Sierra Camp was established shortly after the completion of the adjacent HST in the mid-1930s. Currently the camp consists of canvas tents on wooden platforms (six for guest lodging, one for kitchen/dining, three for restroom/showers, and five for employee quarters), a log storage building (historic former ranger station), and utility infrastructure (water and wastewater systems). It has been in almost continuous summertime operation as a rustic lodging and dining facility since its inception. This concession-operated facility is operated as a commercial enterprise by a contracted concession within a designated potential wilderness addition (DPWA) per the California Wilderness Act (1984) and its accompanying *House of Representatives Committee Report* 98-40 (1983).

**Current Commercial Service Days for the Bearpaw Meadow High Sierra Camp**
(from 7 years of data – 2006 through 2012)

High – 1,650
Average – 1,497

Pear Lake Ski Hut was constructed between 1939 and 1941 by the Civilian Conservation Corps as a remote base for winter recreation, e.g., cross-country skiing. The structure has been staffed as a summertime ranger station since the early 1970s, and is on the National Register of Historic Places (National Register). The Pear Lake Ski Hut is operated as a winter overnight lodging facility by a cooperating association; despite the association's status as a nonprofit organization, the service provided is considered commercial due to a fee being charged for the service. The California Wilderness Act of 1984 and its accompanying House of Representatives Committee Report 98-40 (1983) provide for the continued winter operation of the Pear Lake Ski Hut, unless this non-conforming use is deemed to have unacceptable wilderness impacts. The area is categorized as a DPWA based on the non-conforming use of a commercial enterprise (winter ski hut operation) in wilderness.

**Current Commercial Service Days for the** Pear Lake Ski Hut
(From 5 years of data – 2008/09 through 2012/13)

High – 1,286
Average – 1,220

On the following pages, figure 6 depicts the current wilderness trail system, figure 7 depicts campfire regulations for alternative 1, and figures 8a and 8b depict stock access and grazing regulations for alternative 1.

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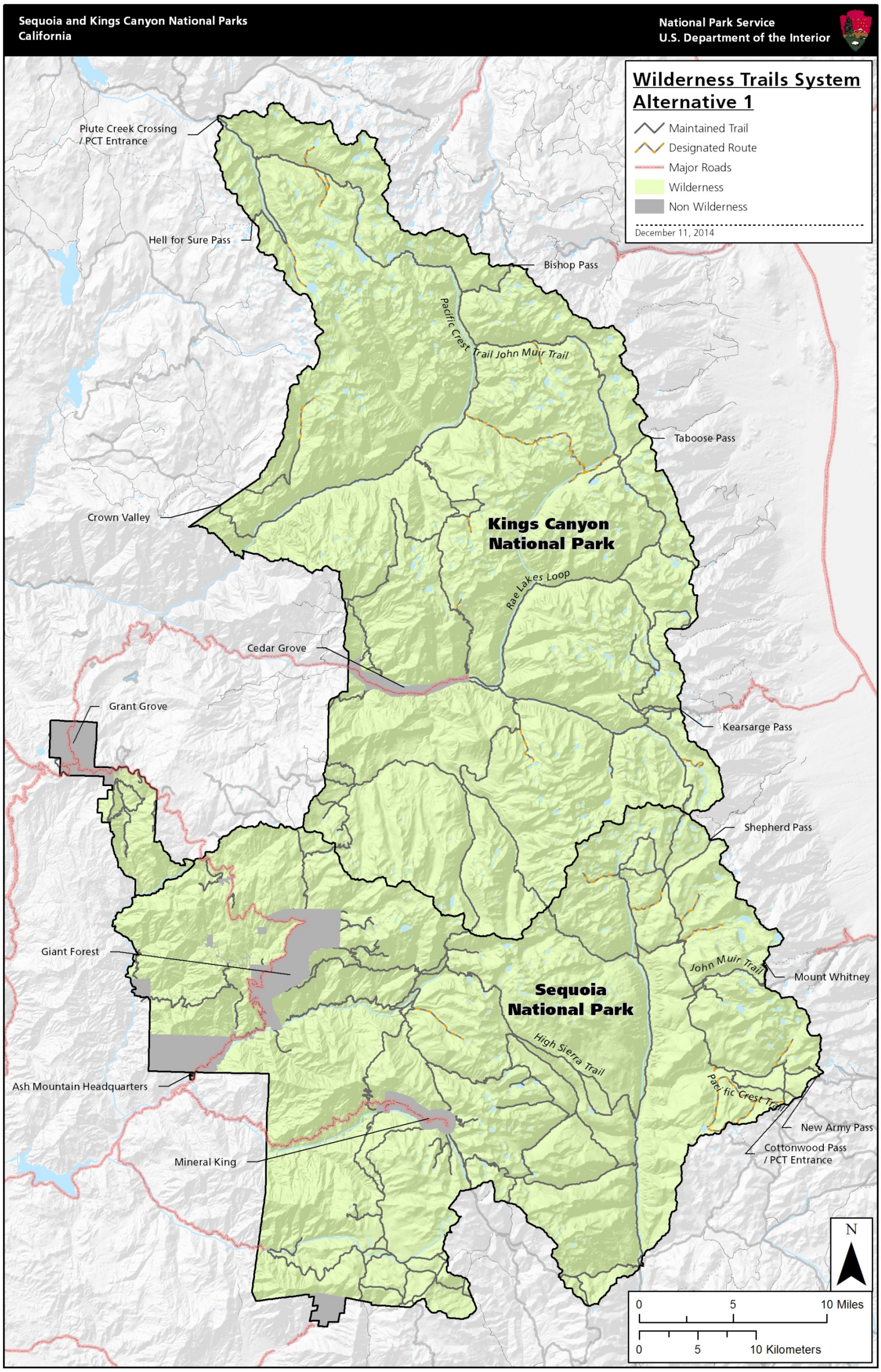


**Figure 6: Wilderness Trails System – Alternative 1 (No-action / Status Quo)**

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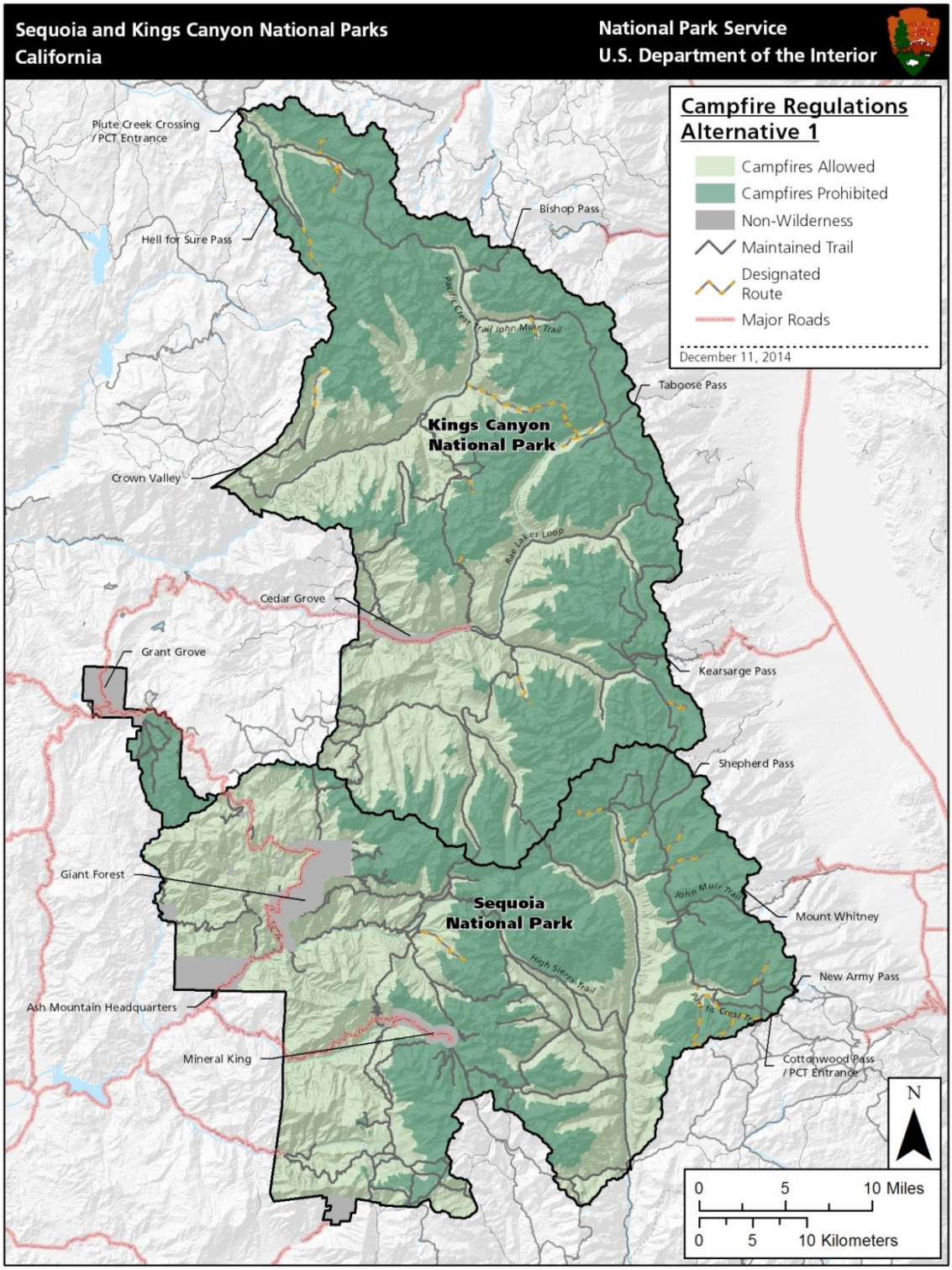
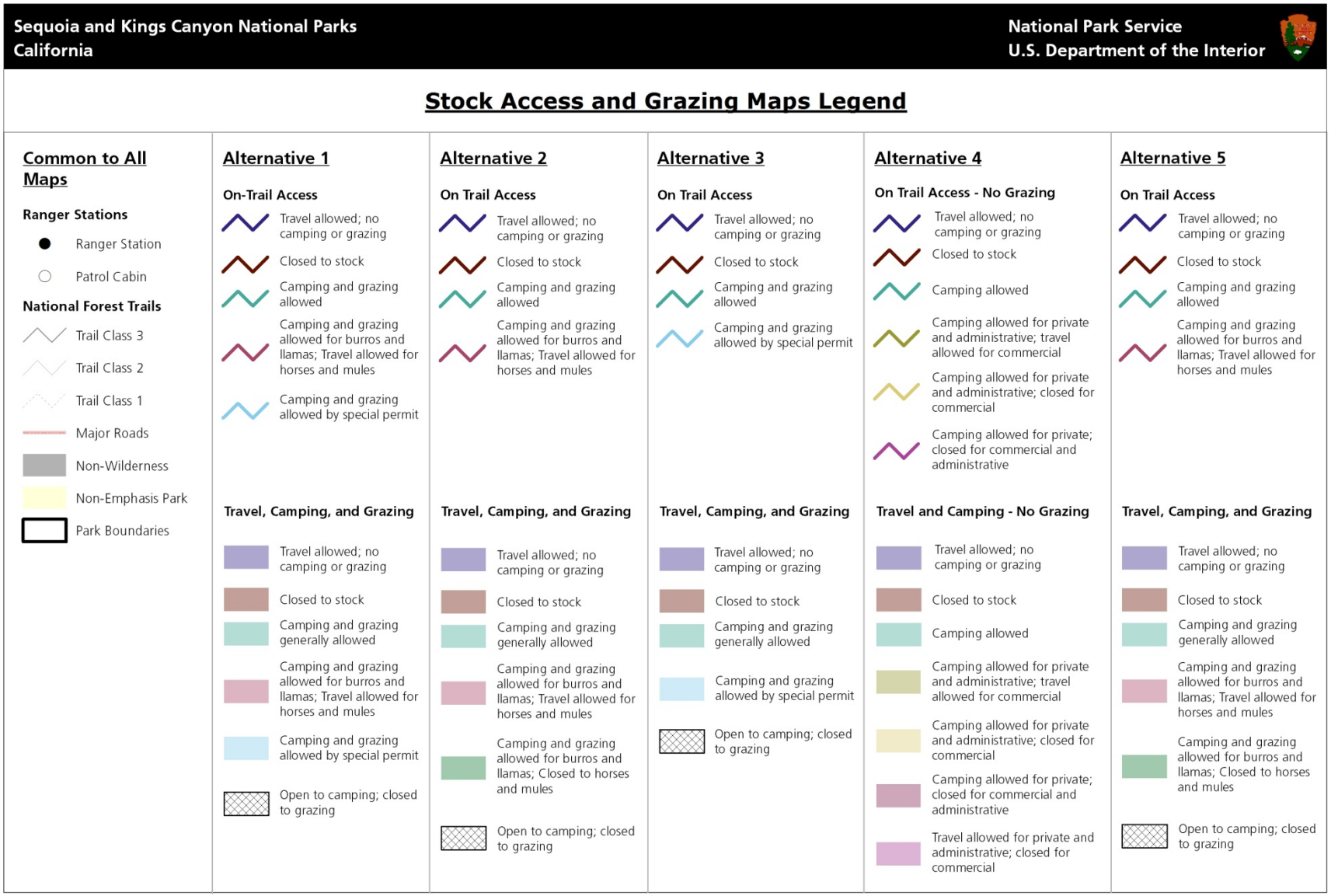



**Figure 7: Campfire Regulations – Alternative 1 (No-action / Status Quo)**

No campfires above 10,000 feet in Kings Canyon National Park,
above 10,400 feet in the Kern River drainage, and 9,000 feet in the Kaweah River drainage.
(see figure 23, page 297, for drainages)




**Legend to Accompany Figure 8a: Stock Access and Grazing – Alternative 1 (No-action / Status Quo), Kings Canyon National Park**

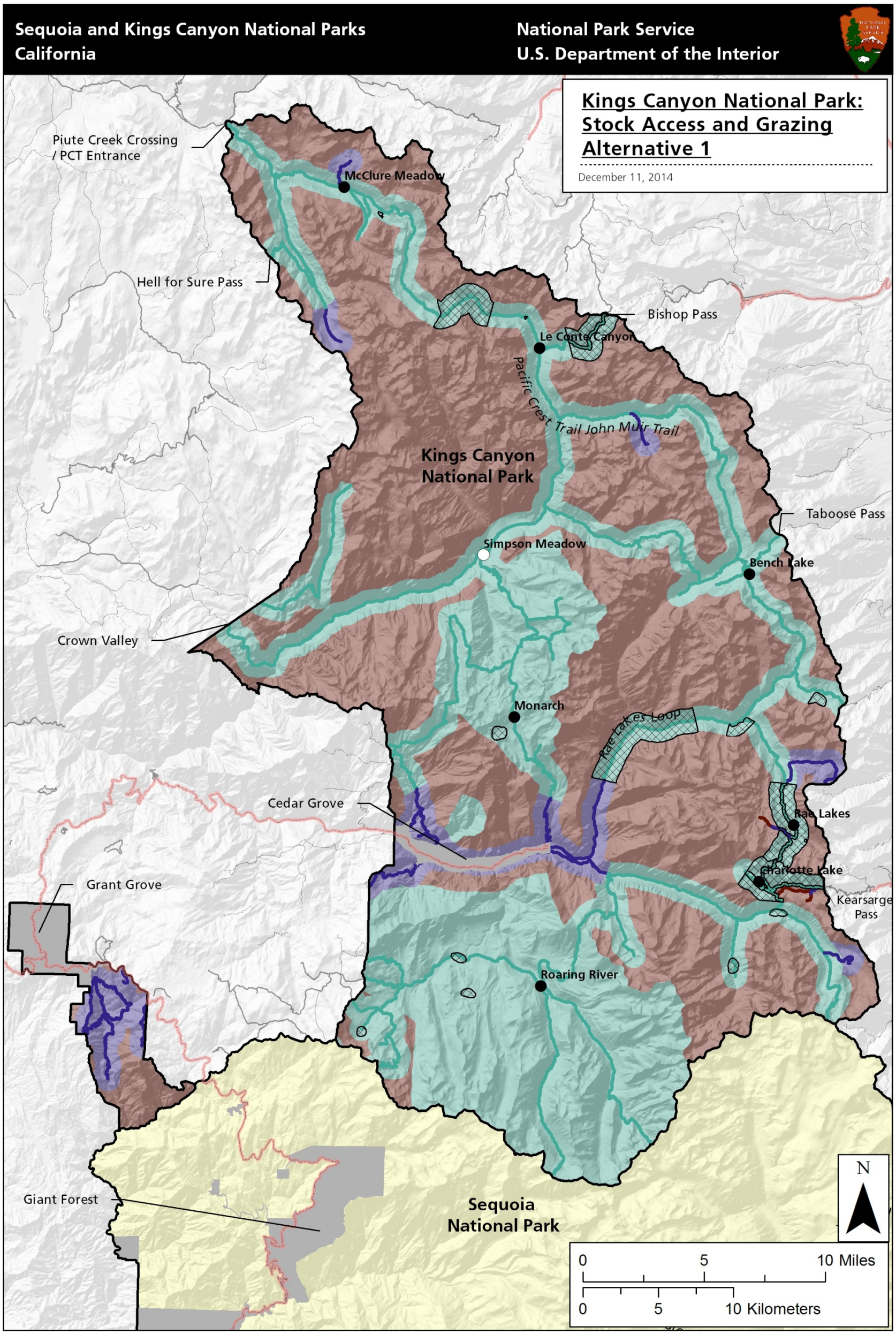



**Figure 8a: Stock Access and Grazing – Alternative 1 (No-action / Status Quo), Kings Canyon National Park**

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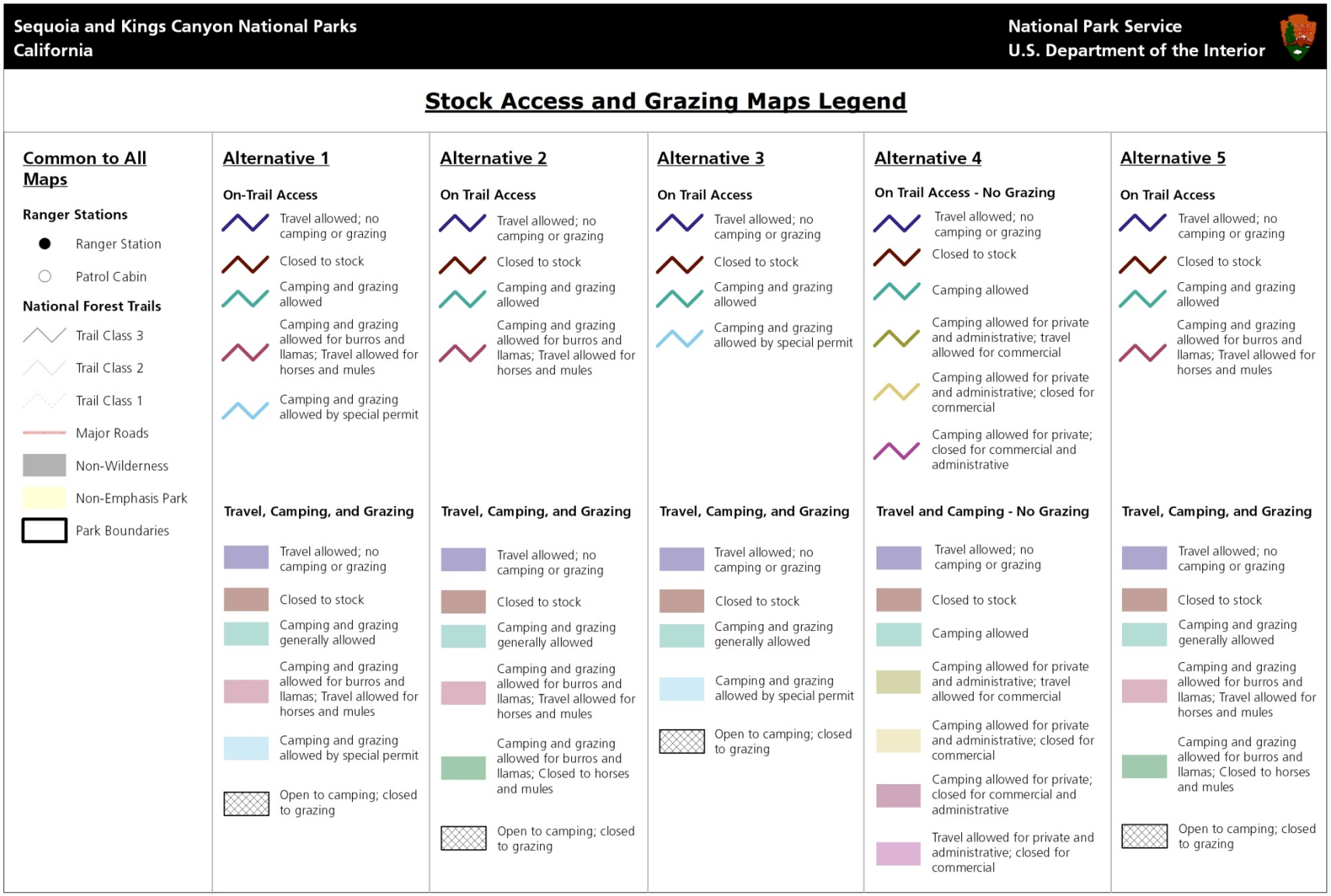


**Legend to Accompany Figure 8b: Stock Access and Grazing – Alternative 1 (No-action / Status Quo), Sequoia National Park**

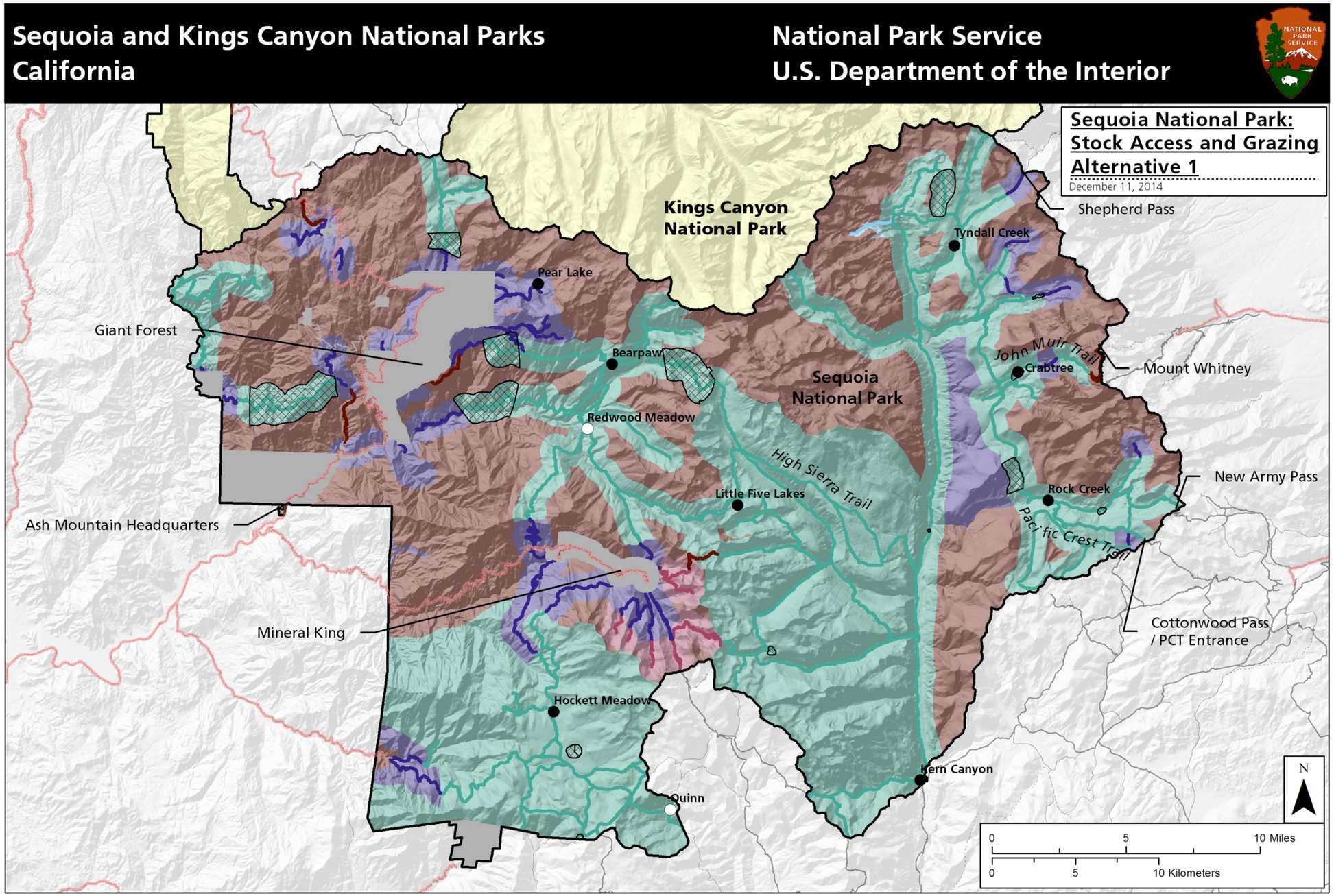


**Figure 8b: Stock Access and Grazing – Alternative 1 (No-action / Status Quo), Sequoia National Park**

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# ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

This section identifies actions that would be implemented through the WSP regardless of which alternative is selected.

## WILDERNESS EDUCATION AND INFORMATION

The parks would implement a strategy to educate wilderness visitors, park staff, and the general public in order to:

- protect wilderness lands and characteristics;
- enhance public and employee understanding of and commitment to wilderness stewardship;
- increase understanding of the range of legally appropriate uses of wilderness;
- reduce conflicts between wilderness visitors;
- increase the visitors' ability to manage risk as an expected aspect of wilderness use; and
- encourage connection to and appreciation of wilderness.

To achieve these goals, all divisions of the parks would take the following actions:

- Identify the audiences they serve who are in need of wilderness information, including: internal staff, wilderness visitors, commercial wilderness users, researchers, neighboring agencies, partners, and the general public.
- Identify the messages their audiences need.
- Develop tools including training sessions, reference materials, and public information needed to ensure that complete, correct, welcoming information is shared with visitors.
- Build staff awareness of and commitment to the wilderness mission as part of the parks' mission.
- Develop trip-planning information for wilderness visitors to help generate realistic expectations regarding the range of uses, users, and conditions that may be encountered during a trip.
- Develop educational information about minimum impact standards for wilderness visitors, researchers, commercial users, partners, and others.
- Make information available online, in visitor centers, at park permit stations, and to neighboring agencies involved in issuing permits.
- Develop age appropriate interpretive and educational outreach materials regarding wilderness.
- Review and update all existing materials to reflect changes made by the WSP/FEIS and to explain new guidelines and systems, e.g., trail classes and wilderness signage.

## AVIATION (COMMERCIAL, MILITARY, AND PRIVATE)

The parks have attempted, by multiple means over time, to determine if commercial air tours are occurring over the parks, and have found no evidence of their existence. Under the National Parks Air Tour Management Act (NPATMA) of 2000, an Air Tour Management Plan needs to be established "for any national park or tribal land for which such a plan is not in effect whenever a person applies for authority to conduct commercial air tour operation over the park." With the passage of the NPATMA, two potential operators submitted their names for future consideration. At that time, the Federal Aviation

Administration (FAA) established an Interim Operating Authority for a maximum of 18 tours per year over the parks.

The FAA Modernization and Reform Act of 2012 (Pub. L. 112-95) amended various provisions of NPATMA. One provision exempted national park units with 50 or fewer annual commercial air tour operations from the requirements of NPATMA. Since there are fewer than 50 annual commercial air tour operations being conducted over the parks, and the NPS is not withdrawing the exemption, the parks are exempt from NPATMA. As a result of these changes, and because air tours are disruptive to the national park and wilderness experience of the visiting public, the parks are seeking to be permanently removed from the FAA list of national park units where air tours are allowed. The desired condition for the parks' wilderness is to be free of commercial air tours due to the disruption of the wilderness experience of park visitors caused by aircraft. NPS Director's Order 41: *Wilderness Stewardship*, section 7.3 states "Commercial air tours are inconsistent with preservation of wilderness character." The Pacific West Region of the NPS is finalizing a guiding policy on this issue through a Wilderness Air Tour Noise Assessment Strategy. The goal of the Noise Assessment Strategy is to "develop a consistent approach for protecting wilderness areas from air tour noise impacts" in the Pacific West Region. The Noise Assessment Strategy directs parks to apply the principle of nondegradation to wilderness management, and to measure each wilderness area's condition "against its own unimpaired standard." By virtue of having no air tours, currently or in the recent past, the parks are classified in the Noise Assessment Strategy as a Tier 1 NPS unit. Subsequently, as an outcome of this WSP/FEIS, air tours over the parks are determined to be counter to the preservation of wilderness character, and the parks will continue to pursue means for their exclusion.

Approximately 95% of the airspace over the parks is in Military Operations Areas or part of the R-2508 Military Special Use Airspace Complex. This large expanse of restricted airspace is of extremely high value to the armed forces for testing and training purposes. Because so much of the parks are overlain with military airspace and thus subject to its restrictions, the ability of general and commercial aviation to operate in the area is constrained. The parks have successfully worked with the military to reduce wilderness impacts, and will continue to work cooperatively with regional and national military leadership to ensure that military aviation operations are minimally disruptive to the experience of wilderness visitors.

**Taking a core sample from a wilderness meadow for a soil survey**

Private aircraft use would continue to be managed by the FAA, but the NPS will continue to work cooperatively with the FAA to resolve problems. No airstrips will be constructed in the parks under this plan.

## RESEARCH

Sequoia and Kings Canyon National Parks are recognized for being at the forefront of advancing scientific research and the integration of knowledge gained from scientific inquiry into the management of wilderness resources. Research in the parks includes studies, inventories, and monitoring

conducted by NPS staff as well as permitted research performed by external scientists from other federal agencies, state and local governments, universities, and non-profit organizations. Over the past three years, 73% of the parks' permitted research included activities in wilderness. This research covers a wide range of disciplines. The most frequent topics for research in wilderness in the past three years were vascular plants/plant communities, herpetology (amphibians and reptiles), geology, cave/karst, invertebrates, and fire (behavior, ecology, and effects).

NPS Management Policies 2006 includes many references to research and permitted research in particular. Some of these policies describe the need for current scientific understanding for stewardship that underlies the rationale for research in the parks, while other references describe the policy for reviewing proposals to conduct research in the parks and parks' wilderness. For a listing of the related policies, see "Appendix P: Permitted Research Program and Process."

The WSP would support the continuation of relevant scientific research in wilderness, using methods that preserve wilderness character. Scientific investigations would continue to be conducted in wilderness to enable the NPS to meet its mission requirements and the ecological, geological, scientific, conservation, and historic purposes of the Wilderness Act. Minimum requirements analyses will be conducted to determine whether each proposed project is administratively necessary and, if it is, to select the minimum tools.

## ADMINISTRATIVE COMMUNICATIONS IN WILDERNESS

To administer the large wilderness areas of the parks and provide for employee and public safety, radio repeaters exist in strategic and remote locations and need to be maintained. It is necessary to provide scheduled maintenance and upgrades to these facilities, and due to their remote and difficult to access locations this is often done with the assistance of a helicopter. The NPS would review the continued use and maintenance of the existing communication system (e.g., radio repeaters) in wilderness for the purposes of administering wilderness through the minimum requirements analysis (MRA) process. The parks' wilderness staff requires effective radio communication systems to provide resource protection actions, respond to emergency services, communicate updated information to the frontcountry about trail and other wilderness conditions for the purpose of educating wilderness visitors, and promote the safety of wilderness staff. As future technologies are developed, the existing structures would be considered for replacement, with replacement outside of wilderness preferred. If structures are able to be removed, the installation sites would be restored to natural conditions.

## ADMINISTRATIVE ACTIVITIES IN WILDERNESS

Activities necessary for the administration of wilderness (e.g., ranger patrols and operations, stock-supported activities, maintenance, and resource management activities, etc.) would continue to occur in wilderness. If actions propose a 4(c) prohibited use or have the potential to adversely affect wilderness resources, the actions would be evaluated through a MRA process (appendix I).

Administrative use of helicopters would continue to be authorized as needed for the purposes of emergency operations involving the health or safety of persons in wilderness, such as search and rescue operations.

## TREE HAZARD MANAGEMENT

Removing hazard trees in wilderness is not a normal or desirable activity, but may be allowed under certain circumstances after a MRA to determine that the actions are appropriate in wilderness.

## TRAILS MANAGEMENT PLAN

A network of trails would continue to be maintained in parks' wilderness. A Trail Management and Classification System (appendix K), based on adaptation of elements of the USFS Trail Management Handbook, has been developed as a component of the WSP. The main principles borrowed from the USFS Trail Management Handbook are trail class and designed use. Trail class describes the level of development and expected recreational experience for a trail segment, and designed use describes the modes of travel for which the trail is designed and maintained (see summary tables 47a through 47f starting on page 246 at the end of this chapter). The Trail Management Plan explains the guiding principles of trail management at Sequoia and Kings Canyon National Parks, describes current and desired conditions for the trail system, describes some programmatic methods used in trail management at the parks, and lists some significant actions that will need to be taken to achieve the desired conditions of the WSP. Notably, the no-action alternative includes a category of designated unmaintained routes open to stock travel. Under all action alternatives, each of these routes would be adopted into the trail system as Class 1 or Class 2 trails open to stock use, or they would be abandoned and landscape restoration would be considered for the remaining traces of abandoned trails. The Trail Management Plan includes a list of the trail class and designed use for each trail segment in wilderness for the preferred alternative.

***Definition of Key Terms – Trail Classes***

***Class 3*** *– Developed. These trails require the least self-reliance, and provide opportunities for primitive recreation to people needing or seeking less challenging travel in wilderness.*

***Class 2*** *– Moderately developed. These trails are typically more challenging to travel and provide access to less-visited areas of the park, providing opportunities for primitive recreation to people who are seeking more challenge and/or solitude.*

***Class 1*** *– Minimally developed. These trails provide for the highest level of on-trail challenge, the greatest opportunities for solitude, and the most self-reliant type of trail-based recreation.*

Trail signs provide important information regarding navigation, allowable use, and other information to wilderness visitors. Under all action alternatives the amount and type of trail signs would be appropriate to the trail class, and the NPS would evaluate options for sign design to ensure consistency with wilderness character and sustainability. Regulatory and informational signs would be appropriate to the trail class and no new memorials or associated signs would be allowed, pursuant to 36 CFR 2.62. Existing memorials and signs would be evaluated on a case-by-case basis to determine if they should be removed.

## WINTER USE

Opportunities for winter travel and recreation abound in the parks. The winter use season extends from November through mid-May. A wide range of activities, from one-day snowshoe touring to technical and difficult ski-mountaineering and ice climbing can be experienced. Due to the high-elevation, demanding terrain and potentially extreme weather of the parks' wilderness, winter activities can be challenging and hazardous for the inexperienced user. However, users of the winter environment will find the quiet, solitude, and beauty of the parks' wilderness extraordinary and inspiring.

Winter activities include hiking in snow free areas (generally below 5,000 feet), cross-country skiing, snowshoeing, snowboarding, ice climbing, mountaineering, and under certain conditions, ice-skating. Use of mechanical or motorized over-snow transport (e.g., snowmobiles and bicycles) and dog sledding are prohibited, but human-drawn sleds are permitted.

Winter weather and trail/route conditions can change rapidly in the upper elevations of the parks. Sudden storms with extended and heavy snowfall, high winds, cold temperatures, and avalanche potential are common major threats. Users should be prepared for extreme conditions at any time. Park staff will provide the best available information on known conditions and winter safety.

Travel can occur along trails or routes in snow-free areas or as less-restricted point-to-point travel in snow-covered areas. Trails are generally not maintained during the winter months, even in snow-free areas. Many routes that have been historically traversed may lead into high avalanche danger areas and should only be attempted by experienced and properly equipped winter users.

**An interpretive ranger and visitors on a snowshoe walk**

Regardless of which alternative is selected for the WSP, the following conditions will apply to winter use:

- Winter travel and camping would be allowed in wilderness and would require a self-issue wilderness permit. These are obtained at various ranger stations/public contact centers nearest the trailhead being used. Due to the low levels of winter use, no trailhead quotas would be applied in the winter.
- Party size for overnight winter use would be 15, whether traveling on-trail (snow free areas) or off-trail.
- As in summer, camping would only be permitted if parties travel more than one mile from roads or developed areas. Summer first-camp limitations would apply in snow-free areas (see tables 8 and 9 on pages 68 and 69).
- Overnight camping limits would be those of the adopted alternative. Site specific area night limits would apply year-round.
- Campfires would be permitted in winter (unless alternative 4 is adopted), with only dead and down wood to be burned. Restrictions on campfires would be the same in winter as in summer.
- Proper food storage would be required, though there would be no portable container requirements in winter.
- Pack out solid human waste. In lieu of packing it out, cover and disguise human waste deep in snow away from travel routes and at least 200 feet (70 adult steps) from water sources.
- Pack out toilet paper.
- Overall trip camping/night limits would be those of the adopted alternative. There would be no exceptions to night limits for specific areas in winter.
- Stock use would be allowed in those areas that are passable to stock. Summer restrictions on use would apply.
- Commercial services would be allowed for those activities and to the limits as defined in "Appendix B: Extent Necessary Determination: An Analysis to Determine the Proper Types and Levels of Commercial Services in the Wilderness of Sequoia and Kings Canyon National Parks" for the adopted alternative.

## CLIMBING

The NPS recognizes climbing as a legitimate and appropriate activity for realizing unconfined and self-reliant recreational opportunities in wilderness. Aspects of climbing may affect wilderness character, including the qualities of natural, undeveloped, and opportunities for solitude. Climbing management in National Park wilderness is directly guided by relevant NPS Management Policies, Director's Orders, and reference manuals. The U.S. Code of Federal Regulations and the parks' Superintendent's Compendium also provide indirect and direct management control of climbing and related activities. Director's Order #41: Wilderness Stewardship provides specific guidance on the management of climbing in wilderness. A Climbing Management Strategy has been developed as part of this WSP and is included as appendix J.

The following objectives will apply under all alternatives for climbing management in the parks' wilderness:

- Provide opportunities for the pursuit of the traditional activity of climbing in the park's wilderness.
- Ensure that climbing activities do not unacceptably impact wilderness character or resources.
- Emphasize clean climbing as the proper method to realize the benefits of climbing in wilderness.
- Promote strategies that "will address ways to control, and in some cases reduce, the number of fixed anchors to protect the parks' wilderness resources or to preserve the 'untrammeled,' 'undeveloped,' and 'outstanding opportunities for solitude' qualities of the park's wilderness character."
- Work cooperatively with climbers and the climbing community to advance the practices of responsible climbing in wilderness.
- Provide education to the public on responsible climbing practices in wilderness.

### Summit Registers

More than 170 summit (or peak) registers exist in these parks. They generally consist of a sealable weather-resistant container (e.g., metal, plastic, or glass) holding a small notebook in which people record dates and details of their climbs. Most registers were placed many years ago; these have served on occasion as a historical record of climbing in the Sierra Nevada, and have even aided in search and rescue efforts. The Sierra Peaks Section of the Sierra Club has inventoried and maintained these registers for many years and has worked with the Bancroft Library at University of California, Berkeley to document and preserve information from the registers.

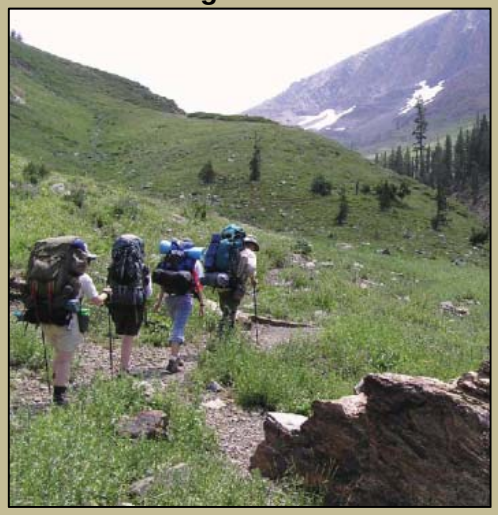
Some summit registers have historical value; the registers are also viewed as intrusions on the undeveloped quality of wilderness by some visitors. These parks recognize that a limited number of registers is compatible with wilderness character, provided they are in appropriate locations, of appropriate size and construction, and are well maintained. It is a desired condition of this WSP/FEIS to reduce developments and installations in wilderness, therefore, these parks will work toward reducing the number of registers and will not permit placement of new registers. In the near future, the parks will pursue the development of a general agreement (e.g., Memorandum of Understanding) between the NPS and the Sierra Peaks Section of the Sierra Club, which would determine locations, maintenance standards, and other conditions under which registers could remain.

# ALTERNATIVE 2: PROTECT WILDERNESS CHARACTER BY IMPLEMENTING SITE-SPECIFIC ACTIONS (NPS PREFERRED ALTERNATIVE)

## OVERVIEW

The overarching idea behind alternative 2 is that the WSP would incorporate much of the current management strategies and tools used by the parks to protect wilderness. Rather than imposing restrictions on a broad scale, this alternative would evaluate conditions in specific areas and mitigate impacts through targeted actions. The goal is to encourage wilderness use and minimize restrictions while preserving wilderness character.

**Alternative 2 General Concept: Focus on preserving wilderness character by adjusting management in targeted areas.**



This alternative recognizes that there is variation in visitor-use levels throughout the wilderness: day use (close to frontcountry), popular overnight areas (e.g., HST, PCT, and Rae Lakes Loop), and less-visited areas (e.g., the Middle Fork of the Kings, the Hockett Plateau, and off-trail areas). It further recognizes that, under current management, prevailing projected visitor-use levels pose few threats to wilderness character in the less-popular or less-visited areas.

Alternative 2 acknowledges, however, that there are some challenges in the most popular areas and in areas with sensitive resources that can be mitigated through targeted improvements in management.

As with current management, this alternative would protect wilderness character and resource values while providing for a range of visitor opportunities but would add some limits in specific popular and sensitive resource areas to improve wilderness character.

For example, overall use would be allowed up to the current trailhead quotas; however, quotas could be reduced on specific busy trails and/or destination quotas could be applied. This alternative allows for future reductions in quotas if conditions warrant.

Some popular areas would have additional restrictions (e.g., closing additional meadows along the JMT and HST to grazing), but less popular areas would have some restrictions eased (e.g., allowing campfires in specific areas, increased night limits, etc.). Education would be essential to inform visitors of where they could expect fewer encounters and how to practice Leave No Trace© travel and camping techniques in wilderness.

The most popular areas where concerns regarding visitation levels exist include Bishop Pass (Dusy Basin), Bubbs Creek (Rae Lakes Loop), Cottonwood Lakes / New Army Pass (Mount Whitney and Mount Langley), Cottonwood Pass (Mount Whitney), HST (from Crescent Meadow and Wolverton), Lakes Trail (Emerald and Pear lakes), Sawtooth Trail (Monarch Lakes), and Woods Creek (Rae Lakes Loop). Lamarck Col (Darwin Canyon), while not busy compared to the major trails, may have increasing use and is a sensitive area. Table 23 on page 130 summarizes the site-specific management actions proposed for these areas under alternative 2.

Visitors traveling with stock would continue to have access to most trails in the parks, with some trails reserved for hiking use only. The combined length of trails open to hiking or backpacking traffic only (i.e., closed to stock) would increase by approximately 25 miles over current conditions. Stock access and grazing would be constrained primarily by ecological parameters, with a limited number of new restrictions adopted to provide for visitor safety and to accommodate social values (e.g., scenic and aesthetic values). Grazing would be managed to optimize protection of natural and cultural resources while allowing visitors traveling with stock access to forage for their animals. Recognizing that the opportunity to observe and experience ungrazed meadows is of value to many park visitors, a selection of meadows along popular travel routes would be closed to grazing.

To meet the objectives of this alternative, commercial services would be retained at levels similar to alternative 1 (no-action / status quo) in most locations. Commercial services would be reduced in the most frequently visited area of the parks' wilderness, and could be reduced in some areas with particularly sensitive resources. More types of commercial services could be permitted to support a range of recreational opportunities consistent with the objectives of this alternative. Commercial services would be allowed to the extent necessary to provide opportunities for visitors of diverse abilities and interests to engage in a variety of wilderness activities that are proper for realizing the public purposes of wilderness.

## KEY ELEMENTS OF ALTERNATIVE 2

This alternative addresses the key elements as described below.

### Element 1: Visitor-use Levels

**Planning Objective**: Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character. In this alternative, visitor use levels would be reduced in some popular areas to preserve opportunities for solitude or other wilderness-character qualities.

*Permits and Quotas* — Under this alternative, all overnight visitors in the parks' wilderness, whether self-supported or traveling with the support of a commercial service provider, would be subject to the trailhead quota system (table 4 on pages 61-63), and must obtain a wilderness permit from an approved source (e.g., NPS, USFS, or Pacific Crest Trail Association). This would also apply for alternatives 3, 4 and 5.

Daily trailhead quotas would remain as per alternative 1, with the possibility of some future quota reductions in specific targeted areas. Areas to be monitored for continued acceptable levels of use that may require a future trailhead quota change include Bishop Pass (Dusy Basin), Bubbs Creek (Rae Lakes Loop), Cottonwood Lakes / New Army Pass (Mount Whitney and Mount Langley), Cottonwood Pass (Mount Whitney), Lamarck Col (Darwin Canyon), HST (from Crescent Meadow and Wolverton), Lakes Trail (Emerald and Pear lakes), Sawtooth Trail (Monarch Lakes), and Woods Creek (Rae Lakes Loop).

Four of the five trailheads administered by these parks with no current quotas (and shown as having VL [very low] use on table 4, pages 61-63) would each adopt a daily quota of eight: Don Cecil; Summit Meadow; Colony Mill Road (east); and Colony Mill Road (west). The fifth trailhead, North Fork Kaweah, would adopt a daily quota of 15 (table 46, page 246).

Visitors entering the parks' wilderness via trailheads managed by Sequoia and Kings Canyon National Parks on the west side of the parks would be subject to established quotas regardless of whether they were traveling as private individuals or groups, or with support from commercial service providers. Quotas

could only be exceeded on rare occasions through a formal request to, and approval by, the superintendent. This would also apply for alternatives 3, 4 and 5.

> ***Definitions of Key Terms***
>
> ***Destination Quota*** *– A limit on the number of visitors, groups, or campsites in a specific wilderness location. Destination quotas help to protect wilderness quality and visitor experience in given areas. Quotas are based on resource information, desired conditions, and professional judgment by an interdisciplinary team of specialists and decision makers.*

Those visitors entering the parks' wilderness via trailheads managed by the USFS on the east side of the parks are subject to the trailhead quotas of Inyo National Forest (table 4 on pages 61-63). Most of these quotas are "combined" (i.e., one quota for both private and commercially supported users), and some are "split" (i.e., separate quotas for private users and commercially supported users). Visitors also enter the parks' wilderness from more distant Yosemite National Park and USFS managed trailheads (e.g., Sierra and Sequoia national forests), some of which have quotas and some of which do not. These visitors are subject to the entry policies of the agency issuing the permits at the trailhead. This would also apply for alternatives 3, 4 and 5.

Current destination quotas at Emerald and Pear lakes would continue to apply. Additional destination quotas may be added to protect wilderness character at specific locations such as Bearpaw Meadow, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lakes, Rae Lakes, and other areas.

No day-use permits or quotas would be implemented at this time but they may be considered in the future in popular areas to achieve desired conditions.

The NPS would continue to work with the USFS to manage and improve the quota and permitting systems (e.g., adjust the Mount Whitney exit quota), to add trailheads currently not included in the quota system (e.g., Tehipite Valley and Kern River), and on other relevant cooperative cross-boundary wilderness-management issues.

Visitor Capacities and Encounter Standards — Alternative 2 would retain existing types and levels of use that would be allowed in wilderness in an attempt to provide opportunities and access for appropriate wilderness experiences. Limited and targeted controls would be applied only in those areas where levels and types of use may be leading to some localized impacts on wilderness character. Based on the objectives for this alternative, the overnight estimated visitor capacity would be set at 134,000 VUDs. Ten-year average overnight use would be limited to 108,000–114,000 VUDs/year. While use levels would be allowed to reach the established capacities for this alternative, there are social, economic, and other factors that may lead to actual use being below capacity. Each year, total annual VUDs would be discussed and analyzed by an interdisciplinary group at an annual meeting on wilderness management. If determined to be out of standard, management actions to bring the measure back into standard would be adopted. Appendix A contains a detailed description of the methods used to develop the visitor capacity framework for this WSP.

To ensure that there are opportunities for solitude, the parks would adopt a measure of the number of people encountered per hour (EPH) on trails and would take action based on established standards. The standards would vary depending on the desired condition of solitude in a given area. For this measure, each trail would be assigned to one of four encounter-rate standards: very high use (primarily Mount Whitney and day-use areas), high use (generally Class 3 trails, with some exceptions), moderate use (generally Class 2 trails, with some exceptions), and low use (generally Class 1 trails, with some exceptions). Each has a specified EPH that serves as a standard. The standards for alternative 2 are shown in table 13. Figure 9 on the next page contains encounter standards for the four encounter classes (very high, high, moderate, and low).

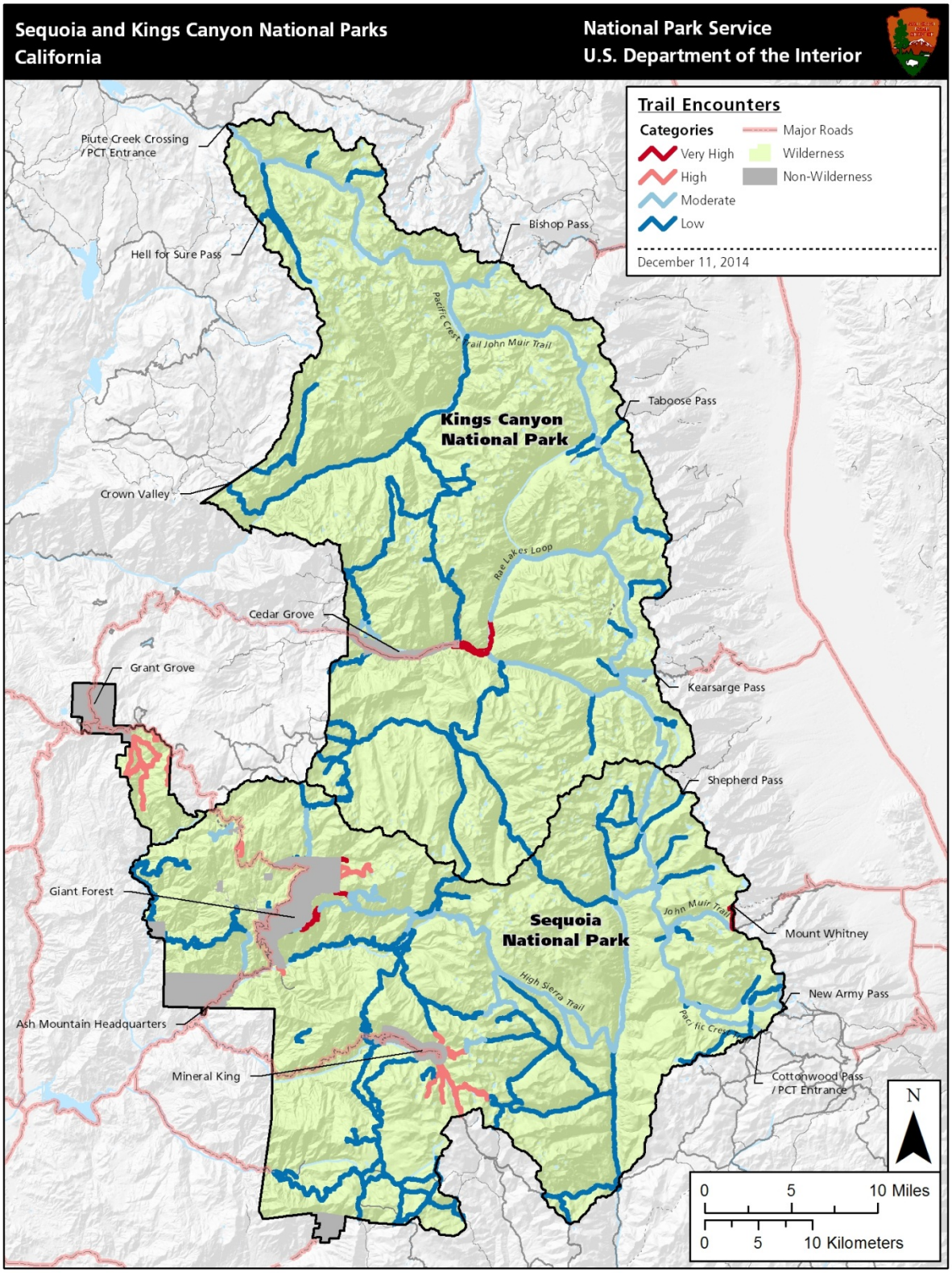



**Figure 9: Map of Trail Encounter Categories (Alternatives 2 through 5)**

**Table 13: Encounters per Hour Standards for Alternative 2**

| Measure | Standard[1] | | | |
|---|---|---|---|---|
| | Very High | High | Moderate | Low |
| Trail Encounters – People Encountered Per Hour – by area | 45 | 25 | 15 | 6 |

[1] Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September) for selected monitored trail segments.

Currently, visitors may experience encounter rates higher than the proposed standard in the areas detailed below. The actions described under this alternative, along with the management actions described in the "Mitigation Common to All Alternatives" section in this chapter and in appendix A, would be taken to return the areas to within standards (table 14). [Note: Trail encounter data from 2012-2014 was collected opportunistically by park staff and volunteers. As a result, a larger proportion of samples occurred on weekend days and mid-day times than would be expected from a random or structured sample. A standardized sampling protocol will be developed upon completion of the WSP, and areas that are shown as out-of-standard and near standard in table 14 would be prioritized for re-sampling.]

**Table 14: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 2**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Very High | 45 | Mount Whitney | Near standard | Lower limits on commercial use; reduction in area camping overnight limits; change grazing restrictions in nearby meadows; obtain better data to confirm observations; consult with USFS regarding area use levels |
| | | Road's End | Near standard | Obtain better data to confirm observations; reduction in area camping overnight limits; implement area-specific restrictions. |
| | | High Sierra Trail (Crescent Meadow to Wolverton Cutoff Junction) | In standard | |
| High | 25 | Lakes Trail | Near standard | Obtain better data to confirm observations. A lower day-use party size may be implemented. |
| | | Mineral King Valley | In standard | |
| | | Little Baldy Trail | In standard | |
| | | Paradise Creek Trail | In standard | |
| | | Redwood Canyon | In standard | |

**Table 14: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 2 (continued)**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Moderate | 15 | Evolution Basin & Valley (JMT/PCT) | Out of standard | Obtain better data to confirm observations; consult with USFS on quota reductions; establish overnight stay limit; implement area specific restrictions. |
| | | Rae Lakes/JMT | Near standard | Obtain better data to confirm observations; reduction in area camping overnight limits; consult with USFS on quota reductions; implement area specific restrictions. |
| | | Mount Langley approach | Near standard | Establish a Class 1 trail to the summit of Mount Langley; lower limits on commercial use; obtain better data to confirm observations; consult with USFS on quota reductions; implement area specific restrictions. |
| | | Crabtree Ranger Station to Trail Crest | Near standard | Obtain better data to confirm observations; lower limits on commercial use; consult with USFS on quota reductions: implement area specific restrictions. |
| | | Rae Lakes Loop — Lower Portion | In standard | |
| | | West side of Kearsarge Pass | Near standard | Obtain better data to confirm observations; reduction in area camping overnight limits; consult with USFS on quota reductions; implement area specific restrictions. |
| | | Dusy Basin | In standard | |
| | | Twin Lakes Trailhead to Silliman Creek | In standard | |
| | | High Sierra Trail (Wolverton Cutoff Junction to JMT Junction) | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; implement area specific restrictions |
| | | Rock Creek | In standard | |
| | | Little Five | In standard | |
| Low | 6 | Sixty Lake Basin Trail (Rae Lakes 3) and Crabtree Lakes (Crabtree 1) | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; implement area specific restrictions. |
| | | All other trails not identified above | In standard[2] | |

[1] Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September).
[2] Inferred from a very small number of samples.

**Element 2: Trails**

**Planning Objective**: The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use (levels of visitor use would be slightly decreased from current levels in targeted areas under this alternative).

Most park trails are already designed and constructed to provide for appropriate access while preserving wilderness character. A few existing trail segments are inadequately constructed to support projected use patterns under this alternative and would be targeted for further development. Some trails are more developed than projected use patterns require, and they would be maintained to a lower development class. A few trails would be designated hiking only where there are threats to sensitive resources or visitor safety issues. Where the designated unmaintained routes listed in the 1986 SUMMP are still passable to stock, and where stock travel does not pose undue threats to natural and cultural resources, they would be designated as Class 1 trails and targeted for appropriate construction and maintenance. Other designated unmaintained routes would be abandoned and landscape restoration considered. Tables comparing each of the alternatives by trail class and use are presented at the end of this chapter. Figure 12 depicts the wilderness trail system for alternative 2 and can be found on page 135. More details on the trail management and classification system and trail management can be found in appendix K.

With additional site-specific planning and compliance, new Class 1 trails could be established to protect resources when visitor use may cause undue impacts. For example, establishing Class 1 trails on Lamarck Col and Mount Langley would provide resource protection in areas with relatively high or increasing visitation.

**Element 3: Campfires**

**Planning Objective**: Visitors would have the opportunity to enjoy campfires where campfires are compatible with the protection of vegetation and downed wood resources. In this alternative, targeted areas would be opened or closed to campfires, depending on availability of wood and resource sensitivity.

Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist. To protect downed wood resources, campfires would be prohibited in most of the high-elevation forests and woodlands. Recreational campfires would be allowed up to the following elevations:

- 10,000 feet in the San Joaquin River drainage
- 10,000 feet in the Kings River drainage
- 10,000 feet in the Kern River drainage
- 9,000 feet in the Kaweah River drainage
- 9,000 feet in the Tule River drainage

In areas where available wood could be burned without unduly depleting ground fuels or consuming paleo resources, variances could be established for specific areas above these elevations in the future. In addition, site-specific prohibitions would be implemented where downed wood resources cannot sustain campfires, including: Hamilton Lakes, Mineral King Valley, Pinto Lake, and Redwood Canyon.

This alternative allows recreational campfires in 395,710 acres of the 837,806 acres of wilderness in the parks (47% of the wilderness). Figure 13 depicts campfire restrictions for alternative 2 and can be found on page 137.

**Element 4: Food Storage**

**Planning Objective**: Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food. In this alternative, food-storage boxes would be provided in areas where the risk of affecting native wildlife is high.

Portable containers would be required for overnight use at North Dome, Dusy Basin, Rae Lakes Loop, and Rock Creek areas, and may be required in other areas in the future in response to increased incidents. In areas where portable containers are not required, counterbalance hanging would be allowed.

Some 86 food-storage boxes (the exact number varies with functionality and/or placement) are currently located in the parks' wilderness (see figure 3, page 67, for a map of current food-storage box locations). Boxes would be retained at the most popular areas and new ones would be considered for areas meeting criteria for placement (e.g., Rae Lakes Loop and HST). Criteria for retention or placement include proximity to trailheads, area visitation levels, quality of bear habitat, and frequency and severity of historic incidents. Where criteria are not met, the undeveloped quality of wilderness character would be improved by removing food-storage boxes. In the future, additional food-storage boxes may be installed in response to site-specific issues or incidents, after completion of a MRA.

Under this alternative, 48 of the existing 86 food-storage boxes would be retained, and 25 would be removed. An additional 13 food-storage boxes would be considered for removal. Prior to removal of the additional 13, the parks would test the areas by temporarily locking food-storage boxes and/or by establishing a container requirement for visitors. If the testing is successful, the food-storage boxes would be removed. Table 15 provides a list of the food-storage boxes to be retained and removed and the justification for action.

**Table 15: Food-storage Boxes to be Retained or Removed under Alternative 2**

[Note: Number of food-storage boxes is indicated in parentheses when more than one box exists in the area.]

| Food-storage Box Location Listed Approximately North to South | Alternative 2 Actions | | | Discussion and Justification |
|---|---|---|---|---|
| | Remove | Retain | Retain but Test for Potential Removal | |
| **NORTH OF THE KINGS CANYON** | | | | |
| Frypan Meadow | Remove box | | | Low use levels. Opportunities for counterbalancing. No recent history of bear issues. |
| Lower Tent Meadow | | | Test closure of box. | Moderate use levels. Opportunities for counterbalancing. No recent history of bear issues. |
| **RAE LAKES LOOP AREA** | | | | |
| Paradise (5 – 2 in Lower, one in Middle, two in Upper) | Remove one box from Lower Paradise | Retain three boxes – one each in Lower, Middle and Upper Paradise Valley. | Test closure of one box in Upper Paradise for possible removal. | Use levels resulting from reduced number of campsites in Lower Paradise would be supported by one box. Moderate use levels would continue at Middle Paradise; Upper Paradise would still be very popular. History of bear issues necessitates retention of three boxes. Container-required area. |

**Table 15: Food-storage Boxes to be Retained or Removed under Alternative 2 (continued)**

[Note: Number of food-storage boxes is indicated in parentheses when more than one box exists in the area.]

| Food-storage Box Location Listed Approximately North to South | Alternative 2 Actions | | | Discussion and Justification |
|---|---|---|---|---|
| | Remove | Retain | Retain but Test for Potential Removal | |
| Woods Creek Crossing (2) | | Retain both boxes. | | Popular area with good bear habitat and history of bear issues. Container-required area. |
| Arrowhead Lake (2) | | Retain one box. | Test closure of one box for possible removal. | Popular area with good bear habitat. Popular use by through hikers (JMT, PCT). Container-required area; two boxes are unnecessary. Container-required area. |
| Rae Lakes area (2) | | Retain both boxes | | Popular area with good bear habitat and history of bear issues. Container-required area. |
| Charlotte Lake | | Retain box | | Popular area with history of bear issues. Container-required area. |
| Vidette Meadow (2) | | Retain one box. | Test closure of one box for possible removal. | This is a popular area with bear issues; however, one box may suffice since most users have portable food containers. Container-required area. |
| Kings Junction / Lower Junction Meadow area (2) | | Retain both boxes | | Popular area with history of bear issues. Container-required area. |
| East Lake outlet/inlet area (2) | Remove box at inlet | Retain box at outlet | | Most visitors camp at the outlet. Popular area with history of bear issues. Some commercial stock users camp at inlet but have their own food-storage panniers. Container-required area. |
| Charlotte Creek (at junction with Bubbs) | | Retain | | Popular area with history of bear issues. Container-required area. |
| Sphinx Junction (2) | Remove one box | Retain one box | | Low use of box across the river; two boxes are unnecessary. Container-required area. |
| **ROARING RIVER TO SILLIMAN AREA** | | | | |
| Roaring River (3 – one each at Sliding Top, Stewart E. White Camp, and Hilltop Camp) | | Retain two: Sliding Top box and Stewart E. White box. | Test closure of Hilltop Camp box. | Sliding Top box has both administrative and visitor use. Stewart E. White box is in a popular area. The Hilltop Camp has moderate use, mostly by stock parties using panniers. Good counterbalance hanging options. Good bear habitat and increasing bear issues. |
| Sugarloaf | | Retain | | Primarily a stock-use area, particularly by private stock users who may not have food-storage panniers. Good bear habitat. |
| Comanche Meadow | Remove | | | Use levels do not justify the need for a box at this location. |
| Seville Lake (2) | Remove one box | | Test container requirement for possible removal of one box. | Use levels do not justify the need for 2 boxes at this location. Good bear habitat. Implement container requirements for eventual removal of all boxes in area. |

**Table 15: Food-storage Boxes to be Retained or Removed under Alternative 2 (continued)**

[Note: Number of food-storage boxes is indicated in parentheses when more than one box exists in the area.]

| Food-storage Box Location Listed Approximately North to South | Alternative 2 Actions | | | Discussion and Justification |
|---|---|---|---|---|
| | Remove | Retain | Retain but Test for Potential Removal | |
| Lost Lake | | | Test container requirement for possible removal. | Good bear habitat. Implement container requirements for eventual removal of all boxes in area. |
| Ranger Lake (2) | Remove one box | | Test container requirement for possible removal of one box. | Use levels do not justify the need for two boxes at this location. Good bear habitat. Implement container requirements for eventual removal of all boxes in area. |
| Twin Lakes (2) | Remove one box | | Test container requirement for possible removal of one box. | Use levels do not justify the need for two boxes. Good bear habitat. Implement container requirements for eventual removal of all boxes in area. |
| Cahoon Meadow/East Fork Clover Creek crossing (2) | Remove one box | | Test container requirement for possible removal of one box. | Low-use area with good bear habitat. Close to Lodgepole which has history of bear issues. Container requirements would likely be successful in this area. Implement container requirements for eventual removal of all boxes in area. |
| **SOUTHERN JMT/PCT** | | | | |
| Kearsarge (3) | Remove two boxes | Retain one box | | All three boxes currently locked as a test. Conclusion of the two-year test is that not all three boxes are needed. Container-required area. |
| 9,900 feet elevation/ JMT/Bubbs Creek | Remove | | | Other opportunities for camping and food-storage nearby. Container-required area. |
| Center Basin/JMT junction | | Retain | | This is a popular area with bear issues. Container-required area. |
| Tyndall Frog Ponds (2) | Remove southerly box | Retain one box | | Low use at southerly camp. Northerly area receives more use and is good bear habitat. |
| Tyndall Meadow | Remove | | | Low-use commercial stock camp. One nearby box for public is available. Good options for counterbalancing. |
| Wallace Creek/ JMT/ Junction Meadow | | Retain | | Popular area with good bear habitat and history of bear issues. |
| Upper and Lower Crabtree (2) | Remove box at Lower Crabtree | Retain box at Upper Crabtree | | Low use at Lower Crabtree and a box is available at the upper meadow. No recent history of bear issues. |

**Table 15: Food-storage Boxes to be Retained or Removed under Alternative 2 (continued)**

[Note: Number of food-storage boxes is indicated in parentheses when more than one box exists in the area.]

| Food-storage Box Location Listed Approximately North to South | Alternative 2 Actions | | | Discussion and Justification |
|---|---|---|---|---|
| | Remove | Retain | Retain but Test for Potential Removal | |
| Rock Creek (3 – Rock Creek Crossing, Rock Creek Lake, and Soldier Lake) | | Retain all three boxes. | (consider locking one or more boxes as a test prior to closure at some time in the future) | Popular area with history of bear issues. Close to trailheads so hikers may have more food. Container-required area. |
| **KERN TO MINERAL KING AREAS** | | | | |
| Kern – Junction Meadow/Colby Pass | | Retain | | Popular area with history of bear issues. |
| Kern Hot Spring (2) | Remove one box | Retain one box | | One box would accomplish bear protection. |
| Upper Funston (2) | Remove one box | Retain one box | | One box would accomplish bear protection. |
| Lower Funston (2) | Remove one box | Retain one box | | One box would accomplish bear protection. |
| Moraine Lake | | Retain | | Popular area with bear issues. |
| Lost Canyon | | Retain but relocate in general locale | | Popular area with bear issues. |
| Big Five Lakes | Remove | | | Low-to-moderate visitation. Many trees for counterbalancing. |
| Little Five Lakes | | Retain | | Popular area with history of bear issues. |
| Big Arroyo | | Retain | | Popular area with history of bear issues. |
| **LAKES TRAIL TO HIGH SIERRA TRAIL TO HOCKETT AREAS** | | | | |
| Pear Lake (2) | Remove one box | | Test container requirement for possible removal of one box. | Implement container requirements for eventual removal of all boxes in area. |
| Emerald Lake (2) | Remove one box | | Test container requirement for possible removal of one box. | Implement container requirements for eventual removal of all boxes in area. |
| Mehrten Creek/HST | | Retain | | Popular area with history of bear issues. |
| Seven Mile Creek/HST | | Retain | | Popular area with history of bear issues. |
| Buck Creek/HST | | Retain | | Popular area with history of bear issues. |
| Bearpaw Meadow (3) | Remove one box | Retain two boxes | | Popular area with history of bear issues. |

**Table 15: Food-storage Boxes to be Retained or Removed under Alternative 2 (continued)**

[Note: Number of food-storage boxes is indicated in parentheses when more than one box exists in the area.]

| Food-storage Box Location Listed Approximately North to South | Alternative 2 Actions | | | Discussion and Justification |
|---|---|---|---|---|
| | Remove | Retain | Retain but Test for Potential Removal | |
| Hamilton Lakes (3) | Remove one box | Retain two, but replace with new boxes | | Popular area with history of bear issues. |
| Pinto Lake | | Retain | | Popular area in good bear habitat. Close to trailheads so hikers may have more food. |
| Cliff Creek | | | Test closure for possible removal. | Low-moderate visitation. First camp for less-experienced visitors. Trees available for counterbalancing. |
| Monarch Lake | | Retain | | Popular area with no place to counterbalance. Good bear habitat with history of bear issues. |
| Franklin Lake (2) | Remove lower box | Retain upper box | | Most people camp above the dam and the lower box is not needed. Popular area with history of bear issues. |
| Hockett Ranger Station (2) | Remove one box | Retain one box | | One box is sufficient to handle use levels. |
| Hidden Camp, Rock Camp, and Upper Camp (3; one at each location) | | Retain all three boxes | | Moderate private stock use levels. History of bear issues. |

This list of food-storage boxes is based on the best available information. There may be additional food-storage boxes located in wilderness that have not been documented. If any food-storage boxes are present in wilderness and not on this list, they would be removed under this alternative.

This list also does not include food-storage boxes at administrative crew camps in Sequoia and Kings Canyon National Parks that are sometimes available to the public (i.e., when crews are not working out of those camps). These food-storage boxes would either be removed and replaced with collapsible boxes on a temporary basis while crews are working or locked for exclusive administrative use.

### Element 5: Human-waste Management

**Planning Objective**: Human waste would not contaminate water or create unsanitary or unsightly conditions. In this alternative, restrooms and privies would be provided in targeted areas where the risk of contamination is high.

Cat-holes would be required where there are no privies or toilets. Requirements to pack out used toilet paper would be retained. Pack-out waste kits would be recommended for use in popular areas or where privies or restrooms are not feasible (e.g., lack of suitable soils, archeological concerns, or other resource concerns). Pack-out waste kits may be required in specific areas to minimize the need for privies and restrooms.

Existing privies and restrooms would be evaluated and when they are beyond reasonable repair, or if they are located in unsuitable locations (low-use, close-in areas, where soils allow for cat-holes), they would

be removed. The remaining privies would be retained and maintained. New privies would be considered for a few popular day-use areas where other methods have proved unsuccessful.

Ten public-use privies would be retained, including Bearpaw Meadow (2), Crabtree, Franklin Lake, Kern Hot Spring, Monarch Lake, Paradise Valley (2), Roaring River, and Woods Creek Crossing. Seven public-use privies would be removed including privies in the Bearpaw Meadow area, Hockett, Middle Paradise, Sphinx, Roaring River (2) and Upper Funston areas. One public-use privy would be added at Rock Creek Crossing.

Three additional public-use privies could be removed at Eagle Lake, Mosquito Lake, and Twin Lakes, but only after pack-out waste kits prove successful in the test areas. The public-use restroom buildings at Emerald and Pear lakes could be removed in the future if maintenance of the facility becomes cost prohibitive or if repairs or renovations are not cost efficient. Table 16 on the next page provides a list of public privies and restrooms and the justification for retaining or removing.

**A typical privy**

**Table 16: Public-use Privies and Restrooms Retained or Removed under Alternative 2**

[Note: Number of privies/restrooms is indicated in parentheses when more than one privy/restroom exists.]

| Privy/Restroom Name/Location Listed North to South | Alternative 2 Actions | Discussion and Justification |
|---|---|---|
| Woods Creek Crossing | Retain | Popular and concentrated use and primary stopping point for multiple trip itineraries. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Paradise Valley (3 – 1 each in Upper, Middle, and Lower) | Retain two privies (Upper and Lower). Remove privy at Middle Paradise. | Less use in Middle Paradise Valley than Upper and Lower Paradise Valley. Removal of designated campsites in Middle Paradise under this alternative makes it more appropriate to disperse use by not having a privy available. Soils are suitable for cat-holes. |
| Sphinx | Remove | Low use and soils are appropriate for cat-holes. |
| Roaring River area (3) | Remove privy at Sliding Box Camp; retain privy at Stewart E. White Camp (near ranger station). Remove privy at Knoll Camp (if it still exists). | Less use at Sliding Box Camp. Large area with suitable soils for cat-holes at Sliding Box Camp. Stewart E. White Camp location has long-established and concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Twin Lakes | If carry-out waste requirements are successful at Emerald and Pear lakes, implement at Twin Lakes by removing privy. Provide carry-out bags for human waste for both day and overnight users. | Popular area close to busy trailhead. Taking out the privy without an alternative would result in impacts because of concentrated use. |
| Heather Lake | Removed recently – do not replace. Provide carry-out bags for human waste for both day and overnight users. Increase education on proper behavior. | Sensitive area with concentrated day-use (no overnight use at Heather Lake). It is near the trailhead so use of carry-out bags for human waste would be appropriate. |
| Pear Lake (1 restroom) | Prior to major repairs or renovations, and after successful implementation of carry-out waste kits in other locations, this area would be tested for the use of carry-out waste kits. If carry-out waste kits prove successful, remove restroom building. | Existing restroom is a large development in wilderness and requires high levels of maintenance. When the restroom is no longer usable, or is no longer functioning properly, it will be evaluated for removal. This is a popular area where rocky shallow soils do not support use of cat-holes. There are designated sites in the area so education on use of carry-out waste bags can be provided through the permitting process. |
| Emerald Lake (1 restroom) | Prior to major repairs or renovations, and after successful implementation of carry-out waste kits in other locations, this area would be tested for the use of carry-out waste kits. If carry-out waste kits prove successful, remove restroom building. | Existing restroom is a large development in wilderness and requires high levels of maintenance. When the restroom is no longer usable, or is no longer functioning properly, it will be evaluated for removal. This is a popular area where rocky shallow soils do not support use of cat-holes. There are designated sites in the area so education on use of carry-out waste bags can be provided through the permitting process. |

**Table 16: Public-use Privies and Restrooms Retained or Removed under Alternative 2 (continued)**

[Note: Number of privies/restrooms is indicated in parentheses when more than one privy/restroom exists.]

| Privy/Restroom Name/Location Listed North to South | Alternative 2 Actions | Discussion and Justification |
|---|---|---|
| Bearpaw Area (3) | Remove one privy. Retain two privies (one at backpacker camp area and one near Bearpaw Meadow High Sierra Camp). | This is a popular area with well-established designated camp area. A privy is necessary near the camp to protect natural quality of wilderness and protect solitude (from litter associated with human waste). A public privy is necessary near the Bearpaw Meadow High Sierra Camp to protect resources of the camp area from human waste and litter. |
| Hamilton Lakes | Retain | Popular area with rocky shallow soils not suitable for digging cat-holes. |
| Crabtree area | Retain | Popular area where a privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Rock Creek area (0) | Add one privy at Rock Creek crossing area. | This area is popular and has concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Kern Hot Spring | Retain | This area is popular and has concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Upper Funston | Remove | Low-moderate use. Large area with suitable soils for cat-holes. |
| Monarch Lakes | Retain | This area is popular and has concentrated use. Rocky shallow soils do not support use of cat-holes. This is a launching point for longer trips. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Eagle Lake and Mosquito Lakes (2 – 1 privy at each location) | If carry-out waste requirements are successful at Emerald and Pear lakes, implement in these areas by removing the two privies. Provide carry-out bags for human waste for both day and overnight users going to Eagle Lake, Mosquito Lakes, and White Chief area. | This area is popular and has concentrated use. Generally visitors are day hikers or stay for one to two nights. Not a launching point for longer trips. Close to the trailhead and suitable for testing carry-out bags. |
| Franklin Lakes | Retain | This area is popular and has concentrated use. Rocky shallow soils do not support use of cat-holes. This is a launching point for longer trips. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Hockett Meadow | Remove | Low use and soil type is appropriate for cat-holes. |

The NPS would consider future implementation of new technologies for human-waste management as they are developed. The use of new technologies may require site-specific planning and compliance. Some technologies may require visitors to be more self-sufficient.

**Element 6: Party Size**

**Planning Objective**: Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups. In this alternative, changes to party-size limits would occur for stock groups and in targeted popular and off-trail areas.

All of the action alternatives include party-size limits for people and stock. These limits are based on three numbers: the total number of people, the total number of stock, and the combined total of people and stock. The party-size limits differ for on-trail and off-trail travel. The total number of people allowed per party will be the same for hikers and stock users and is limited primarily to protect opportunities for solitude. The total number of stock allowed per party is limited primarily to protect the natural quality of wilderness in campsites, stock tie areas, and off-trail travel areas. The combined total of people and stock allowed in a party may be lower than the sum of the maximum allowed numbers of people and stock; it is limited primarily to protect opportunities for solitude and to control impacts from very large groups on the natural quality at camps.

Alternative 2 keeps the current maximum numbers of people and stock for on-trail travel, but reduces the combined party size. Lower party-size limits are set for off-trail travel to preserve opportunities for solitude and to discourage development of informal trails. The combined party size for stock plus people is reduced to prevent impacts on solitude by the largest stock parties. Party-size limits for hikers would apply to boaters under all alternatives. Tables 17 and 18 present party size limits under alternative 2.

**Table 17: Party-size Limits for Hikers and Boaters for Alternative 2**

| Type of Trip | Maximum Party Size |
|---|---|
| On-trail (day use) | 25, consider future more restrictive party size for day-use in specific areas (e.g., Mist Falls, Watchtower, and Monarch Lakes). |
| On-trail (overnight use) | 15* |
| Off-trail (day and overnight use) | 12, except in areas with specific lower limits (see below). |
| Area-specific | Existing off-trail temporary party-size limits of 8 would be adopted permanently at Darwin Canyon / Lamarck Col (includes Class 1 trail area), Dusy Basin, Mount Whitney Management Area / Mount Langley (includes Class 1 trail area), Sixty Lake Basin, and Sphinx Lakes.<br>Existing party size of 10 would be retained at Redwood Canyon.<br>A party-size limit of 8 is established for the Don Cecil Trail and the Colony Mill Road Trail. |

*Consistent with neighboring USFS areas.

**Table 18: Party-size Limits for Stock Parties for Alternative 2**

| Type of Stock Trip | Maximum Party Size for People and Stock |
|---|---|
| Day Rides (not including spot and dunnage) | People: 20<br>Stock: 20<br>Combined: 40 |
| On-trail (including spot and dunnage trips that support overnight use for those trails where stock is allowed, except where area-specific exceptions apply) | People: 15<br>Stock: 20<br>Combined: 28 |
| Off-trail (in areas specifically designated for off-trail stock use, except where area-specific exceptions apply) | People: 12<br>Stock: 12<br>Combined: 14 |
| Area-specific | Upper Goddard Canyon/Martha Lake would have a party-size limit consistent with the off-trail party size (12 people, 12 stock, combined maximum of 14).<br>Combined party size of 8 (people and stock) for day rides into Sixty Lake Basin. Trail closed to stock beyond a point 1.8 miles from the junction of the JMT and the Sixty Lake Basin Trail.<br>Combined party size of 8 (people and stock) for day rides above Penned Up Meadow on the Class 1 trail into Miter Basin.<br>Existing limit of 10 people and 10 stock at Redwood Canyon would be retained (combined maximum of 20). |

### Element 7: Camping/Campsites and Night Limits

**Planning Objective**: Visitors would have the opportunity to choose camping locations, except in areas where camping would result in unacceptable impacts. In this alternative, camping restrictions would be adjusted in targeted areas.

Camping would be allowed in specific areas close to the frontcountry (e.g., Colony Mill Trail, Don Cecil Trail, and North Dome) to allow a greater diversity of recreational opportunities where risks to resources are low. One or more universally accessible campsites could be constructed closer to a trailhead (e.g., near the confluence of Bubbs Creek and the South Fork Kings River), designed to meet wilderness standards.

The locations of established stock camps would be identified and the NPS would recommend their use. In specific popular areas, stock users may be required to camp in designated stock camps. These areas may include Woods Creek Crossing, Rock Creek Crossing, and Big Pete Meadow. If an area is designated as a required stock camping site/area, backpacker camping would be prohibited. Criteria used for establishing stock-only campsites would include the areas' historic visitation by both backpackers and stock users.

*First Allowable Campsite* — The first allowable camps by trailhead under alternative 2 are presented in table 19. Camping is prohibited on these trails prior to the listed first-camp locations. These prohibitions would also apply to alternatives 3, 4, and 5.

**Table 19: First Allowable Camps by Trailhead under Alternative 2**

| Trailhead Name Listed North to South Generally | Distance to First Allowable Camp | Name of First Camp or Description of Area |
|---|---|---|
| Lewis Creek | 4 miles | Comb Creek |
| Hotel Creek | 5.4 miles | Comb Creek |
| Copper Creek | 4.4 | Lower Tent Meadow |
| Woods Creek/Paradise Valley | 6.5 miles | Lower Paradise Valley (designated sites only) |
| Bubbs Creek | 4 miles | Sphinx Creek |
| Don Cecil Trail | 2 miles | Unnamed Creek |
| Buena Vista | No overnight use | |
| Big Baldy | No overnight use | |
| Redwood Canyon | On-trail into canyon bottom: 1 mile | Redwood Creek |
| | On-trail to Hart Tree: 1.25 miles | Hart Meadow/Buena Vista Creek |
| Sugarloaf (Marvin Pass trailhead) | Parks' Boundary with NPS Permit | Parks' Boundary |
| Rowell Meadow (Belle Canyon Trailhead) | Parks' Boundary with NPS Permit | Parks' Boundary |
| J.O. Pass (Big Meadows) | Parks' Boundary with NPS Permit | Parks' Boundary |
| Lost Grove | No overnight use | |
| Muir Grove | No overnight use | |
| Little Baldy | No overnight use | |
| Twin Lakes | 3 miles | Cahoon Meadow |
| Tokopah | No overnight use | |
| Lakes Trail (Emerald/Pear Lakes) | 5.2 miles | Emerald Lake (designated sites only) |
| Alta | 2.9 miles | Panther Gap (no water) |
| Giant Forest and Crystal Cave areas | No overnight use | |
| HST/Crescent Meadow | 2.8 miles | Panther Creek |
| North Fork Kaweah | 1 mile from trailhead | Note: First water at 4.2 miles |
| Colony Mill Road Trail | (West) from Crystal Cave Road Trailhead: ~2.5 miles | Colony Mill Ranger Station site (no water) |
| | (East) from North Fork Trailhead: ~2 miles | Maple Creek |
| Marble Falls | No overnight use | |
| Middle Fork Kaweah | 3.5 miles | Panther Creek |
| Oriole Lake Road | 1 mile | Oriole Grove, >1 mile from all roads |
| Paradise Creek | 2 miles above Middle Fork Bridge | Poison Oak Flat |
| Paradise Ridge | 3.3 miles | Paradise Ridge (no water) |
| Atwell/Hockett | 6 miles | Clover Creek |
| Timber Gap | 2.3 miles | Timber Gap (no water) |

**Table 19: First Allowable Camps by Trailhead under Alternative 2 (continued)**

| Trailhead Name Listed North to South Generally | Distance to First Allowable Camp | Name of First Camp or Description of Area |
|---|---|---|
| Sawtooth-Monarch/Crystal | 4.2 miles | Lower Monarch Lake |
| | 4.9 miles | Crystal Lake |
| Tar Gap | 6 miles | Deer Creek |
| Mosquito | 4.1 miles | Mosquito Lake #2<br>(Mosquito #1 closed to camping) |
| Eagle | 3.4 miles | Eagle Lake |
| White Chief | 4.1 miles | Unnamed lake (trail end), or White Chief Lake |
| Franklin | 4 miles | Franklin/Farewell Junction |
| Farewell Gap | 4 miles | Farewell Junction |
| Ladybug | 1.7 miles | Ladybug Camp |
| Garfield | 4 miles | Garfield Grove / Snowslide Canyon |

*Length of Stay/Night Limits for All Campers (stock-supported and backpackers)* — Under this alternative, campers would be limited to stays of 14 consecutive nights at a single location, 25 total nights per trip, and 75 total nights per year. Exceptions would exist for specific areas and are presented in table 20.

**Table 20: Site-specific Exceptions to the Night Limits under Alternative 2**

| Location | Night Limits Exceptions (Consecutive Nights in One Location) |
|---|---|
| Night limits would be implemented at Emerald and Pear lakes (combined), and Lower and Upper Soldier lakes (combined). | 3-night limit |
| Current site-specific night limits would continue to apply at Charlotte Lake, Kearsarge Lakes Basin (basin-wide), Paradise Valley (valley-wide), and Redwood Canyon (area-wide).<br>New night limits would be applied at Colony Mill Trail, Crabtree / Whitney Creek area, Don Cecil Trail, Dusy Basin (basin-wide), Guitar Lake, North Dome, and along the JMT from Woods Creek Crossing to Vidette Meadow (any one location). | 2-night limit |
| Current limit at Rae Lakes (per lake) would be retained.<br>Hamilton Lake camping limit would be reduced. | 1-night limit |
| Continue current situation of no area specific night-limits in Evolution Valley and Evolution Basin. If encounter rate standard is exceeded after additional monitoring, establish an appropriate night limit for the area. This could apply to either or both Evolution Valley or Evolution Basin. | To be determined based on site/area conditions. |

*Designated Campsites* — The use of designated campsites/camp areas would be mandatory in areas where past visitation has impacted resources, including Emerald and Pear lakes, Lower Paradise Valley, and Bearpaw Meadow. There would no longer be designated campsites in Middle and Upper Paradise Valley. Additional designated camp areas may be established in areas where concentrated use and limited campsites could create a risk of rapidly increasing physical or social campsite impacts. Areas to be monitored for a potential future change include Dusy Basin, Guitar Lake, Kearsarge Lakes Basin, Middle and Upper Rae Lakes, and Woods Creek Crossing. Designation of campsites or areas would require site-specific analysis to address issues such as hazard trees and archeological resources. The campsites at Upper and Lower Funston Meadows would no longer be designated for use by stock users only.

***Definitions of Key Terms***

***Weighted Value per Campable Mile*** *– A metric that considers three factors within a travel subzone: length of shoreline of watercourses and lakes; the number of campsites; and the condition class of the campsites. The final weighted-value-per-campable-mile number is calculated using these three factors (Parsons and Stohlgren 1987; Cole and Parsons 2013). For a more detailed definition of WVCM, see appendix A.*

***Wilderness Travel Zones*** *– In the early 1970s, park managers divided the parks into 52 wilderness travel zones to assist in organizing management actions. Wilderness travel zones are generally based on geographic features (watersheds) and overlay the wilderness in Sequoia and Kings Canyon National Parks. Each of the 52 travel zones are then sub-divided into multiple sub-zones, 273 in total. The parks use wilderness travel zones as a way of monitoring and analyzing wilderness conditions and use, and to address a variety of wilderness stewardship issues*

*Campsite Condition Standards* — The measure of campsite condition would be adopted under all alternatives to ensure that the number of campsites and their condition does not exceed standards. The metric of aggregate campsite impacts (Weighted Value per Campable Mile [WVCM]), derived from Parsons and Stohlgren (1987), would be used to measure campsite condition. Each area of the parks would be assigned to one of three levels of a campsite condition standard based on desired conditions: high use, moderate use, or low use. These areas, or subzones, are based on long-established wilderness travel zones, each of which is comprised of several subzones. The metric would be calculated at the subzone level. Each subzone has a specified WVCM that serves as a standard. Under alternative 2, the standard would be: 1000 for high use subzones, 500 for moderate use subzones, and 250 for low use subzones (figure 10 on the next page). A monitoring plan would be developed to establish protocols and schedule monitoring frequencies to ensure that subzones remain within their applied standard (see campsite condition figure 10 on the next page; for information on determining campsite condition and standards, see appendix A, page A-15 and A-24).

Under the standards developed for alternative 2, two subzones (83-1 Guitar Lake and 86-1 Kern Hot Spring) would be out of standard in the higher use category, and one subzone (80-3 Shepherd Pass Lake) would be out of standard in the moderate category. All other subzones would be within standard. Management actions to return the subzones to within standards are included in the "Mitigation Common to All Alternatives" section in this chapter. See appendix A for more detailed information.

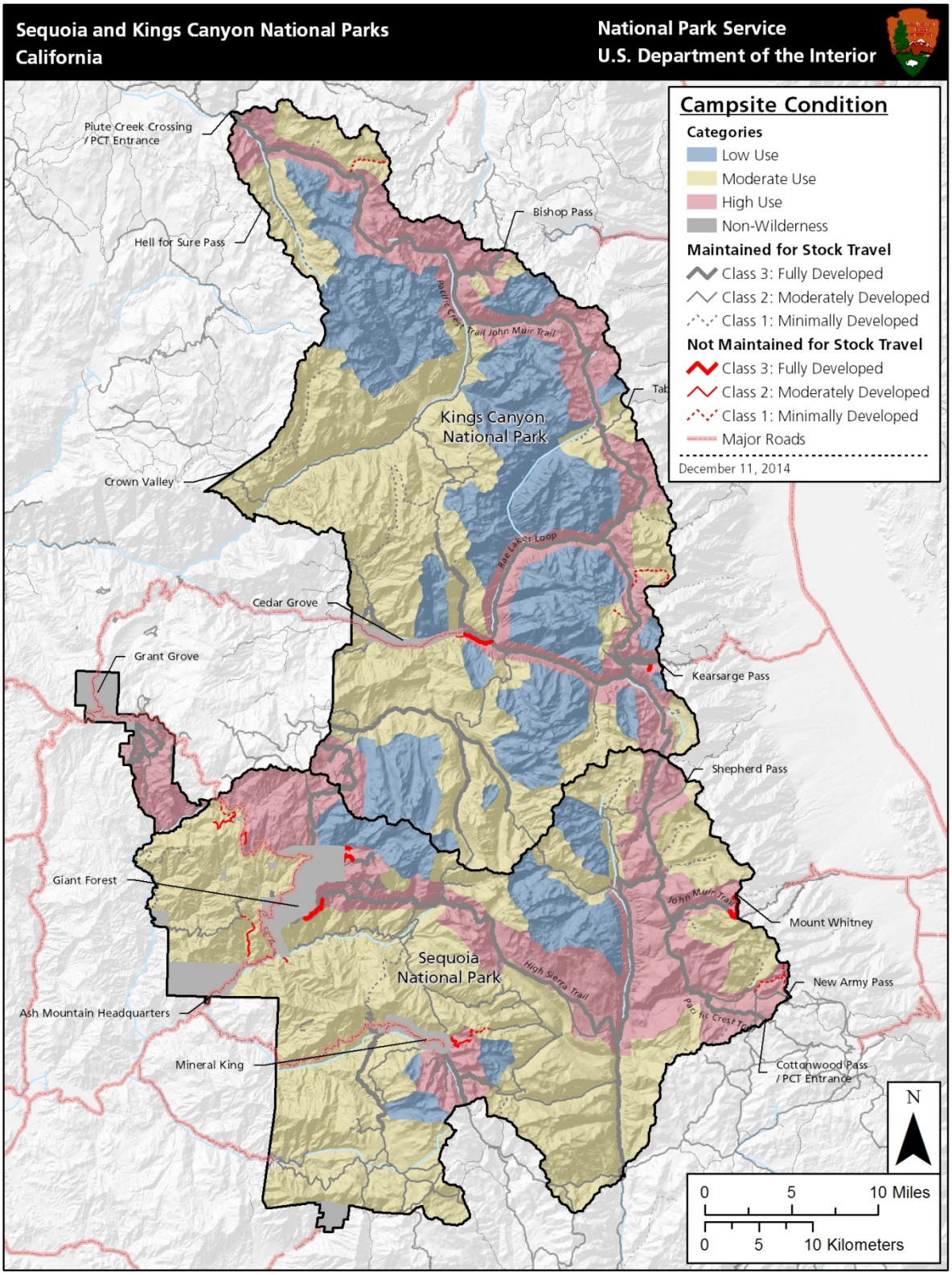



**Figure 10: Campsite Condition Categories by Wilderness Travel Subzone (Alternatives 2 through 5)**

**Element 8: Stock Use**

**Planning Objective**: Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character. Access and grazing would be managed to protect resources, provide other types of primitive recreation, and reduce conflict of user groups. Under this alternative, the number of meadows available to grazing would be reduced.

Figures 14a and 14b depict stock access and grazing restrictions for alternative 2. Figure 14a shows stock access and grazing restrictions in Kings Canyon National Park and can be found on pages 138/139. Figure 14b shows stock access and grazing restrictions in Sequoia National Park and can be found on pages 142/143.

***Stock Access and Travel***

*On-trail* — Visitors traveling with stock would continue to have access to most maintained trails in the parks (650 of 691 miles). Stock parties would be allowed to travel up to 0.5 mile from trails in areas where they are allowed to camp. In areas open to day-use only, stock parties would be allowed to travel up to 100 yards from trails.

Approximately 530 miles of maintained trails would be open to camping with stock. Some trails would be open to stock parties for travel only, some would be open to camping for walking parties with burros and llamas but limited to travel only for parties with horses or mules, and some would be closed to stock travel entirely for reasons including visitor safety, resource protection, and/or popular day-use by hikers. Trails with restricted stock access under alternative 2 would include:

Trails open for travel only (120 miles; includes mileages to first camps from trailhead):

- Alta Trails
- Big Baldy Trail
- Buena Vista Trail
- Center Basin Trail (to Golden Bear Lake)
- Charlotte Lakes Trail from JMT to Charlotte Creek drift fence
- Dusy Basin Trail (to 10,600 feet)
- JMT from Dollar Lake to Vidette Meadow
- Kearsarge Lakes, Kearsarge Pass, and Bullfrog Lake trails
- Ladybug Trail
- Lake 11,092 Trail (shown as Lake 11,106 on older maps)
- Lake Reflection Trail above the abandoned Harrison Pass trail junction
- Lakes Trail (Hump Trail only)
- Martha Lake Trail from 1 mile above Hell-for-Sure Junction
- Miter Basin Trail above Penned-Up Meadow to 11,300 feet in elevation below Sky Blue Lake
- Oriole Lake Trail

- Redwood Canyon area trails
- Upper Blue Canyon Trail (no travel above 10,000 feet in elevation)
- Upper Sixty Lake Basin Trail
- Wallace Lake Trail above 11,200 feet in elevation
- Whiskey Log Trail
- Wright Creek Trail above 11,200 feet in elevation

Trails open to travel only for parties with horses or mules; camping for walking parties with burros and llamas allowed (4 miles):

- Eagle Lake Trail
- JMT from above the Crabtree Ranger Station to the base of the Mount Whitney switchbacks (except Timberline Lake, day-use only)
- Mosquito Lakes trails
- White Chief Trail

Trails closed to stock travel (41 miles):

- Admiration Point
- Baxter Pass Trail
- Crabtree Lakes Trail (no travel above camp at 11,000 feet in elevation)
- HST from Crescent Meadow to Wolverton Cutoff
- Lamarck Col Trail
- Little Baldy Trail
- Lower Big Arroyo Trail
- Lower Sixty Lake Basin Trail
- Marble Falls Trail
- Monarch Lake Trail
- Mount Langley Trail
- Mount Whitney Trail – base of switchbacks to Trail Crest and summit
- Muir Grove Trail
- Paradise Creek Trail
- South Side Cedar Grove Sand Flats Trail
- Upper Soldier Lakes Trail
- Tokopah Falls Trail
- Watchtower Trail

*Off-trail* — Stock parties would continue to be allowed to travel up to 0.5 mile from trails to reach camps. Travel more than 0.5 mile from maintained trails would continue to be allowed in four areas of the parks: on the Hockett Plateau, on the Monarch Divide, in the Roaring River drainage, and along the western side of the Kern River watershed south from the Chagoopa Plateau.

*Stock Grazing* — Grazing would be managed to maximize protection of resources while allowing visitors traveling with stock continued access to forage. Grazing would generally be allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to overnight stock use or in off-trail travel areas). Grazing would not be allowed in those areas open to stock travel only.

Grazing would continue to be managed and informed by the results of the Stock Use and Meadow Monitoring and Management Strategy (see appendix D). Traditional methods of adjusting use levels and patterns would continue to be employed when necessary, including:

- adjusting the number of nights a given party may graze an area;
- adjusting the number of stock per party that may graze an area;
- adjusting opening dates to reflect moisture conditions, which are designed to prevent unacceptable mechanical disturbance to surface soil and vegetation; and
- temporarily closing an area to stock access or grazing.

Estimated grazing capacities for wilderness meadows have been developed using a model of biomass production and forage consumption that takes into account the elevation, soil moisture, and condition of the meadow. These capacities would continue to be used to inform grazing management, and would be refined as additional information is acquired. The capacity of individual meadows and uplands to sustain grazing would continue to be informed by each meadow's vulnerability to erosion or change in hydrologic function, susceptibility to invasion by nonnative plants, habitat requirements of sensitive plants and animals, productivity and the ability to sustain herbage removal, and the requirements of unique ecological communities such as peat-accumulating wetlands. Site-specific grazing capacities would be refined on an ongoing basis to protect resource integrity and to protect the natural quality of wilderness in the face of a changing climate.

These capacities also reflect the logistical importance of key meadows and forage areas for stock travel in popular areas. The methodology for developing grazing capacities for all park meadows open for grazing, including those identified as important for those traveling with stock, is provided in appendix D.

Areas closed to grazing would remain open to camping by visitors traveling with stock, but visitors would be required to hold and feed their animals. Administrative grazing would be managed to limit impacts on public grazing (Note: with rare exceptions, visitors are given preference for limited grazing resources).

California or Nevada certified weed-free forage (baled or loose hay, hay cubes, or straw bedding) would be required when using hay products as supplemental forage or bedding in frontcountry zones. Feed carried into wilderness would be limited to commercially processed pellets, rolled grains, or fermented hay (e.g., Chaffhaye™). These products have a high level of mechanical milling, heat treatment, and/or anaerobic fermentation that result in much lower seed viability. Baled or loose hay and compressed hay cubes, which have little to no processing, would not be allowed in wilderness. This requirement would carry across all action alternatives.

The monitoring system described in appendix D would be employed to track use, document conditions, and provide information for preventing and mitigating impacts. This monitoring program takes into

account variation in annual climate, the characteristics of specific forage areas, and the inherent abilities of different species to withstand grazing and trampling pressure. Monitoring of species composition would continue in five pairs of grazed and ungrazed meadows on a five-year rotation, and repeat photography points would be updated as time and resources allow. Monitoring of residual biomass and bare ground, initiated in 1993, would continue to be implemented and the results used to inform decisions regarding grazing management. The NPS would continue to support research to further understand the effects of grazing on Sierran ecosystems, and to modify management of grazing and monitoring protocols as new information becomes available.

The meadows closed to grazing for scientific and social value by the SUMMP would remain closed to grazing. The meadows closed to grazing due to high levels of visitation and resource concerns by the SUMMP would remain closed with the following exception: Tom Sears Meadow would be reopened to grazing.

The following additional locations which are otherwise open to overnight use would be closed to grazing due to high levels of visitation and resource concerns: Crabtree Lakes (closed to stock access and grazing above existing camp west of lowest lake), Darwin Meadow proper, Forester Lake Meadow, Guyot Creek Meadows (expanding the existing closure to the meadows east of the trail), Kern Hot Spring Meadow, Kettle Dome (Randle Corral) Meadows, Mineral King basin, Summit Lake Meadow, Upper LeConte Canyon above 10,000 feet in elevation, and Whitney Creek drainage above the Crabtree Ranger Station.

Meadows associated with areas or trails closed to stock under this alternative would also be closed to grazing.

Recognizing that the opportunity to observe and experience ungrazed meadows is of value to many park visitors, the following meadows along popular travel routes which are otherwise open to camping by stock would be closed to grazing: Bighorn Plateau and the meadow 0.6 mile south of Bighorn Plateau; Chagoopa Plateau #3 Meadow; Darwin Meadow; Grouse Meadow; Lower Crabtree Meadow; and Taboose Pass Meadow. These meadow closures would make it possible for visitors traveling along the JMT and HST to experience at least one ungrazed meadow in each drainage through which the trails pass.

The following restrictions in areas otherwise open to grazing would be adopted:

- Closed to grazing until Evolution and Colby meadows reach capacity: McClure Meadow
- Open to grazing by walking parties with burros or llamas, closed to grazing by parties with horses or mules: Bubbs Creek below Junction Meadow, Evolution Lake to Muir Pass, Kern Headwaters, Evolution Lake to Muir Pass, and Woods Lake Basin
- Open to grazing by private parties only: Lower Soldier Lake Meadow, Lower Whitney Creek (Strawberry) Meadow, and Upper Vidette Meadow
- Open to administrative use and grazing only: Hockett Pasture, JR Pasture, Kern Ranger Station Pastures, Lackey Pasture, and Upper Redwood Meadow

Table 21 on the next page presents the site-specific night and/or head grazing limits on meadows in the parks.

*Stock Use Structures* — Under this alternative, 29 hitch rails would be retained, and 23 hitch rails would be removed. Also, 42 fences/gates would be retained; 12 would be removed (see tables 51a and 51b starting on page 272 at the end this chapter).

**Table 21: Site-specific Night and/or Head Limits on Grazing under Alternative 2**

| Location | Stock Head Limit | Night Limit |
|---|---|---|
| Bubbs Creek (below Junction Meadow) | 20 | 1 |
| Castle Domes Meadow | 15 | 1 |
| Charlotte Creek (below drift fence) | 20 | 2 |
| East Lake | 12 | 2 |
| Junction Meadow (Bubbs) | 15 | 1 |
| Redwood Meadow | 15 | 14 |
| Scaffold Meadow | 15 | 2 |
| Shorty's Meadow | 20 | 2 |
| Upper Crabtree and Sandy Meadows | 10 | 14 |
| Upper Evolution Valley (above Evolution Meadow) | 20 | 1 |
| Upper Rock Creek (Rock Creek Lake and above) | 20 | 2 |
| Wallace Creek Waterfall Meadow | 6 | 1 |

### Element 9: Administrative Structures

**Planning Objective**: Administrative structures and developments would be the minimum necessary for the administration of wilderness, similar to current conditions.

Ranger Stations — Ranger stations that would be retained in their current locations:

- Charlotte Lake
- Crabtree
- Hockett Meadow
- Kern Canyon
- LeConte Canyon
- Little Five Lakes (yurt)
- McClure Meadow
- Pear Lake
- Rae Lakes
- Roaring River
- Rock Creek
- Tyndall Creek

The patrol cabins at Quinn, Redwood Meadow, and Simpson Meadow would be retained.

Three ranger stations could be relocated, modified, considered for conversion, or replaced:

- Bench Lake tent platform could be moved to a more suitable location for patrol functions.
- Bearpaw Meadow Ranger Station would be removed and reconstructed to better meet the area's historic character.
- The Monarch tent platform would be converted to an administrative camp and the footprint would be reduced.

Each of the above actions would be subject to separate site-specific planning, design and compliance.

*Other Administrative Structures* — Use of the Redwood Canyon Cabin would be authorized by permit for activities appropriate for the administration of wilderness. The footprint of the facility would be reduced and the external installations (e.g., privy, equipment storage boxes, woodshed, water system) would be removed. If future use of the structure is determined by the parks to not sufficiently support wilderness purposes, the cabin would be removed, and the area restored. The action of removal would be subject to additional planning and compliance tiered to the WSP/EIS.

*Administrative Pastures* — Existing administrative pastures and associated structures would be retained (Hockett Meadow, Kern, Redwood Meadow, and Roaring River) in their current locale and within their current footprint.

*Crew Camps* — Existing trail crew camps would be retained, but the number of long-term (v. portable) food-storage boxes in each camp would be reduced to one. Other project crew camps (for administration of wilderness) would be established as needed on a case-by-case basis with no equipment left on-site after project completion.

**Element 10: Frontcountry Facilities to Support Wilderness Access and Use**

**Planning Objective**: Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.

The types and levels of commercial services that may be performed in wilderness are discussed in detail in the END (appendix B).

***Kings Canyon National Park***

*Cedar Grove Pack Station* — The Cedar Grove Pack Station would continue to be operated under concession authority based on a contractual relationship with NPS with approved use types and levels. Stock camping sites would be developed at the Cedar Grove Pack Station primarily for private users. Holding pen/corral space, hitch rail(s), adequate parking and turnaround space for stock trailers, campfire pit, picnic tables, restrooms, food-storage boxes, and water supply would be installed.

***Sequoia National Park***

*Middle Fork Kaweah Trailhead* — At the Middle Fork Kaweah Trailhead the NPS would provide improved parking and turnaround space for stock trailers and a hitch rail; no other stock amenities would be provided. Commercial service providers would be allowed to use this trailhead. No camping for stock or backpackers would be allowed.

*Mineral King Area* — Selected sites within the Atwell Mill Campground would be adapted to accommodate stock camping in two or three sites. Site specific planning and design would occur prior to developing stock sites, and considerations would include distance from non-stock sites, drainage, and natural and cultural resource concerns. Facilities may include a holding pen, hitch rail(s), table, campfire pit, picnic table, and stock trailer parking. The sites would be maintained through an agreement between the NPS and a cooperating partner. Commercial service providers would be allowed to use the Atwell/Hockett trailhead.

There would be no concessions operations at the Mineral King Pack Station. Existing facilities at Mineral King administrative corrals in east Mineral King Valley would continue to be used for park administrative purposes at the existing location or at a new location to reduce and minimize environmental impacts on wetlands and water quality. Existing stock facilities could be modified to allow for short-term public camping or staging and/or short-term camping by CUA holders. Modifications to the site to provide for use by private individuals and/or CUA holders would include adequate parking and turnaround space for stock trailers, a small corral, water, a picnic table, and a vault toilet or restroom. These facilities would provide for stock camping for private parties (1 to 2 sites, one- or two-night limit). The site would be maintained through an agreement between the NPS and a cooperating partner.

*North Fork Kaweah Trailhead* — At the North Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would be allowed to use this trailhead and controlled through conditions of a permit. The area would be maintained through an agreement between the NPS and a cooperating partner. No camping for stock or backpackers would be allowed.

*South Fork Kaweah Campground and Trailhead* — Stock use would continue to be allowed at the South Fork Kaweah Trailhead. The South Fork Kaweah Trailhead would be slightly modified to improve the existing parking and turnaround space for stock trailers at the trailhead, and a hitching post would be provided. Site specific planning and design would occur prior to any modifications, with the intent to minimize impacts on the natural resources in the area. Use would be primarily for private users, with limited commercial use by CUA holders (managed via permit conditions) and administrative users. The site would be maintained through an agreement between the NPS and a cooperating partner.

*Wolverton Area (trailheads and administrative corrals)* — The facilities in the Wolverton area would continue to be used for park administrative purposes. The Wolverton facilities could be modified to provide for short-term use for private parties and commercial service providers. There would be no permanent occupancy of the Wolverton corrals by a commercial service provider to operate wilderness stock trips. The site could be maintained through an agreement between the NPS and a cooperating partner.

The above modifications to frontcountry facilities and trailheads would require site-specific planning, design, and compliance.

**Element 11: Commercial Services in Wilderness**

**Planning Objective**: Commercial services would be performed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas. Commercial services would support visitor use and enjoyment of wilderness in a variety of appropriate ways. Visitors with diverse backgrounds and skill levels would be encouraged to experience wilderness and to explore primitive recreation activities such as hiking, backpacking, stock trips, fishing, over-snow travel, or mountaineering, or to build skills in these activities. In order to protect wilderness

character, commercial services would be reduced in the very popular Mount Whitney Management Area.

Specific wilderness activities that have been determined to necessitate support from commercial services consist of backpacking and hiking, stock trips (riding, packing, day rides, and overnight camping with stock), overnight camping with gear hauling support (stock spot, and stock and porter dunnage), oversnow travel (ski and snowshoe touring and winter overnight camping), climbing and mountaineering (summer and winter), fishing, river running, and photography (appendix B).

**Mount Whitney, approaching from the west**

Under this alternative, based on the commercial services evaluation and determination for wilderness (appendix B), and consistent with the overall desired conditions of this alternative, the levels and types of commercial services to be performed would be similar to current conditions. However, the levels and types of commercial services allowed would be specifically limited in the Mount Whitney Management Area (figure 11 on the next page), an approximately 37,200 acre area around Mount Whitney within Sequoia National Park, roughly defined as bordered on the north by the Wallace Creek watershed, on the east by the Sierra Crest, and on the west by the lip of the Kern Canyon, and on the south by the PCT. Table 22 on page 129 presents the levels and types of commercial services.

Also, under this alternative, all overnight visitors in the parks' wilderness, whether self-supported or traveling with the support of a commercial service provider, would be subject to the trailhead quota system (table 4 on page 61-63), and must obtain a wilderness permit from an approved source (e.g., NPS, USFS, Pacific Crest Trail Association). This would also apply for alternatives 3, 4 and 5.

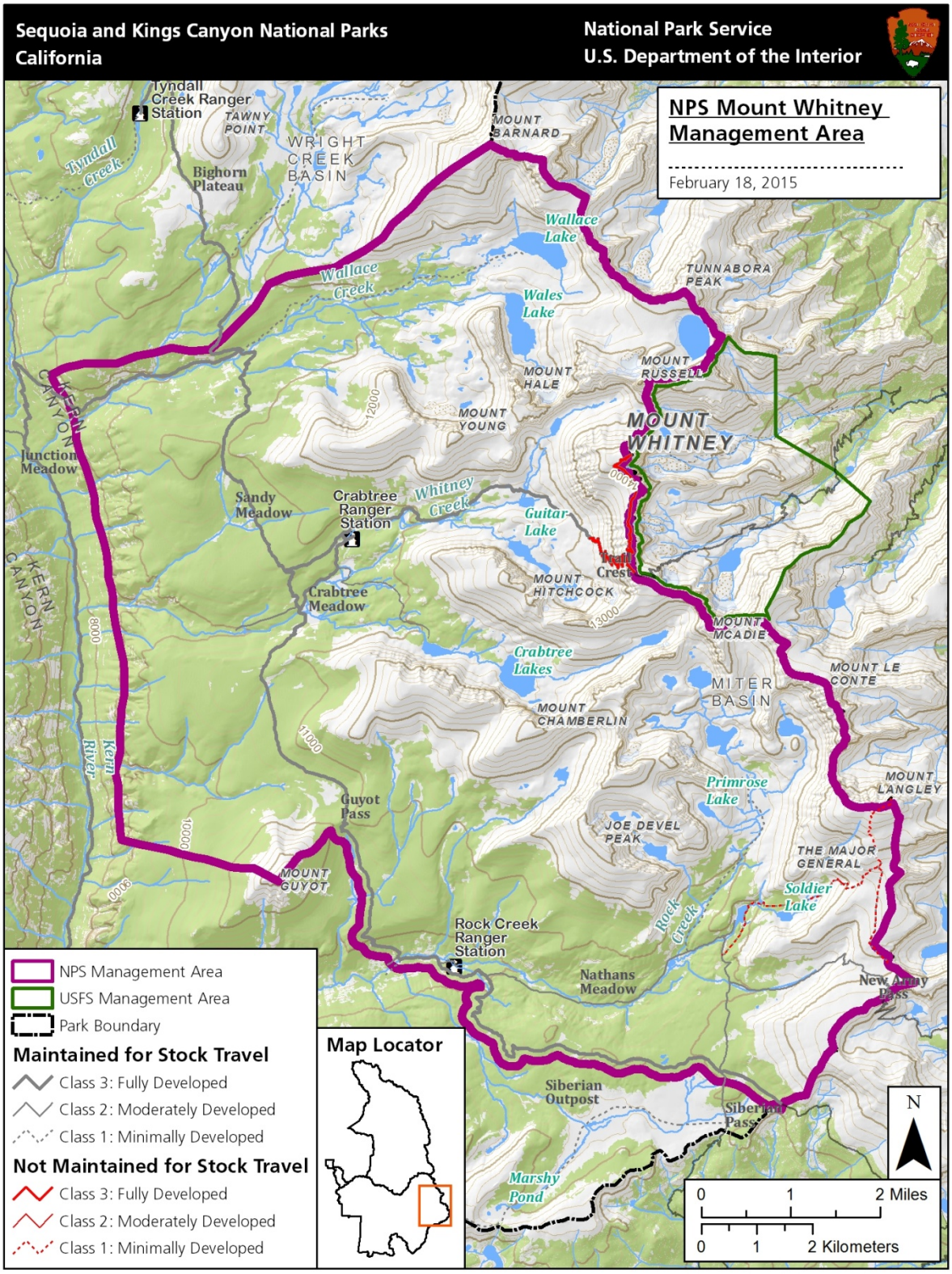



**Figure 11: NPS Mount Whitney Management Area**

**Table 22: Levels and Types of Commercial Services under Alternative 2**

| Activity | | Proposed Allocation of Commercial Service Days |
|---|---|---|
| **Total Visitor-use Days** – private and supported by commercial services (this does not take into account use by PCT and JMT visitors that are not recorded by the parks' wilderness permit system). | **Proposed Visitor Capacity under Alternative 2**<br>111,000 average<br>134,000 maximum | For all, day and overnight,<br>non-stock and stock-based: 8,400 |
| **Non-stock Activities**<br>Backpacking and Hiking Trips.<br>Overnight Camping – gear support by human porters<br>Climbing and Mountaineering (summer and winter).<br>Oversnow Travel (ski and snowshoe touring and winter camping – winter only [Nov. 15 to Apr 15]). | Wilderness-wide: activities that are supported by non-stock based commercial services. | For all, day and overnight, non-stock based services: 5,040<br>(60% of all commercial services) |
| | Mount Whitney Management Area: activities that are supported by non-stock based commercial services. | Of the above total allocation, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 930 |
| **Stock-based Activities**<br>Stock trips – riding, packing, day rides and overnight camping with stock.<br>Overnight Camping – gear support, including stock spot and dunnage | Wilderness-wide: activities that are supported by stock-based commercial services. | For all, day and overnight<br>stock-based: 3,360<br>(40% of all commercial services) |
| | Mount Whitney Management Area: activities that are supported by stock-based commercial services. | Of the above total allocation, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 500 |

The Bearpaw Meadow High Sierra Camp and the Pear Lake Ski Hut are allowable non-conforming commercial enterprises that may continue operation within potential wilderness as authorized by Congress. The Bearpaw Meadow High Sierra Camp would continue to be operated at near its current level of 1,700 use days by a park concessioner.

The Pear Lake Ski Hut would continue to be operated at near its current level of 1,500 use days during the winter months as a ski hut (lodging facility) by a cooperating association under a cooperative agreement.

## SUMMARY OF SITE-SPECIFIC ACTIONS

Under alternative 2, management would be modified in specific areas to protect wilderness character. The locations, concerns and issues, and potential management actions that may be necessary to reach or maintain desired conditions are listed in table 23 on the following pages.

**Table 23: Area-specific Management Actions under Alternative 2**

| Location | Issue | Potential Management Actions |
|---|---|---|
| Pacific Crest Trail / John Muir Trail | These popular trails receive consistent use throughout the snow free months, with the JMT getting its heaviest use from mid-July into early September.<br>The goal of summiting Mount Whitney is the primary driver with many people hiking the full 212 miles of the JMT (starting in Yosemite National Park), or taking the shorter route over Cottonwood Pass and north on the PCT to the JMT.<br>Indications are that use is increasing on the JMT, decreasing opportunities for solitude. | The NPS would coordinate with Yosemite National Park and the USFS to improve the quota system for the JMT and PCT. Quotas may be reduced at certain trailheads.<br>In specific, popular locations, stock users may be required to camp in designated stock camps. These areas may include Woods Creek Crossing, Rock Creek Crossing, and Big Pete Meadow. If designated as required stock camping site/area, hiker camping would be prohibited.<br>A camping night-limit may be established in the Evolution Valley and/or Evolution Basin areas along the JMT if conditions warrant.<br>A 2-night limit would apply along the JMT from Woods Creek Crossing to Vidette Meadow (at any one location), at Charlotte Lake, and Guitar Lake. There would be a 1-night limit at Rae Lakes (per lake).<br>Selected meadows would be closed to grazing because of sensitive resource conditions and/or to provide opportunities to view ungrazed meadows along the JMT: Bighorn Plateau and Meadow 0.6 mile south of Bighorn Plateau, Darwin Meadow, Grouse Meadow, Guitar Lake Meadow, Guyot Creek Meadow, Lower Crabtree Meadow, Taboose Pass Meadow, and Upper LeConte Canyon. |
| Lamarck Col/Darwin Canyon | This relatively difficult off-trail route is popular to reach the Sierra Crest and spectacular alpine scenery in a short period of time. Inyo National Forest allows up to 15 people per day up this route from the trailhead, and many other backpackers hike the loop between South Lake and North Lake, entering the parks via Bishop Pass and exiting via Lamarck Col (or vice versa). This level of use is increasing and has the potential to create impacts on solitude and the sensitive alpine environment. | A Class 1 trail would be established to manage impacts from foot traffic in this area (stock would continue to be prohibited).<br>A maximum hiker party size of eight people for day and overnight users would be adopted for the entire area (this includes the Class 1 trail area).<br>Destination quotas may be applied for this area. |
| Bishop Pass into Dusy Basin | Bishop Pass is a popular access route into the high Sierra, and to a scenic alpine basin. Inyo National Forest allows up to 36 people per day up this trail from the trailhead, with up to 15 additional people affiliated with commercial service providers. Potential exists for more than 100 people at a time camping in the basin during high season. High visitor use reduces opportunities for solitude and camping proliferation of campsites may be impacting the sensitive alpine environment. | The NPS would work with Inyo National Forest to manage the quota from the east side over Bishop Pass.<br>Pack-out waste kits would be recommended in this area. A maximum off-trail party size of eight would be adopted for this area.<br>Designated sites or designated camp areas may be established in Dusy Basin.<br>A 2-night limit would apply in Dusy Basin (basin-wide).<br>Stock would be allowed for day-use/pass through travel only (no grazing or camping with stock). |

**Table 23: Area-specific Management Actions under Alternative 2 (continued)**

| Location | Issue | Potential Management Actions |
|---|---|---|
| Rae Lakes Loop | The Rae Lakes Loop is one of the most popular loop hikes in Kings Canyon National Park. It is accessed from two west-side trailheads, Paradise Valley and Bubbs Creek – each with a quota of 25 people per day. The quotas fill regularly on weekends and in late August. This 42-mile loop (of which the east leg is also the PCT/JMT) is also accessed by Kearsarge Pass to the east (from Inyo National Forest with a trailhead quota of 60 people and up to an additional 15 people with commercial service providers).<br>Potential exists for more than 200 people to be camping in a 12-mile long stretch from Woods Creek Crossing to Lower Vidette Meadow (the east leg of loop).<br>High visitor use reduces opportunities for solitude and leads to camping impacts along this loop trail. | Trailhead quotas may be reduced. Additional destination quotas may be added for select locations along the Rae Lakes Loop. The NPS would work with Inyo National Forest to manage the quota from the east side over Kearsarge Pass.<br>Existing designated campsites at Lower Paradise Valley would be retained. Additional designated campsites or camp areas may be established at Middle and Upper Rae Lakes, and Woods Creek Crossing.<br>A 2-night limit would continue to be applied at Charlotte Lake, Paradise Valley (valley wide), and along the JMT from Woods Creek Crossing to Vidette Meadow (at any one location).<br>A 1-night limit would continue to be applied at Rae Lakes (per lake).<br>The Rae Lakes Basin would be open to stock for travel only (no camping or grazing). Sixty Lake Basin would be open to stock travel to a point approximately 1.8 miles from the JMT. Stock parties in Sixty Lake Basin would be limited to a combined party size (stock and people) of 8. |
| Mount Whitney Management Area | Mount Whitney is the highest point in the lower 49 states. There is trail access all the way to the summit. In addition to those hiking to it from the west via the PCT and JMT (see above) and the HST (see below), there is also access from the east side regulated by Inyo National Forest.<br>Inyo National Forest allows up to 100 day-hikers and 60 overnight campers to leave from the Whitney Portal Trailhead to attempt the 11 miles and 5,900' elevation gain to reach the summit. In addition, 10 private individuals and 8 people supported by commercial service providers are allowed up the North Fork Lone Pine Creek per day (this leads to the summit of Mount Whitney via the technical Mountaineers' Route). It is not uncommon for there to be 50 to 75 people on the summit at any one time in early-to-late afternoon and to encounter well more than 100 people on the trail while headed up or down the mountain in a day. Inyo National Forest fills its quota capacities from Whitney Portal 95% of the time during the early June to mid-October period. Inyo National Forest also has an exit quota on the Trail Crest / Whitney Portal Trail that allows only 25 people, in addition to those coming up the trail, to exit at Whitney Portal. This has the effect of distributing use to points west of Mount Whitney in Sequoia National Park.<br>Opportunities for solitude and campsite conditions are being impacted in the Mount Whitney area. | The NPS would work with the USFS (Inyo National Forest) to assess and potentially reduce both day-use and overnight trailhead and exit quotas for Mount Whitney and to more effectively coordinate the quota system. Destination quotas may be implemented at Guitar Lake.<br>Pack-out waste kits may be required in the Mount Whitney area to minimize the need for privies and/or restrooms.<br>A maximum off-trail party size of eight would be adopted for this area.<br>Designated sites or designated camp areas may be established at Guitar Lake.<br>A 2-night limit would be applied at Crabtree (area-wide) and at Guitar Lake.<br>The portion of the JMT from the Crabtree Ranger Station to the base of Mount Whitney switchbacks would be open to overnight use by walking parties with burros or llamas, or day-use only for parties with horses or mules. No stock use would be allowed above the base of the switchbacks.<br>Lower Crabtree Meadow and all areas above the Crabtree Ranger station would be closed to grazing. A 10-head limit for administrative and commercial parties would be applied at Upper Crabtree and Sandy Meadows. Lower Whitney Creek (Strawberry) Meadow would be open to grazing by private parties only.<br>The levels of commercial services allowed in the Mount Whitney management area would be reduced. |

**Table 23: Area-specific Management Actions under Alternative 2 (continued)**

| Location | Issue | Potential Management Actions |
|---|---|---|
| High Sierra Trail | This 60-mile west-to-east route is accessed from the Giant Forest of Sequoia National Park and eventually reaches the summit of Mount Whitney. Its daily quota of 30 fills regularly and is supplemented by others leaving to do a very similar route from nearby Wolverton (over Panther Gap). It is one of the primary "feeders" of the Mount Whitney area.<br>Opportunities for solitude and campsite conditions on this trail are being impacted by high levels of visitor use. | Trailhead quotas from Crescent Meadow and Wolverton (Alta) as they relate to Mount Whitney access may be reduced.<br>Pack-out waste kits may be required at certain areas. The existing designated camp area at Bearpaw Meadow would be retained.<br>A 1-night camp limit would apply at Hamilton Lake.<br>Selected meadows would be closed to grazing because of sensitive resource conditions and/or to provide opportunities to view ungrazed meadows along the HST: Chagoopa Plateau #3 Meadow, Guitar Lake Meadow, Kern Hot Spring Meadow, and Lower Crabtree Meadow. |
| Lakes Trail (from Wolverton) Emerald and Pear lakes | The Lakes Trail provides a relatively easy access to the subalpine Emerald and Pear lakes, and to the Tablelands. Current limits allow 25 people per night per lake basin to ensure some level of solitude in these areas. This area also has a large number of day-hikers accessing the Watchtower (rock cliff formation), and Heather Lake, as well as Emerald and Pear lakes. There are also significant day-hikers heading out the same trailhead and then branching off onto the Alta Peak Trail. | Existing destination quotas and designated campsites would be retained. In the future, if conditions warrant, day-use quotas could be implemented to ensure an acceptable level of solitude.<br>The existing privies would be evaluated and those beyond reasonable repair or in unsuitable locations would be removed. The existing restrooms may be removed in the future if maintenance and repairs are not cost effective. Pack-out waste kits would be tested and may be required in the future.<br>A lower day-use party size may be implemented.<br>A 3-night stay limit would apply (combined stay limit at both lakes).<br>The Watchtower Trail would be closed to stock travel. |
| Mineral King Area | This area has multiple trailheads for day-hiking and to reach overnight destinations. The most used trails are Sawtooth/Monarch (Trailhead quota of 20), Franklin Lakes/Pass (Trailhead quota of 30), and Eagle Lake (Trailhead quota of 25), with quotas filling occasionally.<br>Most "first" camps are 3 to 5 miles in and are very popular to camp at and to hike to as a day-hike opportunity. Encounters on close-in trails such as Sawtooth, Franklin and Eagle Lake, will exceed 100/day on an occasional basis during the summer. Opportunities for solitude on these trails can be limited during summer weekends. | Trailhead quotas may be reduced on the highest use trails. In the future, if conditions warrant, day-use quotas may be implemented.<br>Existing privies would be evaluated and those beyond reasonable repair would be removed. Pack-out waste kit requirements would be considered for implementation in areas where other methods are infeasible.<br>A lower day-use party size may be implemented for this area.<br>The first allowable camps on the Sawtooth/Monarch Trail would be located at Lower Monarch Lake (4.2 miles) and Crystal Lake (4.9 miles).<br>Stock access and grazing would be restricted on some of the highest use trails. The Monarch Lake Trail would be closed to stock travel. The White Chief, Eagle, and Mosquito Lakes Trails would be open to camping by walking parties with burros or llamas, or travel only for parties with horses or mules. Areas open to stock use in the Mineral King basin would be closed to grazing. |

**Table 23: Area-specific Management Actions under Alternative 2 (continued)**

| Location | Issue | Potential Management Actions |
|---|---|---|
| Mount Langley/ Rock Creek Area | Use of this area is increasing due to hikers seeking a 14,000-foot peak who could not get permits for Mount Whitney. Much of the pressure, and notable resultant impacts, on Mount Langley is from wilderness campers who day-hike to its summit from the John Muir and Golden Trout wildernesses of Inyo National Forest (out of Cottonwood Lakes Basin). Inyo National Forest has trailhead quotas of 60 for the Cottonwood Lakes Trail, with an additional 15 people allowed with commercial service providers (John Muir Wilderness and New Army Pass), and 40 total for the Cottonwood Pass Trail (Golden Trout Wilderness).<br>The Mount Langley area is being impacted from social trailing and opportunities for solitude in this area are decreasing. | The NPS would work with Inyo National Forest to manage the quota from USFS access points. Trailhead quotas may be reduced for trailheads providing access to this area.<br>A destination quota may be added for Mount Langley.<br>To address the social trailing and resulting resource damage, Class 1 trails would be constructed to the summit of Mount Langley from Army Pass, and from Soldier Lakes to the Mount Langley Trail. Informal trails would be rehabilitated.<br>A two-night stay limit would be applied at Upper and Lower Soldier lakes (combined).<br>A maximum party size of eight would be adopted for this area (this also applies to the Class 1 trail area – for day and overnight use).<br>Grazing at Lower Soldier Lake would be limited to private parties only. |

**The Sierra Nevada – John Muir called it the "range of light"**

On the following pages, figure 12 depicts the wilderness trail system for alternative 2, figure 13 depicts campfire restrictions for alternative 2, and figures 14a and 14b depict stock access and grazing restrictions for alternative 2.

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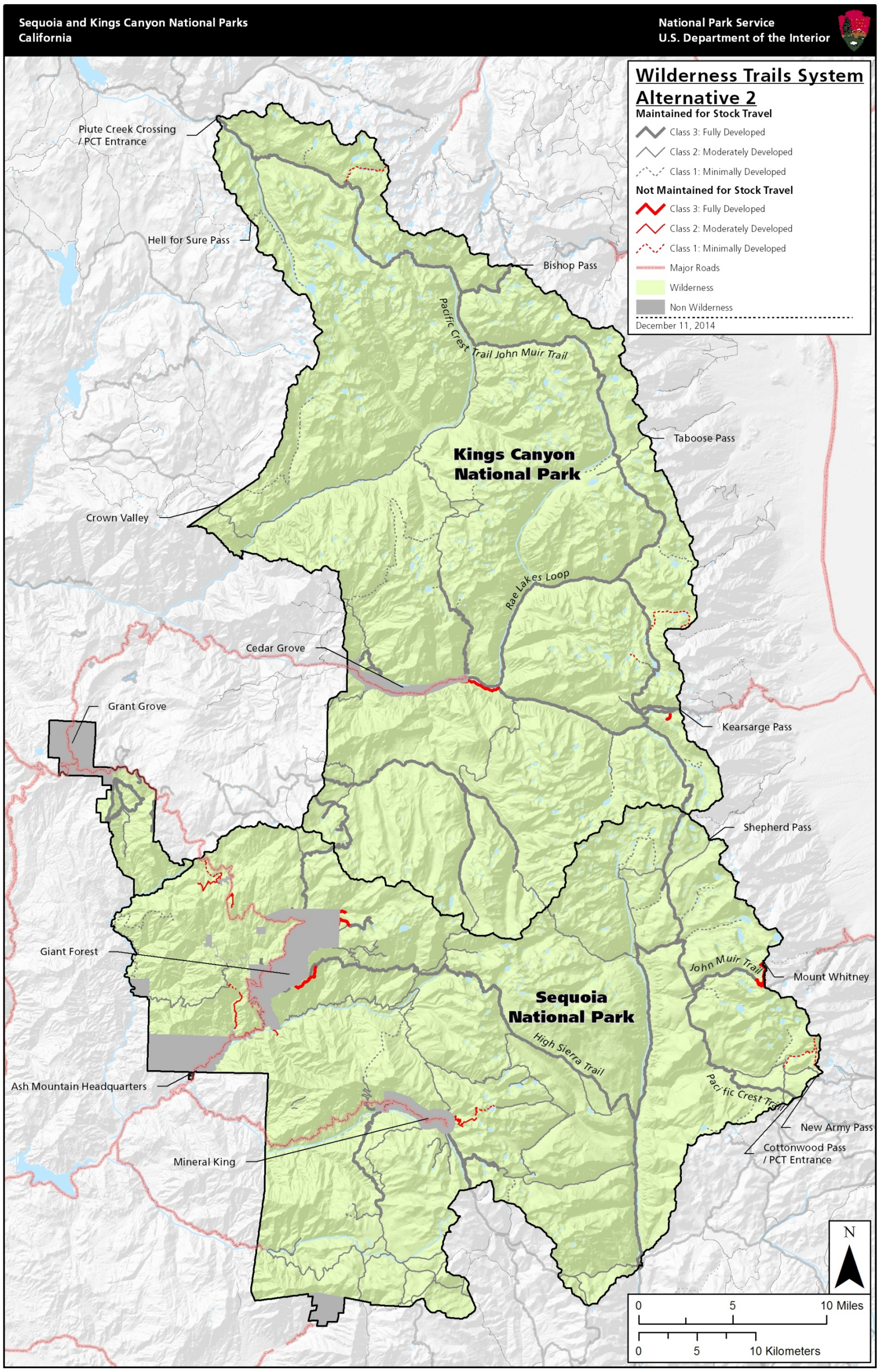


**Figure 12: Wilderness Trails System – Alternative 2 (NPS Preferred Alternative)**

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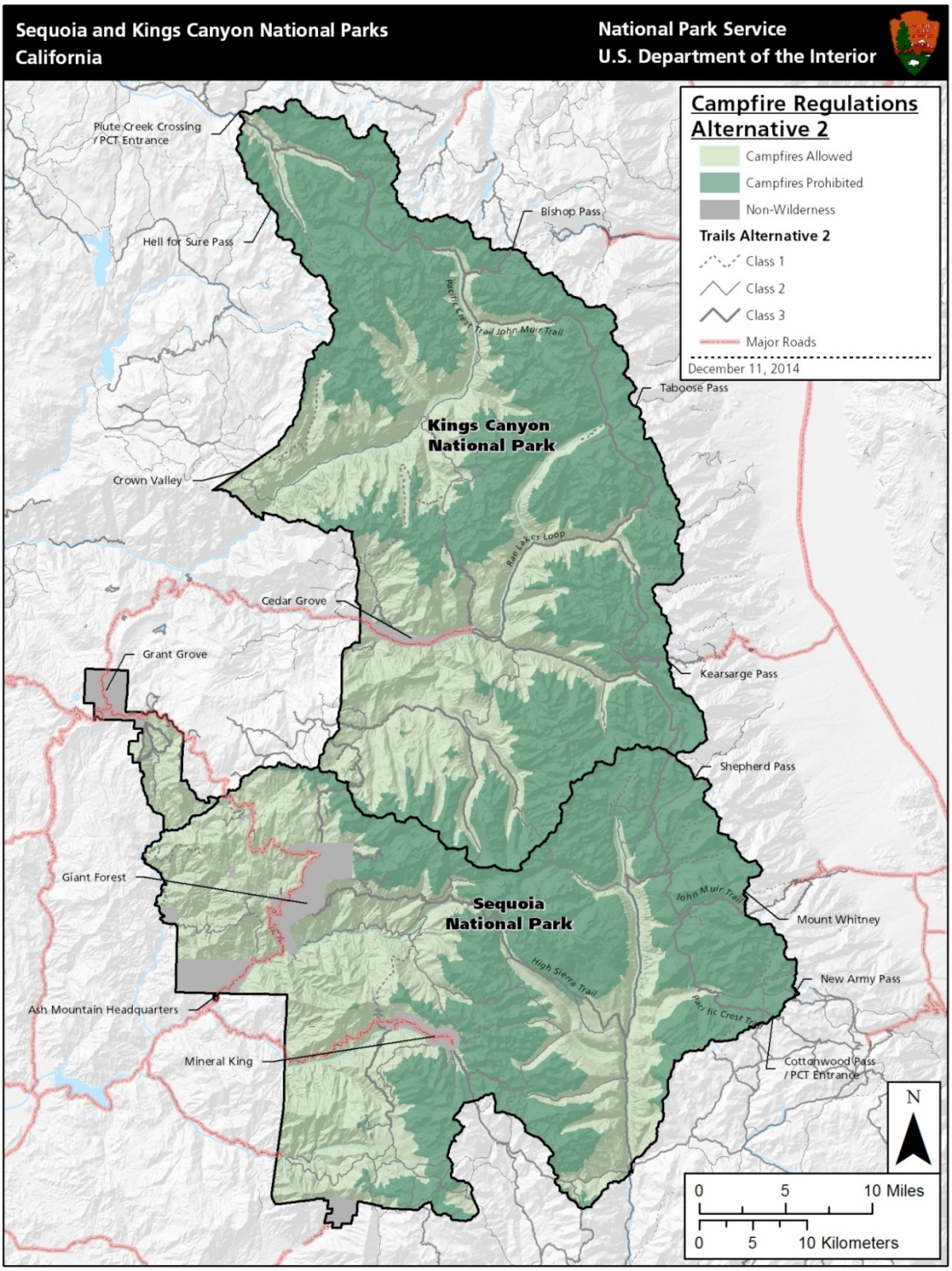
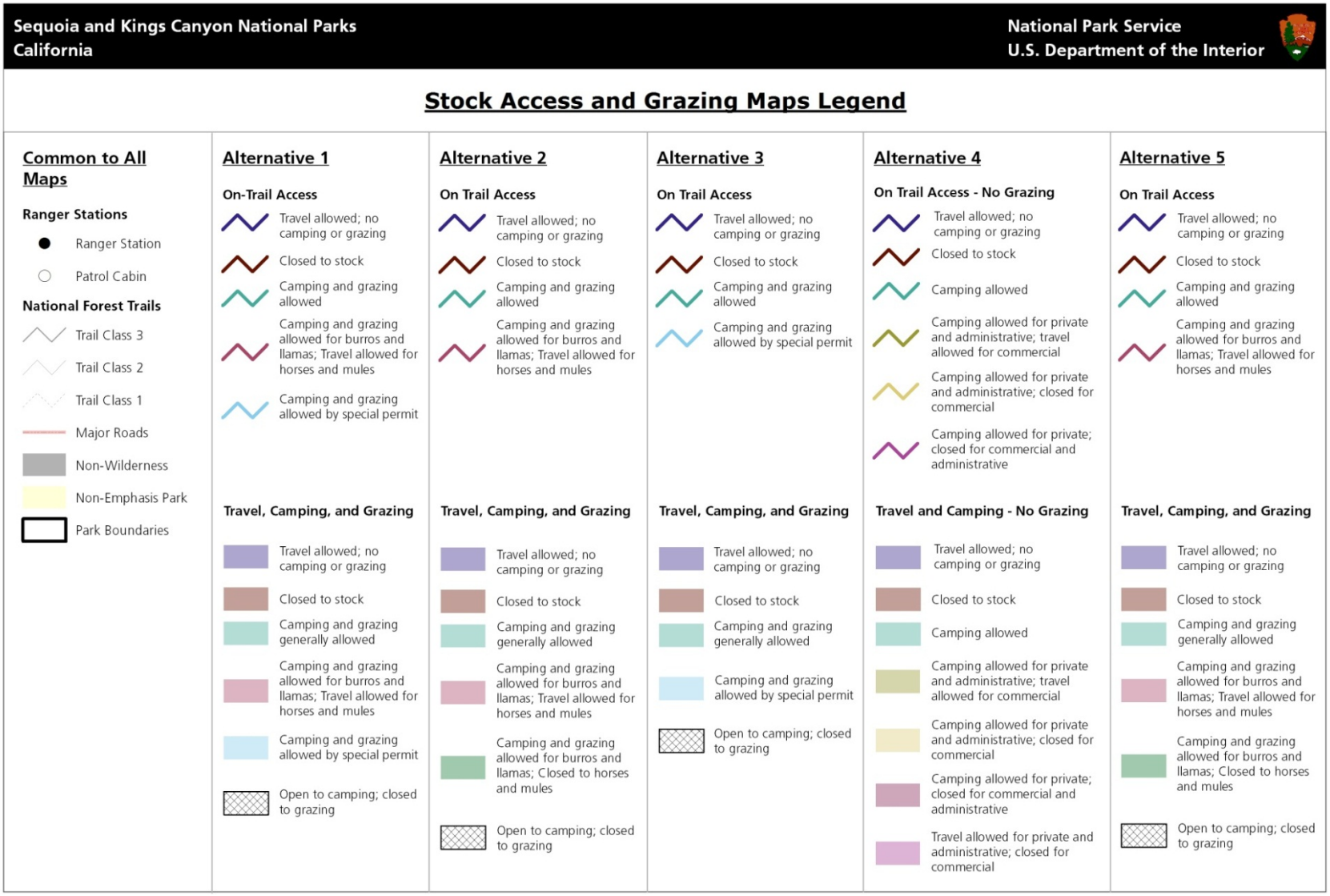



**Figure 13: Campfire Regulations – Alternative 2 (NPS Preferred Alternative)**

No campfires above 10,000 feet in Kings Canyon National Park and Kern River drainage;
no fires above 9,000 feet in Kaweah and Tule river drainages.
(see figure 23, page 297, for drainages)




**Legend to Accompany Figure 14a: Stock Access and Grazing – Alternative 2 (NPS Preferred Alternative), Kings Canyon National Park**

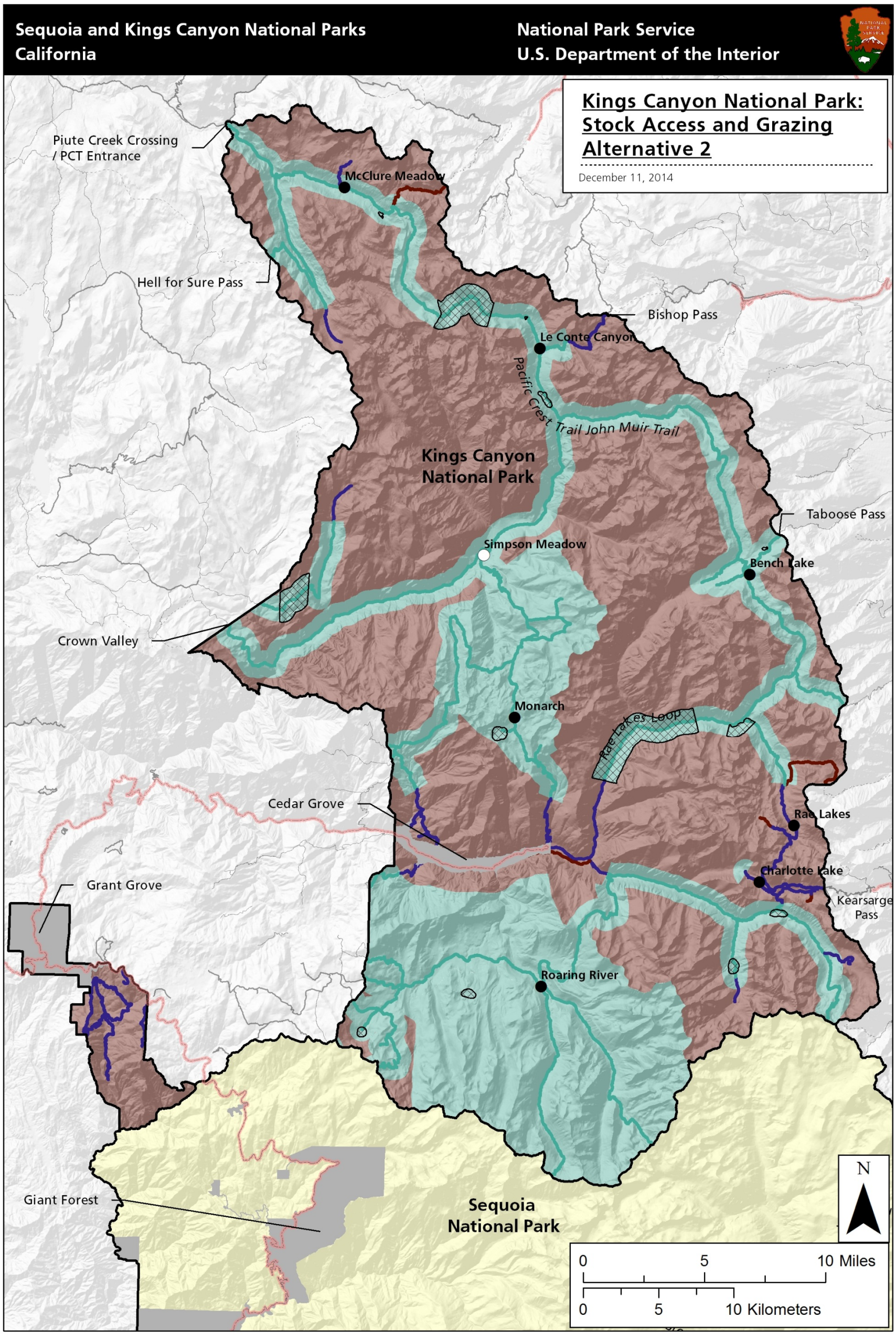



**Figure 14a: Stock Access and Grazing – Alternative 2 (NPS Preferred Alternative), Kings Canyon National Park**

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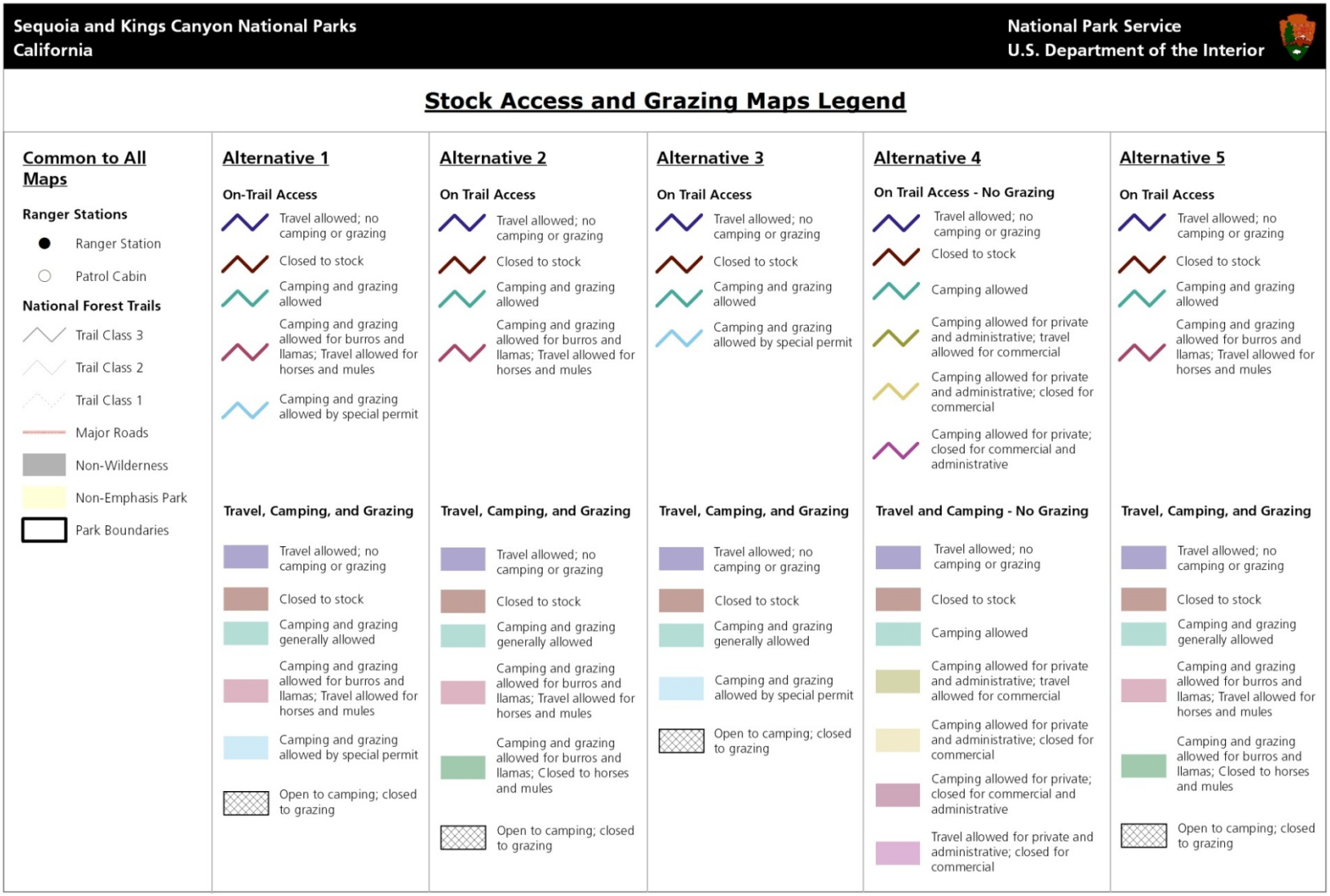


**Legend to Accompany Figure 14b: Stock Access and Grazing – Alternative 2 (NPS Preferred Alternative), Sequoia National Park**

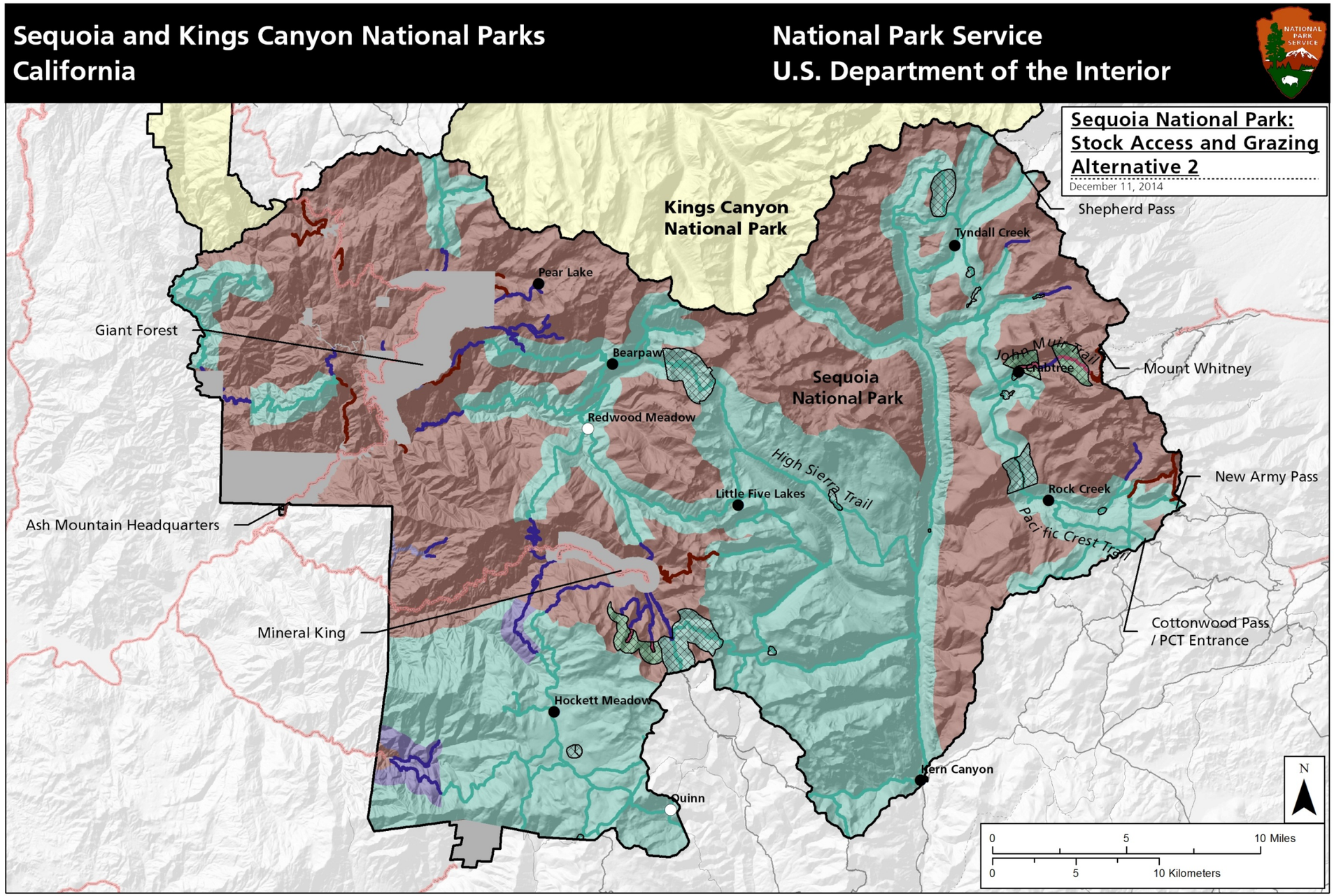


**Figure 14b: Stock Access and Grazing – Alternative 2 (NPS Preferred Alternative), Sequoia National Park**

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# ALTERNATIVE 3: PROVIDE MORE OPPORTUNITIES FOR PRIMITIVE RECREATION

## OVERVIEW

The overarching idea behind alternative 3 is that the WSP would focus on increasing opportunities for primitive recreation by allowing additional use, which would be expected to occur mostly in popular areas.

**Alternative 3 General Concept: Increased opportunities for primitive recreation through increased use.**

Allowing use to increase under this alternative would result in more visitors in the parks' wilderness. This would result in decreased opportunities for solitude and more visitors could have an increased impact on the resources. Therefore, to preserve the natural quality of wilderness, the popular use areas in wilderness would require additional development and restrictions on visitor behavior.

Quotas would generally remain at current levels in low-use areas, as there is no demand above current levels, but quotas would be increased for some of the most popular areas.

Most wilderness trails in the parks would remain open to stock under this alternative. Stock would continue to be allowed to travel up to 0.5 mile off maintained trails to reach campsites. Off-trail stock travel would continue to be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.

To increase access for visitors traveling with stock along the most popular trail corridors (JMT, PCT, and HST), additional controls would be placed on grazing, night limits, and party-size limits. In areas subject to high visitation or vulnerable to resource impacts, designated camping areas may be established.

There would be increased opportunities for commercial services commensurate with increased use (types of services and amount of use). Increased commercial services would be necessary to support a wider range of visitor skill levels and recreational opportunities.

## KEY ELEMENTS OF ALTERNATIVE 3

This alternative addresses the key elements as described below.

### Element 1: Visitor-use Levels

**Planning Objective**: Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character. In this alternative, opportunities for visitor use and enjoyment of wilderness would be increased by permitting more visitor use.

*Permits and Quotas* — Daily trailhead quotas would be increased for some trailheads by up to 10%, including those that have the highest use. At trailheads where quotas do not currently fill, the quotas would remain the same, effectively allowing for increased use in those areas. Existing destination quotas

would continue to be applied. No additional destination quotas would be added and no day-use permits/quotas would be implemented.

The NPS would continue to work with the USFS to manage and improve the quota and permitting systems, to add trailheads currently missing from the quota system (e.g., Tehipite Valley and Kern River), and on other relevant cooperative cross-boundary wilderness-management issues.

*Visitor Capacities and Encounter Standards* — Alternative 3 presents the highest use levels that would be accommodated across the range of action alternatives. Use levels would be allowed to increase by increasing the numbers of permits issued in some areas (through increased trailhead quotas). The various types of use proposed under alternative 3 would remain the same as in alternative 2. To meet the planning objectives for this alternative, the overnight estimated visitor capacity wilderness-wide for these parks would be 175,000 VUDs per year. Ten-year average overnight use would be limited to 141,000–147,000 VUDs/year. This increased amount is more than 50% below peak historic use levels. While use levels would be allowed to reach the established capacities under this alternative, there are social, economic, and other factors that may lead to actual use being below capacity. Each year, total annual VUDs would be discussed and analyzed by an interdisciplinary group at an annual meeting on wilderness management. If determined to be out of standard, management actions to bring the measure back into standard would be adopted. Appendix A contains a detailed description of the methods used to develop the visitor capacity framework for this WSP.

As explained in alternative 2 and appendix A, the parks would adopt a measure of the number of people encountered per hour (EPH) on trails and would take action based on established standards. For this measure, each trail would be assigned to one of four encounter-rate standards: very high use (primarily Mount Whitney and day-use areas); high use (generally Class 3 trails, with some exceptions); moderate use (generally Class 2 trails, with some exceptions); and low use (generally Class 1 trails with some exceptions). Each has a specified EPH that serves as a standard. The standards for alternative 3 are shown in table 24.

**Table 24: Encounters per Hour Standards for Alternative 3**

| Measure | Standard[1] | | | |
|---|---|---|---|---|
| | Very High | High | Moderate | Low |
| Trail Encounters – People Encountered Per Hour – by area | 59 | 33 | 20 | 8 |

[1]Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September) for selected monitored trail segments.

Currently, visitors may experience encounter rates higher than the proposed standard in the areas detailed below. The actions described under this alternative, along with the management actions described in the "Mitigation Common to All Alternatives" section in this chapter and in appendix A, would be taken to return the areas to within standards (table 25 on pages 147-148). [Note: Trail encounter data from 2012 to 2014 was collected opportunistically by park staff and volunteers. As a result, a larger proportion of samples occurred on weekend days and mid-day times than would be expected from a random or structured sample. A standardized sampling protocol will be developed upon completion of the WSP, and areas that are shown as out-of-standard and near standard in table 25 would be prioritized for re-sampling.]

**Table 25: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 3**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Very High | 59 | Mount Whitney | In standard | |
| | | Road's End | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | High Sierra Trail (Crescent Meadow to Wolverton Cutoff Junction) | In standard | |
| High | 33 | Lakes Trail | In standard | |
| | | Mineral King Valley | In standard | |
| | | Little Baldy Trail | In standard | |
| | | Paradise Creek Trail | In standard | |
| | | Redwood Canyon | In standard | |
| Moderate | 20 | Evolution Basin & Valley (JMT/PCT) | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | Rae Lakes/JMT | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | Mount Langley approach | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions; consult with USFS regarding area use levels. |
| | | Crabtree Ranger Station to Trail Crest | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | Rae Lakes Loop — Lower Portion | In standard | |
| | | West side of Kearsarge Pass | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | Dusy Basin | In standard | |
| | | Twin Lakes Trailhead to Silliman Creek | In standard | |
| | | High Sierra Trail (Wolverton Cutoff Junction to JMT Junction) | In standard | |
| | | Rock Creek | In standard | |
| | | Little Five | In standard | |

**Table 25: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 3 (continued)**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Low | 8 | Sixty Lake Basin Trail (Rae Lakes 3) | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; implement area specific restrictions. |
| | | Crabtree Lakes (Crabtree 1) | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; implement area specific restrictions. |
| | | All other trails not identified above | In standard[2] | |

[1] Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September).
[2] Inferred from a small number of samples.

### Element 2: Trails

**Planning Objective**: The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use (levels of visitor use would be increased over current levels under this alternative).

Most park trails are already designed and constructed to provide for appropriate access while preserving wilderness character. Many existing trail segments are inadequately constructed to support the projected use patterns of this alternative, and would be targeted for further development. A few trails would be designated hiking-only trails where there are known threats to sensitive resources, unacceptable visitor safety issues, or existing user conflicts between stock and hiker/backpacker parties. Where the designated unmaintained routes listed in the 1986 SUMMP are still passable to stock, and where stock travel does not pose undue threats to resources, they would be designated Class 1 or Class 2 trails and targeted for appropriate construction and maintenance. Other designated unmaintained routes would be abandoned and landscape restoration considered. Summary tables at the end of this chapter give a comparison of trail classes by mileage and use under each alternative. Figure 15 depicts the wilderness trail system for alternative 3 and can be found on page 163. More details on the trail management and classification system can be found in appendix K.

With additional site-specific planning and compliance, new Class 1 trails could be established to protect resources when visitor use may cause undue impacts. For example, establishing Class 1 trails on Lamarck Col and Mount Langley would provide resource protection in areas with increasing visitation.

### Element 3: Campfires

**Planning Objective**: Visitors would have the opportunity to enjoy campfires where campfires are compatible with the protection of vegetation and downed wood resources. In this alternative, increased visitor use would be accommodated by limiting campfire use to areas with higher wood productivity.

Recreational campfires would be allowed in the foothill and montane forests and up to 9,000 feet wilderness-wide. With increased use expected wilderness-wide at high elevations, a parkwide fire restriction of 9,000 feet would be implemented to protect the ecologically and scientifically important wood resources.

In addition, site-specific restrictions would be implemented in the most popular areas, including:

- PCT/JMT
- Rae Lakes Loop
- HST
- Mineral King Valley (East Fork Kaweah River drainage)
- Rock Creek drainage
- Redwood Canyon area

This alternative allows recreational campfires in 293,840 acres of 837,806 acres of wilderness (35%). Figure 16 depicts campfire restrictions for alternative 3 and can be found on page 165.

**Element 4: Food Storage**

**Planning Objective**: Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food. In this alternative, increased visitor use in areas of known human/bear activity would drive the need for additional food-storage boxes.

All existing 86 food-storage boxes would be retained. To address higher levels of use, there would be up to 35 additional food-storage boxes added at key locations along the JMT and near highest-use camp areas. The locations of some existing food-storage boxes may shift to more appropriate, less sensitive locations to protect resources (e.g., moved away from streams and lakeshores).

Existing food-storage requirements would be modified based on the locations of additional food-storage boxes. A food-storage box at North Dome would be added (this location is outside of wilderness but serves wilderness visitors).

Additional portable container requirements may be implemented in specific areas if the need arises.

Locations for additional food-storage boxes under alternative 3 (all locations are in Kings Canyon National Park; locations could have more than one food-storage box added):

- Bench Lake junction
- Big Pete Meadow
- Cement Table Meadow
- Deer Meadow
- Dusy Basin
- Dusy Bench
- Evolution Lake
- Evolution Meadow
- Golden Staircase (base)
- Grand Palace Hotel Meadow
- Grave Meadow

- Grouse Meadow
- JMT/Bishop Pass trail junction
- Little Pete Meadow
- Lower Ranger Meadow
- Marjorie Lake
- McClure Meadow
- Palisade Lakes outlet
- JMT/Middle Fork Kings trail junction
- Redwood Canyon
- Sapphire Lake
- Shorty's Meadow outlet
- Simpson Meadow
- South Fork crossing
- State Lakes outlet
- Twin Lakes (Woods Creek)

**The restroom near Emerald Lake**

**Element 5: Human-waste Management**

**Planning Objective**: Human waste would not contaminate water or create unsanitary or unsightly conditions. Reflecting increased visitor use under this alternative, additional privies would be provided in targeted areas where the risk of contamination is high.

Cat-holes would continue to be required in areas with no privies/toilets. Pack-out waste kits would be required in the Mount Whitney area.

At highest use areas where soil development is inadequate for cat-holes, privies, and restrooms would be retained. New privies would be considered for highest use areas (e.g., Heather Lake) and in locations where designated campsites are established.

The NPS would consider implementation of new technologies for human-waste management as they are developed in the future. The use of new technologies may require on-site planning and compliance. Some technologies may require visitors to be more self-sufficient. Table 26 provides a list of public privies and restrooms and the justification for retaining or removing them under alternative 3.

**Table 26: Public-use Privies and Restrooms Retained, Removed, or Added under Alternative 3**

[Note: Number of privies/restroom is indicated in parentheses when more than one privy/restroom exists.]

| Privy/Restroom Name/Location Listed North to South | Alternative 3 Actions | Discussion and Justification |
|---|---|---|
| Woods Creek Crossing | Retain | Popular and concentrated use and primary stopping point for multiple trip itineraries. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Paradise Valley (3 – 1 each in Upper, Middle, and Lower) | Retain two privies (Upper and Lower) and remove privy at Middle Paradise | Less use in Middle Paradise Valley than Upper and Lower Paradise Valley. Removal of designated campsites in Middle Paradise under this alternative makes it more appropriate to disperse use by not having a privy available. Soils are suitable for cat-holes. |
| Sphinx | Retain | Use may increase under this alternative. |
| Roaring River area (3) | Remove privy at Sliding Box Camp; retain privy at Stewart E. White Camp (near RS). Remove privy at Knoll camp. | Less use at Sliding Box Camp and it is a large area with suitable soils for cat-holes. Stewart E. White Camp location has long-established and concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). Very low use at Knoll camp. |
| Twin Lakes (Clover Creek) | Retain | Popular area close to busy trailhead. Taking out the privy without a waste management alternative would result in impacts because of concentrated use. Use may increase under this alternative. |
| Heather Lake | Add one privy | Sensitive area with concentrated day-use (no overnight use at Heather Lake). Use may increase under this alternative. |
| Pear Lake (1 restroom) | Retain | Existing restrooms are a large development in wilderness, require high levels of maintenance, and are not functioning properly. Popular area where rocky shallow soils do not support use of cat-holes. |
| Emerald Lake (1 restroom) | Retain | Existing restrooms are a large development in wilderness, require high levels of maintenance, and are not functioning properly. This is a popular area where rocky shallow soils do not support use of cat-holes. |
| Bearpaw Area (3) | Retain all privies | Popular area and a well-established designated camp area. A privy is necessary near the designated backpacker camp to protect natural quality of wilderness and protect solitude (from litter associated with human waste). A privy is necessary near the Bearpaw Meadow High Sierra Camp to protect natural quality of wilderness and protect solitude (from litter associated with human waste). Use may increase under this alternative. |
| Hamilton Lakes | Retain | Popular area with rocky shallow soils not suitable for digging cat-holes. |
| Crabtree Area | Retain | Popular area where privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |

**Table 26: Public-use Privies and Restrooms Retained, Removed, or Added under Alternative 3 (continued)**

[Note: Number of privies/restroom is indicated in parentheses when more than one privy/restroom exists.]

| Privy/Restroom Name/Location Listed North to South | Alternative 3 Actions | Discussion and Justification |
|---|---|---|
| Rock Creek Area | Add one privy at Rock Creek crossing area | Popular and concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Kern Hot Spring | Retain | Popular and concentrated use. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Upper Funston | Remove | Low-to-moderate use. Large area with suitable soils for cat-holes. |
| Monarch Lakes | Retain | Popular and concentrated use in this area. Rocky shallow soils do not support use of cat-holes. This is a launching point for longer trips. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Eagle Lake and Mosquito Lakes (2 – 1 privy at each location) | Retain | Popular concentrated-use area. Generally visitors are day hikers or stay for one to two nights. Not a launching point for longer trips. Use may increase under this alternative. |
| Franklin Lakes | Retain | Popular and concentrated use in this area. Rocky shallow soils do not support use of cat-holes. This is a launching point for longer trips. A privy is necessary to protect the natural quality of wilderness and protect solitude (from litter associated with human waste). |
| Hockett Meadow | Remove | Low use and soil type is appropriate for cat-holes. |
| Dusy Basin, Evolution Valley, Guitar Lake, Kearsarge Lakes Basin, Mineral King Lake Basins, Middle and Upper Rae lakes, Redwood Canyon, Woods Creek Crossing, and other points along the PCT/JMT | Potential new privies | Affiliated with designated campsites. |

### Element 6: Party Size

**Planning Objective**: Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups. In this alternative, an emphasis on increasing opportunities for primitive recreation would allow for an increase in party size in many areas.

To allow a greater diversity of recreational opportunities in the parks' wilderness, party-size limits would be increased to generally match those of the surrounding USFS wilderness lands. Limits would be lower in some areas. Tables 27 and 28 on the next page present party size limits under alternative 2.

**Table 27: Party-size Limits for Hikers and Boaters for Alternative 3**

| Type of Trip | Maximum Party Size |
|---|---|
| On-trail (day use) | 25 |
| On-trail (overnight use) | 15* |
| Off-trail (day and overnight use) | 15* |
| Area-specific | Existing temporary party-size limits would be removed (party size of 8).<br>A party-size limit of four would be implemented for camping at North Dome.<br>A party-size limit of 10 would be retained for Redwood Canyon. |

*Consistent with neighboring USFS areas.

**Table 28: Party-size Limits for Stock Parties for Alternative 3**

| Type of Stock Trip | Maximum Party Size for People and Stock |
|---|---|
| Day rides (not including spot and dunnage) | People: 25<br>Stock: 25<br>Combined: 50 |
| On-trail (including spot and dunnage trips that support overnight use) | People: 15<br>Stock: 25*<br>Combined: 40 |
| Off-trail (in areas specifically designated for day and overnight stock use) | People: 15<br>Stock: 25*<br>Combined: 40 |
| Area-specific | 8 head stock maximum in Milestone Basin and by special permit only would be retained.<br>Redwood Canyon would have a party-size limit of 10 stock for day-use. |

*Consistent with neighboring USFS areas.

### Element 7: Camping/Campsites and Night Limits

**Planning Objective**: Visitors would have the opportunity to choose camping locations, except in areas where camping would result in unacceptable impacts. In this alternative, increased visitor use would require an increase in camping restrictions.

To allow a greater diversity of recreational opportunities where risks of resource impacts are low, some areas close to the frontcountry would be opened to camping (e.g., North Dome). In addition, and with site-specific compliance, one or more universally accessible campsites could be constructed near a trailhead (e.g., near the confluence of Bubbs Creek and the South Fork Kings River).

Existing and additional areas that are appropriate for stock camps would be identified, and the parks would recommend that visitors traveling with stock use those camps. In specific, popular locations, stock users may be required to camp in designated stock camps. If an area is designated as a required stock camping site/area, backpacker camping would be prohibited.

*First Allowable Campsite* — The first allowable campsites would be the same as described in alternative 2 (see the “First Allowable Campsites” section in alternative 2, table 19 on page 116).

*Length of Stay/Night Limits for All Campers (stock-supported and backpackers)* — All overnight camping would be limited to seven consecutive nights at a single location, 20 consecutive nights per trip, and 60 nights per year for individual visitors. Table 29 presents additional overnight limits.

**Table 29: Site-specific Exceptions to the Night Limits under Alternative 3**

| Location | Night Limits Exceptions (Consecutive Nights in one Location) |
|---|---|
| Charlotte Lake, Colony Mill Trail, Crabtree area, Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Guitar Lake, Hamilton Lake, Kearsarge Basin, Milestone Basin, North Dome, Paradise Valley, Redwood Canyon, and Lower and Upper Soldier lakes (combined) | 2-night limit |
| Current 1-night limit at Rae Lakes (per lake) would continue to apply.<br>There would be a 1-night limit at any one location on the JMT between Woods Creek Crossing and Vidette Meadow. | 1-night limit |

*Designated Campsites* — To preserve the unconfined aspect of recreation in the parks' wilderness, most areas would have no restrictions on where overnight visitors can camp, except to follow the Leave No Trace© practices to preserve the natural quality. However, the use of designated campsites/camp areas would be mandatory at Emerald and Pear lakes, Lower Paradise Valley, and Bearpaw Meadow. Additional sites may be designated in areas where factors such as concentrated use and limited suitable campsites create a risk of physical or social campsite impacts. Areas considered for new campsite designation under this alternative include Dusy Basin, Evolution Valley, Guitar Lake, Kearsarge Lakes Basin, Mineral King lake basins, Middle and Upper Rae Lakes, Redwood Canyon, Woods Creek Crossing, and other points along the PCT/JMT. Designation of campsites or areas would require site-specific analysis.

*Campsite Condition Standards* — As explained in alternative 2, a metric of aggregate campsite impacts (Weighted Value per Campable Mile, WVCM) would be adopted under all alternatives to ensure that the number of campsites and their condition does not exceed standards. The metric of WVCM would be used to measure campsite condition. Under alternative 3, the standard for WVCM would be: 1300 for high use subzones, 650 for moderate use subzones, and 325 for low use subzones. A monitoring plan would be developed to establish protocols and schedule monitoring frequencies to ensure that subzones remain within their applied standard.

Under alternative 3, one subzone (83-1 Guitar Lake) would be considered out of standard in the high use category, and one subzone (80-3 Shepherd Pass Lake) would be considered out of standard in the moderate category. All other subzones would be considered within standard. Management actions to return the subzones to within standards are included in the "Mitigation Common to All Alternatives" section in this chapter, for a map of campsite condition standards see figure 10, page 119; for information on determining campsite condition and standards, see appendix A, page A-15 and A-24.

**Element 8: Stock Use**

**Planning Objective**: Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character. Access and grazing would be managed to protect resources, provide other types of primitive recreation, and reduce conflict of user groups. Under this alternative, increased visitor use would result in a need for more stock structures and closure of selected off-trail grazing areas in order to protect resources.

Figures 17a and 17b depict stock access and grazing restrictions for alternative 3. Figure 17a shows stock access and grazing restrictions in Kings Canyon National Park and can be found on pages 166/167. Figure 17b shows stock access and grazing restrictions in Sequoia National Park and can be found on pages 170/171.

***Stock Access and Travel***

*On-trail* — Visitors traveling with stock would be allowed on most maintained trails (671 of 714 miles). Stock parties would be allowed to travel up to 0.5 mile from trails in areas where they are allowed to camp. In areas open to travel only, stock parties would be allowed to travel up to 100 yards from trails.

**A horse and mule atop Elizabeth Pass**

Approximately 565 miles of maintained trails would be open to camping with stock. Some trails would be open to stock parties for travel only, some would be open to use by special permit, and some would be closed to stock travel entirely for reasons including visitor safety, resource protection, and/or popular day-use by hikers. Trails with restricted stock access under alternative 3 are discussed below.

Trails open for travel only (106 miles; includes mileages to first camps):

- Admiration Point Trail
- Alta Trails
- Big Baldy Trail
- Buena Vista Trail

- Center Basin Trail (to Golden Bear Lake)
- JMT along Timberline Lake
- Kearsarge Lakes Trail
- Lake 11,092 Trail (shown as Lake 11,106 on older maps)
- Lake Reflection above the abandoned Harrison Pass Trail junction
- Lakes Trail (Hump Trail only)
- Little Baldy Trail
- Martha Lake Trail from 1 mile above Hell-for-Sure Junction
- Miter Basin Trail above Penned-up Meadow to a tie-up area at 11,300 feet in elevation below Sky Blue Lake.
- Muir Grove Trail
- Oriole Lake Trail
- Paradise Creek Trail
- Redwood Canyon area trails
- Upper Blue Canyon Trail
- Upper Sixty Lake Basin Trail
- Wallace Lake Trail above 11,200 feet in elevation
- White Chief, Eagle, and Mosquito Lakes trails
- Wright Creek Trail 11,200 feet in elevation

Trails open to camping by special permit (3 miles):

- Milestone Basin Trail

Trails closed to stock travel (43 miles):

- Baxter Pass Trail
- Bullfrog Lake Trail west of Kearsarge Lakes Trail
- Crabtree Lakes Trail (no travel above camp at 11,000 feet in elevation)
- HST from Crescent Meadow to Wolverton Cutoff
- Lamarck Col Trail
- Lower Sixty Lake Basin Trail
- Marble Falls Trail
- Monarch Lake Trail
- Mosquito Lakes Trail – upper lakes
- Mount Langley Trail

- Mount Whitney Trail – base of switchbacks to Trail Crest and summit
- Seville Lake Boy Scout Trail
- South Side Cedar Grove Sandflats Trail from Zumwalt Meadow Bridge to Bubbs Creek
- Sphinx Lakes Trail
- Tokopah Falls Trail
- Upper Soldier Lakes Trail
- Watchtower Trail

*Off-trail* — Stock parties would continue to be allowed to travel up to 0.5 mile from trails to reach camps. Travel more than 0.5 mile from maintained trails would continue to be allowed in four areas of the parks: on the Hockett Plateau, on the Monarch Divide, in the Roaring River drainage, and along the western side of the Kern River watershed south from the Chagoopa Plateau.

*Stock Grazing* — Grazing would be managed to maximize protection of resources while allowing visitors traveling with stock continued access to forage. Grazing would generally be allowed within 0.5 mile of maintained trails open to stock camping. Grazing would not be allowed in areas designated as open to stock travel only. Grazing would be generally prohibited in the off-trail travel areas with a few exceptions. Increased controls (such as head limits and night limits) could be implemented to prevent overuse in popular destinations.

Grazing would continue to be managed and informed by the results of the Stock Use and Meadow Monitoring Program, including the continued application of estimated grazing capacities, as described under alternative 2.

Areas closed to grazing would remain open to camping by visitors traveling with stock, but visitors would be required to hold and feed their animals. Administrative grazing would be managed to limit impacts on public grazing (Note: With rare exceptions, visitors are given preference for limited grazing resources).

The use of certified-weed-free forage in frontcountry areas, and of processed pellets, rolled grains, or fermented hay in wilderness, would be required as described under alternative 2.

The monitoring system described under alternative 2 and in appendix D would be employed to track use, document conditions, and provide information for preventing and mitigating impacts.

The meadows closed to grazing for scientific and social value by the SUMMP would remain closed. The meadows closed to grazing due to high visitation and resource concerns by the SUMMP would remain closed.

The following meadows located in cross-country travel areas which are otherwise closed to grazing would be open to grazing: Ansel Lake, Chagoopa Treehouse Meadow, Crytes Lakes, Laurel Creek Basin, Long Meadow (East Fork Ferguson Creek), Sugarloaf Creek Confluence, and West Fork Ferguson Creek (Log Meadows to Sheep Pen Meadows).

The following additional meadows which are otherwise open to camping with stock would be closed to grazing due to high levels of visitation and resource concerns: Crabtree Lakes (closed to stock access and grazing above the existing camp west of the lowest lake), Darwin Meadow proper, Forester Lake Meadow, Guyot Creek Meadows (expanding the existing closure to the meadows east of trail), Guitar

Lake, Kern Hot Spring Meadow, Kettle Dome (Randle Corral) Meadows, Milestone Basin, Mineral King basin, Summit Lake Meadow, and Upper LeConte Canyon above 10,000 feet in elevation.

Meadows associated with areas or trails closed to stock under this alternative would also be closed to grazing.

Recognizing that the opportunity to observe and experience ungrazed meadows is of value to many park visitors, the following meadows along popular travel routes which are otherwise open to camping with stock would be closed to grazing: Bighorn Plateau and the meadow 0.6 mi south of Bighorn Plateau; Chagoopa Plateau #3 Meadow; Darwin Meadow; Grouse Meadow; Lower Crabtree Meadow; and Taboose Pass Meadow. These closures would make it possible for visitors traveling along the JMT and HST to experience at least one ungrazed meadow in each drainage through which the trails pass.

The following restrictions in areas otherwise open to grazing would be adopted:

- Open to grazing by walking parties with burros or llamas, closed to grazing by parties with horses or mules: Bubbs Creek below Junction Meadow, and Evolution Lake to Muir Pass
- Open to administrative use and grazing only: Hockett Pasture, JR Pasture, Kern Ranger Station Pastures, Lackey Pasture, and Upper Redwood Meadow

Table 30 presents the site-specific night and/or head grazing limits on meadows in the parks under alternative 3.

**Table 30: Site-specific Night and/or Head Limits on Grazing under Alterantive 3**

| Location | Stock Head Limit | Night Limit |
|---|---|---|
| Bubbs Creek (below Junction Meadow) | 25 | 1 |
| Castle Domes Meadow | 15 | 1 |
| Cement Table Meadow | 15 | 3 |
| Charlotte Creek (below drift fence) | 25 | 2 |
| Upper Crabtree Meadow | 15 | 7 |
| East Lake and Ouzel Meadows | 12 | 2 |
| Grave Meadow | 15 | 3 |
| Junction Meadow (Bubbs) | 15 | 1 |
| Junction Meadow (Kern) | 15 | 1 |
| Lower Funston Meadow | 25 | 2 |
| Redwood Meadow | 15 | 2 |
| Scaffold Meadow | 15 | 2 |
| Shorty's Meadow | 25 | 2 |
| Upper Crabtree and Sandy Meadows | 10 | 7 |
| Upper Evolution Valley (above Evolution Meadow) | 25 | 1 |
| Upper Funston Meadow | 25 | 2 |
| Upper Rock Creek (Nathan's Meadow and above) | 25 | 2 |
| Wallace Creek Waterfall Meadow | 6 | 1 |

*Stock Use Structures* — Under this alternative, 14 hitch rails would be removed and 38 hitch rails would be retained. Five fences/gates would be removed, 49 would be retained, and one new fence with a gate would be constructed gates (see tables 51a and 51b starting on page 272 at the end of this chapter).

**Element 9: Administrative Structures**

**Planning Objective**: Administrative structures and developments would be the minimum necessary for the administration of wilderness, similar to current conditions.

*Ranger Stations* — Ranger stations that would be retained in their current locations:

- Crabtree
- Hockett Meadow
- LeConte Canyon
- Kern Canyon
- McClure Meadow
- Pear Lake
- Rae Lakes
- Rock Creek
- Tyndall Creek

The following ranger stations could be relocated or modified:

- Bearpaw Meadow Ranger Station would be removed and a new station could be constructed outside the historic district.
- Bench Lake tent platform would be relocated to a more suitable location for patrol functions and/or converted to a hard-sided station.
- Charlotte Lake Ranger Station would be relocated to a more suitable location for patrol functions and/or a new station would be constructed.
- Little Five Lakes tent platform would be relocated to a more suitable location for patrol functions and/or converted to a hard-sided station.
- Monarch tent platform would be relocated to a more suitable location for patrol functions and/or converted to a hard-sided station.
- Roaring River Ranger Station would remain in its current location but would be rehabilitated or reconstructed.

Each of the above actions would be subject to separate site-specific planning, design and compliance. The patrol cabins at Quinn, Redwood Meadow, and Simpson Meadow would be retained.

*Other Administrative Structures* — The Redwood Canyon Cabin would be retained as research support with reduced affiliated infrastructure. Use would include park staff, cooperators, research organizations, and universities (non-NPS staff would be required to obtain a permit). The supporting infrastructure (e.g., water system tables) would be removed, and the area rehabilitated.

The above modifications would require site-specific planning, design, and compliance.

*Administrative Pastures* — Existing administrative pastures and associated structures would be retained (Hockett Meadow, Kern, Roaring River, and Redwood Meadow).

*Crew Camps* — The number of trail crew camps in Kings Canyon National Park would be increased to 20, each with tool caches and 1 to 3 food-storage boxes. The number of trail crew camps in Sequoia National Park would be increased to 15, each with tool caches and 1 to 3 food-storage boxes. Other project crew camps (for administration of wilderness) would be established as needed on a case-by-case basis.

**Element 10: Frontcountry Facilities to Support Wilderness Access and Use**

**Planning Objective**: Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.

The types and levels of commercial services that may be performed in wilderness are discussed in detail in the END (appendix B). Commercial service providers would be permitted to use some frontcountry facilities, but other facilities would only be used by non-commercial or administrative entities.

***Kings Canyon National Park***

*Cedar Grove Pack Station* — The Cedar Grove Pack Station would continue to be operated under concession authority based on a contractual relationship with NPS. Stock camping sites would be developed at the Cedar Grove Pack Station primarily for private users. A holding pen/corral space, hitch rail(s), adequate parking and turnaround space for stock trailers, a campfire pit, picnic tables, restrooms, food-storage boxes, and water supply would be installed.

***Sequoia National Park***

*Middle Fork Kaweah Trailhead* — At the Middle Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided; no other stock amenities would be provided. CUA holders could be allowed to use this trailhead. No camping would be allowed for hikers or stock users.

*Mineral King Area* — The Atwell Mill Campground at Mineral King would be adapted to accommodate stock camping in two to three sites. Facilities may include a holding pen, hitch rail(s), table, campfire pit, picnic table, and stock trailer parking. The site would be maintained through an agreement between the NPS and a cooperating partner. Commercial service providers would be allowed to use the Atwell / Hockett trailhead.

The Mineral King Pack Station and administrative corrals would continue to be used for park administrative purposes at the existing location or at a new location in the Mineral King area. Consistent with the outcome of the END process, if a market and financial viability study/analysis determines that a concessions contract is feasible, per the Concessions Management Act and NPS policies, the Mineral King Pack Station could be operated as a contracted concessions service in its current location or at a new location at Mineral King. The types and levels of service provided by a concessioner at Mineral King would depend on the financial viability analysis and could include public stock campsite(s) and other guided services on approved trails. However, due to the lack of suitable trails and safety concerns, no concessioner-led frontcountry day rides would be authorized. The concessioner would receive exclusive

use of commercial stock access to local trailheads open to stock use (i.e., CUA holders would not have access, but private users could still access wilderness on these trailheads).

*North Fork Kaweah Trailhead* — At the North Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would be allowed to use this trailhead, controlled through the conditions of the permit. A small (two-site) primitive trailhead campground (i.e., no water) for stock users and backpackers would be constructed. The area would be maintained through an agreement between the NPS and a cooperating partner.

*South Fork Kaweah Campground and Trailhead* — The South Fork Kaweah Trailhead would include improved campsite(s) for stock users in the campground and improved parking and turnaround space for stock trailers at the trailhead. This trailhead would be primarily for private users, with limited commercial (managed via CUA permit conditions) and administrative users. At the campsite, a holding pen, adequate parking and turnaround space for stock trailers, hitching rail(s), a campfire pit, and a picnic table would be provided. The site would be maintained through an agreement between the NPS and a cooperating partner.

*Wolverton Area* — At Wolverton, stock facilities would remain in place at the current location, but they would be modified to allow for use by the public and potentially commercial services through a concessions contract. The facilities would continue to be used for the parks administrative purposes. If a market and financial viability study/analysis determines that a concessions contract would be feasible per the Concessions Management Act and NPS policies a portion of the Wolverton Pack Station could be operated as a contracted concessions service. The types and levels of service provided by a concessioner at Wolverton would depend on the financial viability analysis and the END and could include public stock campsite(s), wilderness user services, and frontcountry day rides.

Modifications to frontcountry facilities would require site-specific planning, design, and compliance.

**Element 11: Commercial Services in Wilderness**

**Planning Objective**: Commercial services would be allowed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas. Commercial services would support visitor use and enjoyment of wilderness in a variety of appropriate ways. Visitors with diverse backgrounds and skill levels would be encouraged to experience wilderness and to explore primitive recreation activities such as hiking, backpacking, stock trips, fishing, over-snow travel, or mountaineering, or to build skills in these activities. The availability of commercial support would be allowed to expand commensurate with potentially higher levels of visitor use.

To meet the objectives of this alternative, commercial services would need to be provided at levels higher than those in the no-action alternative. As part of allowing increased use, the levels of commercial services would need to increase to accommodate less experienced visitors to help educate visitors and to control the impacts of inexperienced or inadequately equipped visitors. Commercial services would be allowed to the extent necessary to support those visitors who want to experience wilderness but may need additional support. See also appendix B. Table 31 presents the levels and types of commercial services.

**Table 31: Levels and Types of Commercial Services under Alternative 3**

| Activity | | Proposed Allocation of Commercial Service Days |
|---|---|---|
| **Total Visitor Use Days** – private and supported by commercial services (this does not take into account use by PCT and JMT visitors that are not recorded by the parks' wilderness permit system). | **Proposed Visitor Capacity under Alternative 3**<br>144,000 average<br>175,000 maximum | For all, day and overnight,<br>non-stock and stock-based services: 10,920 |
| **Non-stock Activities**<br>Backpacking and Hiking Trips.<br>Overnight Camping – gear support by human porters<br>Climbing and Mountaineering (summer and winter).<br>Oversnow Travel (ski and snowshoe touring and winter camping – winter only [Nov. 15 to Apr 15]). | Wilderness-wide: activities that are supported by non-stock-based commercial services. | For all, day and overnight,<br>non-stock-based services: 6,550<br>(60% of total commercial services) |
| | Mount Whitney Management Area: activities that are supported by non-stock-based commercial services. | Of the above total allocation for non-stock services, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 1,210 |
| **Stock-based Activities**<br>Stock trips – riding, packing, day rides and overnight camping with stock.<br>Overnight Camping – gear support, including stock spot and dunnage | Wilderness-wide: activities that are supported by stock-based commercial services. | For all, day and overnight<br>stock-based: 4,370<br>(40% of all commercial services) |
| | Mount Whitney Management Area: activities that are supported by stock-based commercial services. | Of the above total allocation, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 650 |

The Bearpaw Meadow High Sierra Camp and the Pear Lake Ski Hut are allowable non-conforming commercial enterprises that may continue operation within potential wilderness as authorized by Congress. The Bearpaw Meadow High Sierra Camp would continue to be operated by a concessioner of the parks at near or slightly above its current level of 1,700 use days, provided it can be accomplished within the camp's existing footprint and would not cause additional impacts on resources.

The Pear Lake Ski Hut would continue to be operated by a cooperating association under a cooperative agreement or by a park-contracted concession at near or slightly above its current level of 1,500 use days during the winter months as a ski hut (lodging facility), provided impacts remain acceptable.

On the following pages, figure 15 depicts the wilderness trail system for alternative 3, figure 16 depicts campfire restrictions for alternative 3, and figures 17a and 17b depict stock access and grazing restrictions for alternative 3.

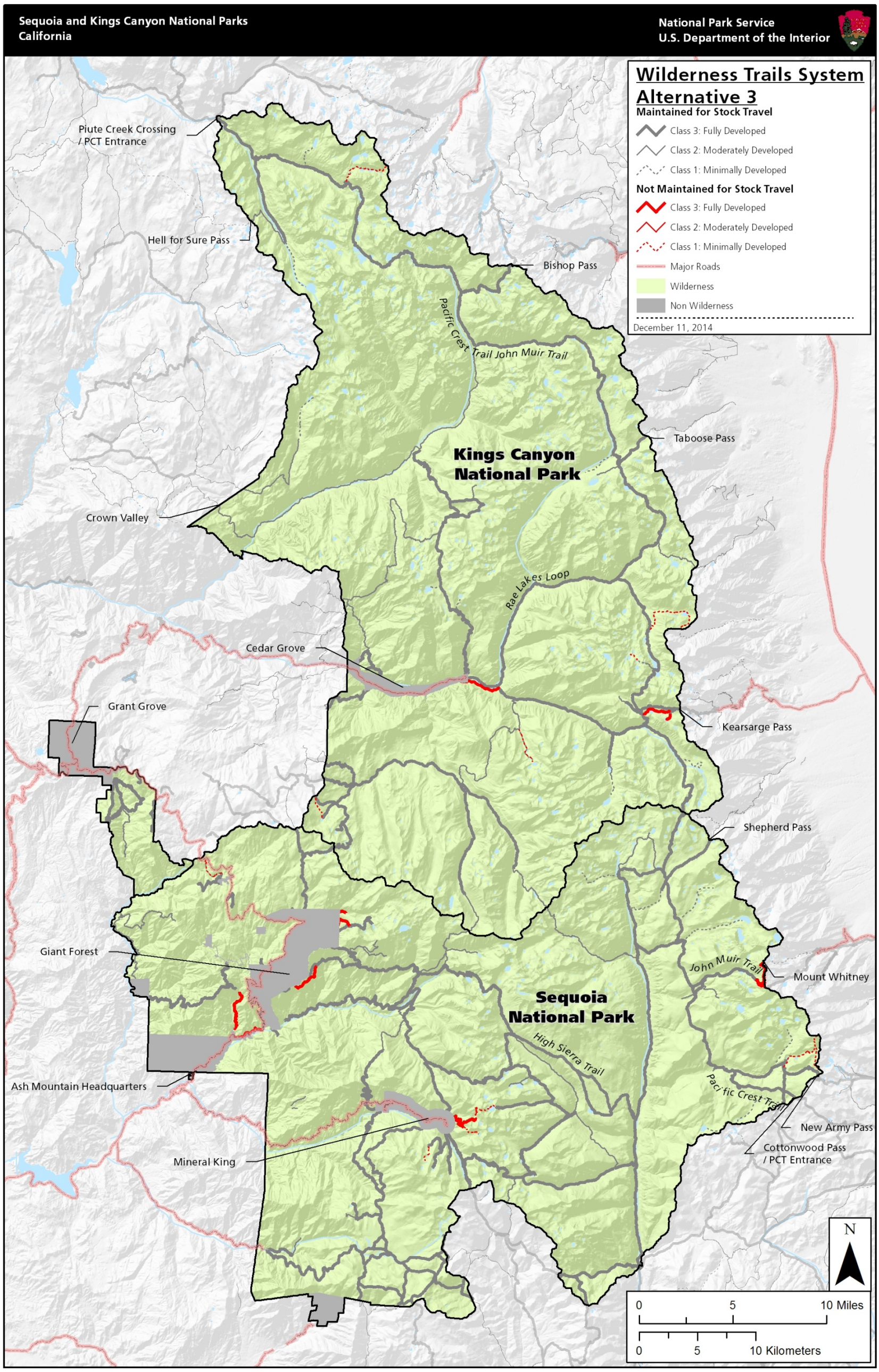


**Figure 15: Wilderness Trails System – Alternative 3**

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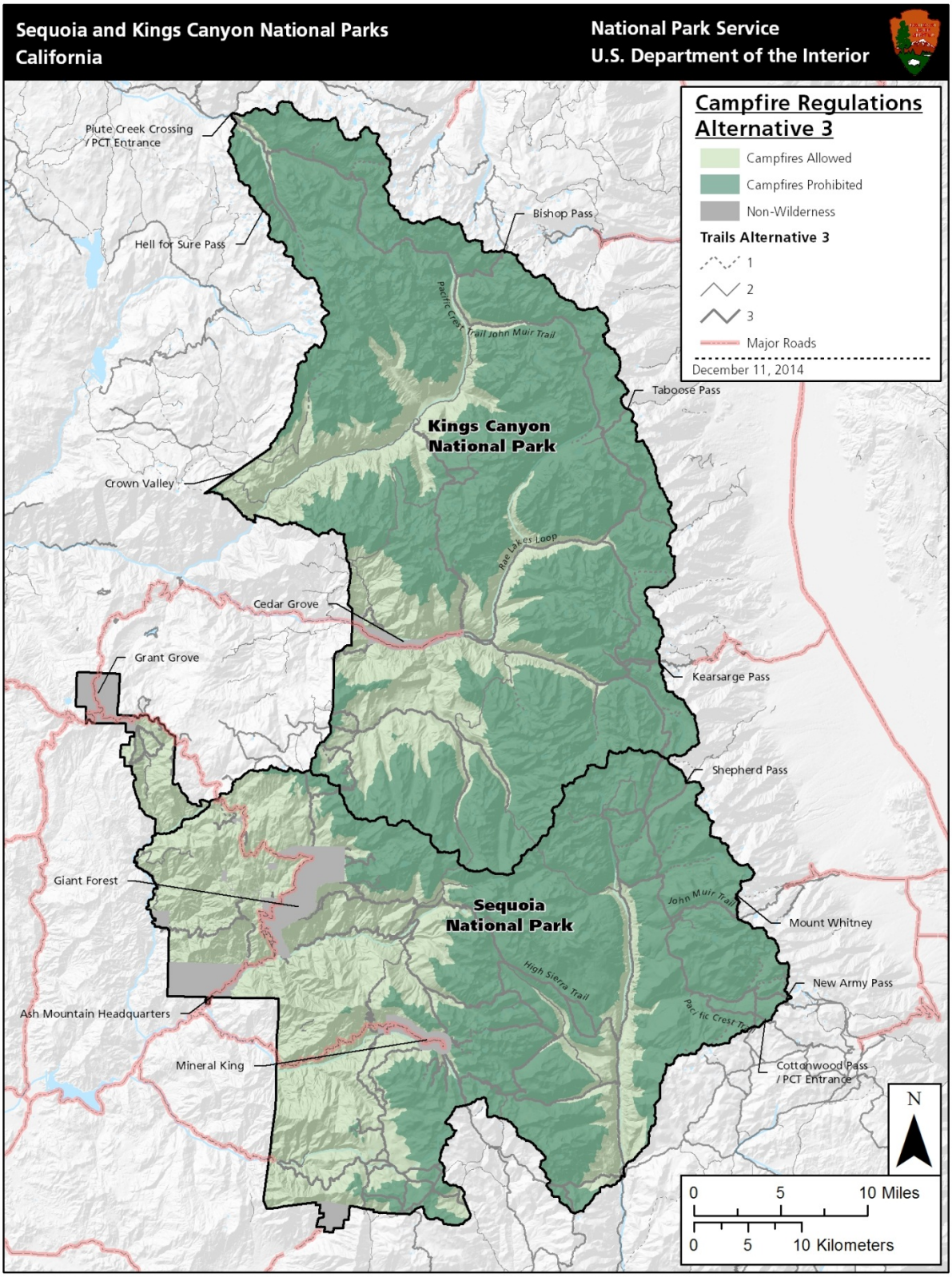
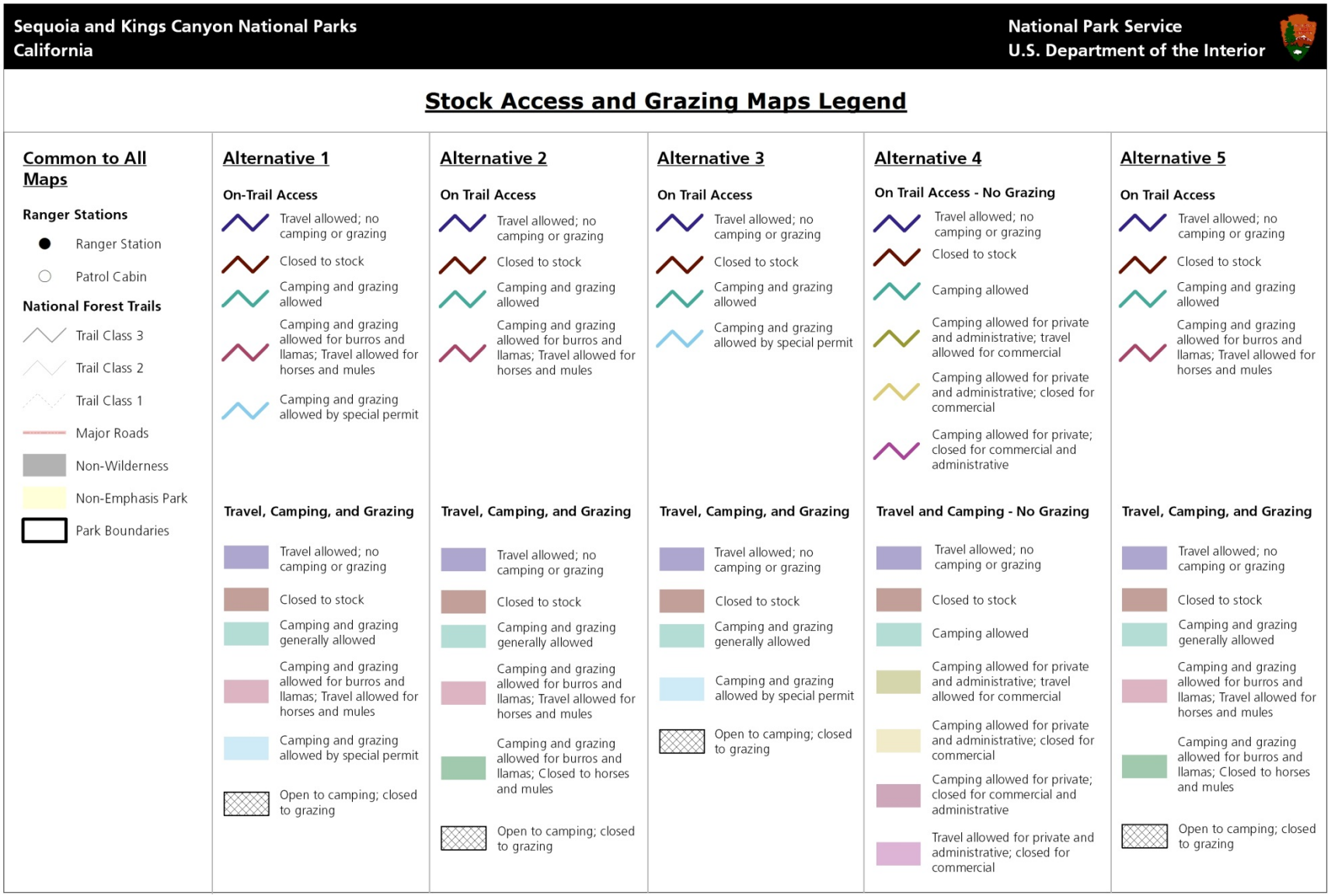



**Figure 16: Campfire Regulations – Alternative 3**

No campfires above 9,000 feet.




**Legend to Accompany Figure 17a: Stock Access and Grazing – Alternative 3, Kings Canyon National Park**

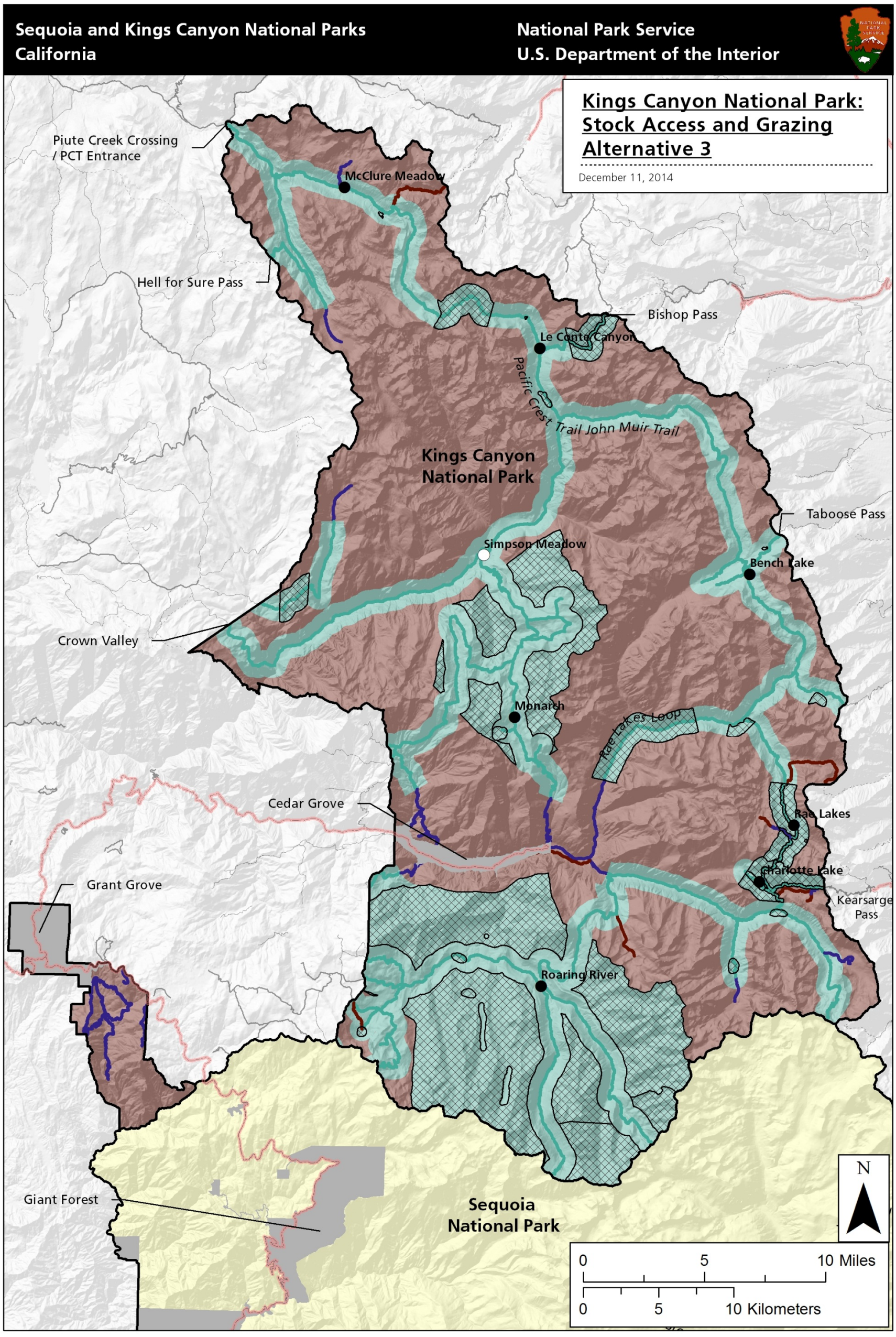



**Figure 17a: Stock Access and Grazing – Alternative 3, Kings Canyon National Park**

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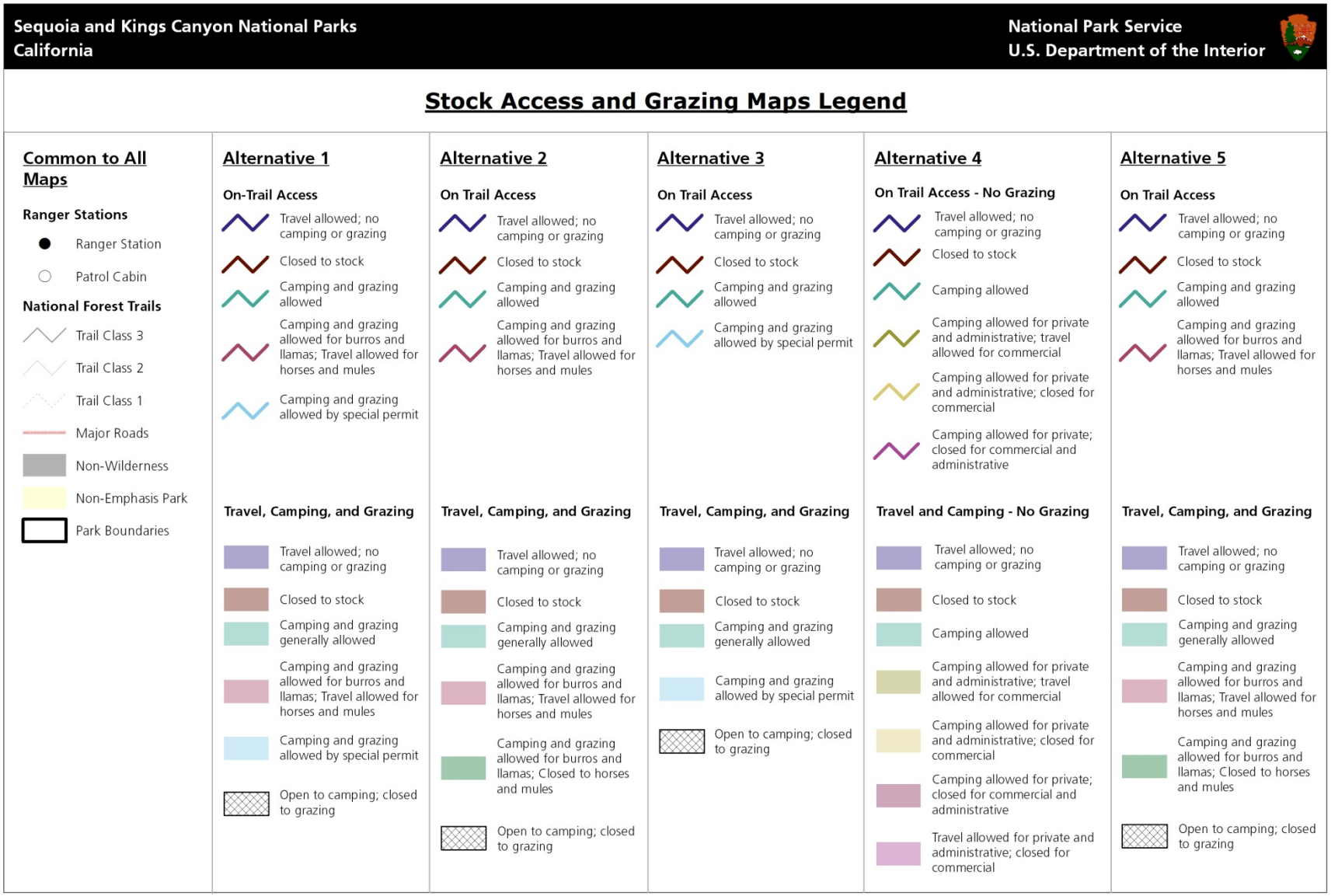


**Legend to Accompany Figure 17b: Stock Access and Grazing – Alternative 3, Sequoia National Park**

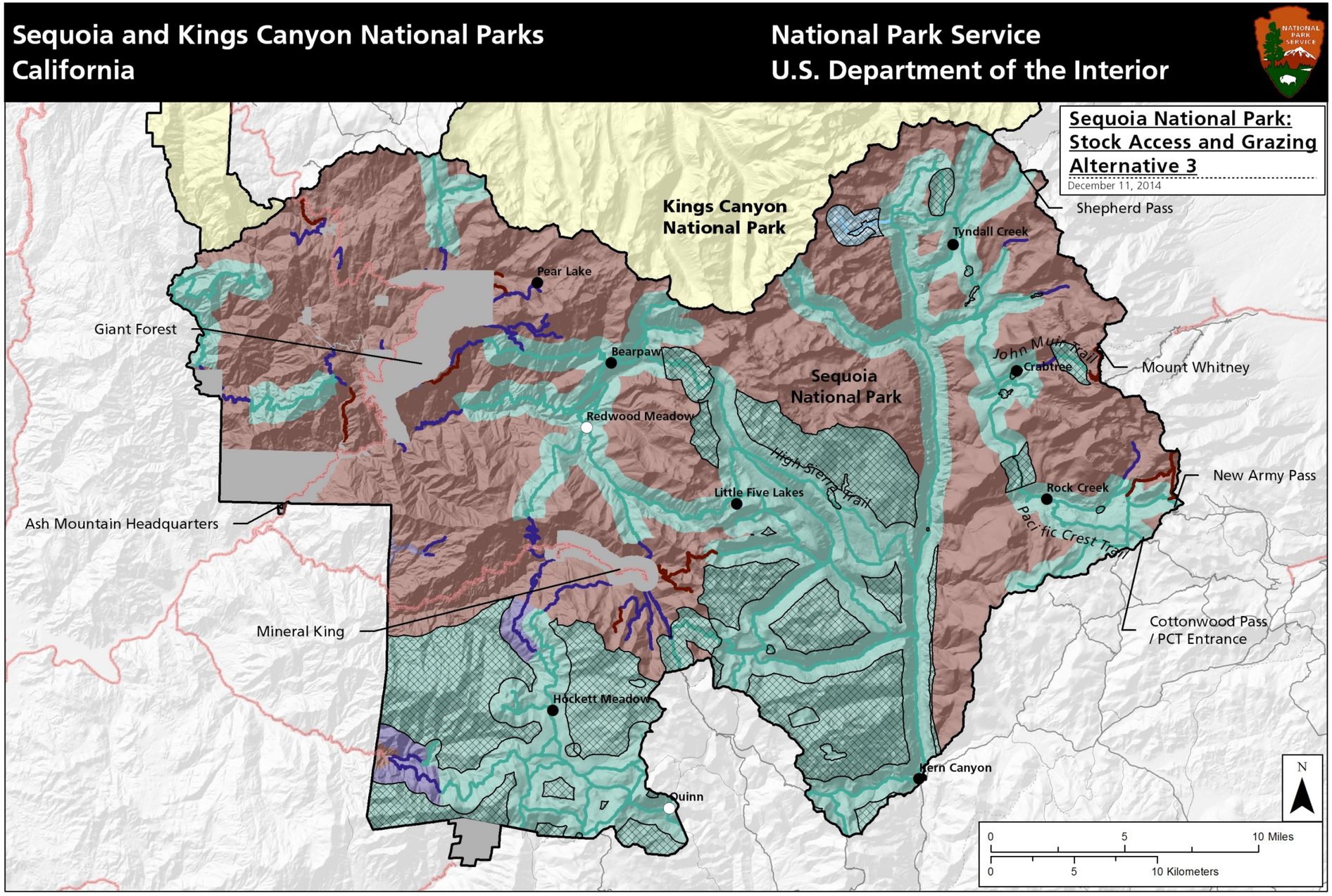


**Figure 17b: Stock Access and Grazing – Alternative 3, Sequoia National Park**

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# ALTERNATIVE 4: EMPHASIZE UNDEVELOPED QUALITY AND NON-COMMERCIAL RECREATION

## OVERVIEW

**Alternative 4 General Concept: Emphasize undeveloped quality and non-commercial recreation.**

The overarching idea behind alternative 4 is that the WSP would focus on emphasizing the undeveloped and non-commercial qualities of the parks' wilderness. Removal of development and reduction of commercial services would increase opportunities for solitude and encourage self-reliance in wilderness recreation.

This alternative would eliminate some of the development currently in wilderness to emphasize the undeveloped quality of wilderness. There would be fewer signs, bridges, stock-related facilities, and ranger stations. Restrooms/privies and food-storage boxes would be removed and there would be no designated campsites.

Because fewer resource-protecting developments would remain in place, the amount of use would need to be reduced to protect the natural quality of wilderness.

Trailhead quotas would remain at current levels or be slightly reduced in the most popular areas. In low-use areas, current trailhead quotas would be reduced to maintain current low use levels by preventing displacement of visitors who cannot get a permit when quotas for the most popular trailheads fill.

Commercial services would be notably reduced in both quantity and areas where they would be available. Types of commercial services would be similar to current conditions. The majority of wilderness would be managed for self-directed exploration and self-reliant travel, increasing the primitive and unconfined qualities of recreation.

Private parties traveling with stock would continue to have access to most trails in the parks, and stock would continue to be allowed to travel off-trail in the four designated areas. However, commercial stock use would be limited to certain destinations and trails. No private, commercial, or administrative stock grazing would be allowed under this alternative.

Campfires would not be allowed in wilderness under this alternative.

## KEY ELEMENTS OF ALTERNATIVE 4

This alternative addresses the key elements as described below.

### Element 1: Visitor-use Levels

**Planning Objective**: Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character. In this alternative, increased emphasis on self-reliance and reduced development would be accompanied by a slight decrease in visitor numbers.

*Permits and Quotas* — Much of the development in wilderness serves the purpose of "hardening" specific areas to prevent unacceptable resource impacts. With reduction in development, recreational use levels would need to be reduced as well to protect resources. This would require slight reductions in quotas for trailheads accessing the most popular areas of wilderness. To prevent use from increasing beyond levels that the areas can sustain, trailhead quotas feeding low-use areas would also need to be reduced.

Existing destination quotas would continue to be applied, and additional destination quotas may be added in the future for specific areas, including Bearpaw Meadow, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lake, Rae Lakes, and potentially others. No day-use permits/quotas would be implemented at this time but they may be considered in the future in the most popular areas to meet desired conditions.

The NPS would continue to work with the USFS to manage and improve the quota and permitting systems, to add trailheads currently missing from the quota system (e.g., Tehipite Valley and Kern River), and on other relevant cooperative cross-boundary wilderness management issues.

*Visitor Capacities and Encounter Standards* — Under alternative 4, the majority of the current types of use in wilderness would be retained. However, some proposed changes could affect the types and levels of use in specific areas. For example, commercial lodging and meal service at Bearpaw Meadow High Sierra Camp would be eliminated and multiple wilderness developments would be removed. Similarly, commercially provided day rides and other commercially provided day trips for any purpose (e.g., photography, fishing, hiking or climbing) would be eliminated. The overnight capacities would be lowered slightly under alternative 4, by reducing daily entry quotas at specific trailheads.

To meet the planning objectives for this alternative, the estimated overnight visitor capacity would be 127,000 VUDs per year. Ten-year average overnight use would be limited to 102,500–108,500 VUDs/year. Each year, total annual VUDs would be discussed and analyzed by an interdisciplinary group at an annual meeting on wilderness management. If determined to be out of standard, management actions to bring the measure back into standard would be adopted. Appendix A contains a detailed description of the methods used to develop the visitor capacity framework for this WSP.

As explained in alternative 2 and appendix A, the parks would adopt a measure of number of people encountered per hour (EPH) on trails and would take action based on established standards. The standards would vary depending on the desired conditions of solitude in a given area. For this measure, each trail would be assigned to one of four encounter-rate standards: very high use (primarily Mount Whitney and day-use areas); high use (generally Class 3 trails, with some exceptions); moderate use (generally Class 2 trails, with some exceptions); and low use (generally Class 1 trails, with some exceptions). Each has a specified EPH that serves as a standard. The standards for alternative 4 are shown in table 32.

**Table 32: Encounters per Hour Standards for Alternative 4**

| Measure | Standard[1] | | | |
|---|---|---|---|---|
| | Very High | High | Moderate | Low |
| Trail Encounters – People Encountered Per Hour– by area | 43 | 24 | 14 | 5 |

[1]Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September) for selected monitored trail segments.

Currently, visitors may experience encounter rates higher than the proposed standard in the areas detailed below. The actions described under this alternative, along with the management actions described in the "Mitigation Common to All Alternatives" section in this chapter and in appendix A, would be taken to return the areas to within standards (table 33 below). [Note: Trail encounter data from 2012-2014 was collected opportunistically by park staff and volunteers. As a result, a larger proportion of samples occurred on weekend days and mid-day times than would be expected from a random or structured sample. A standardized sampling protocol will be developed upon completion of the WSP, and areas that are shown as out-of-standard and near standard in table 33 would be prioritized for re-sampling.]

**Table 33: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 4**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Very High | 43 | Mount Whitney | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; reduce grazing limits in nearby meadows; consult with USFS regarding area use levels. |
| | | Road's End | Near standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | High Sierra Trail (Crescent Meadow to Wolverton Cutoff Junction) | In standard | |
| High | 24 | Lakes Trail | In standard | Obtain better data to confirm observations; adjust overnight stay limit; implement area specific restrictions. |
| | | Mineral King Valley | In standard | |
| | | Little Baldy Trail | In standard | |
| | | Paradise Creek Trail | In standard | |
| | | Redwood Canyon | In standard | |
| Moderate | 14 | Evolution Basin & Valley (JMT/PCT) | Out of standard | Obtain better data to confirm observations; lower limits on commercial services; adjust trailhead quota; reduce night limits. |
| | | Rae Lakes/JMT | Near standard | Obtain better data to confirm observations; lower limits on commercial services; adjust trailhead quota; reduce night limits; implement area specific restrictions. |
| | | Mount Langley approach | Near standard | Obtain better data to confirm observations; lower limits on commercial services; adjust trailhead quota; reduce night limits; consult with USFS regarding use levels. |

**Table 33: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 4 (continued)**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Moderate (continued) | 14 | Crabtree Ranger Station to Trail Crest | Near standard | Obtain better data to confirm observations; lower limits on commercial services; adjust overnight quota; overnight stay limit. |
| | | Rae Lakes Loop — Lower Portion | Near standard | Obtain better data to confirm observations; adjust overnight quota; overnight stay limit. |
| | | West side of Kearsarge Pass | Near standard | Obtain better data to confirm observations; lower limits on commercial services; adjust trailhead quota; reduce night limits; consult with USFS regarding use levels. |
| | | Dusy Basin | In standard | |
| | | Twin Lakes Trailhead to Silliman Creek | In standard | |
| | | High Sierra Trail (Wolverton Cutoff Junction to JMT Junction) | Near standard | Obtain better data to confirm observations; adjust overnight quota; overnight stay limit. |
| | | Rock Creek | In standard | |
| | | Little Five | In standard | |
| Low | 5 | Sixty Lake Basin Trail (Rae Lakes 3) and Crabtree Lakes (Crabtree 1) | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduction in area camping overnight limits; implement area specific restrictions. |
| | | All other trails not identified above | In standard[2] | |

[1] Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September).
[2] Inferred from a small number of samples.

### Element 2: Trails

**Planning Objective**: The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use (levels of visitor use would be slightly decreased from current levels under this alternative).

The level of trail development would be lower under alternative 4. Only the day-use and very popular trails would continue to be maintained to Class 3 levels. This would be primarily the PCT, JMT, HST, Rae Lakes Loop, some primary stock travel corridors, and some feeder trails. The undeveloped quality of wilderness would be improved by maintaining many of the other trails to a lower development class than in the no-action alternative, or by abandoning them. A few designated unmaintained routes that are still passable to stock and where stock travel does not pose undue threats to resources would be designated Class 1 trails and targeted for appropriate construction and maintenance. Many of the designated unmaintained routes listed in the 1986 SUMMP would be abandoned, as would some existing Class 1 or Class 2 trails. A few trails would be designated hiking-only trails where there are known threats to

sensitive resources, unacceptable visitor safety issues, or existing user conflicts between stock and hiker/backpacker parties. Where trails or routes are abandoned, landscape restoration actions would be considered. Summary tables at the end of this chapter give a comparison of trail classes by mileage and use under each alternative. Figure 18 depicts the wilderness trail system for alternative 4 and can be found on page 187. More details on the trail management and classification system can be found in appendix K.

Bridges on Class 2 trails would be evaluated for removal (e.g., Cartridge Creek Bridge, East Creek Bridge, Granite Creek / Upper Middle Fork Kaweah Bridge, and Big Arroyo Bridge on the Lower Kern Trail). Additional site-specific planning and compliance would be needed for the removals and potential trail reroutes to access crossings.

With additional site-specific planning and compliance, new Class 1 trails could be established to protect resources when visitor use may cause undue impacts. For example, establishing Class 1 trails on Lamarck Col and Mount Langley would provide resource protection in areas with increasing visitation.

**Element 3: Campfires**

**Planning Objective**: In order to eliminate campfire impacts and emphasize self-reliant wilderness experiences, campfires would not be allowed.

No campfires would be allowed in wilderness under this alternative.

**Element 4: Food Storage**

**Planning Objective**: Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food. In this alternative, visitors would use self-reliant food-storage techniques; food-storage boxes would not be provided.

All 86 food-storage boxes would be removed under this alternative. Park-allowed portable containers would be required for all overnight visitors wilderness-wide.

**Element 5: Human-waste Management**

**Planning objective**: Human waste would not contaminate water or create unsanitary or unsightly conditions. Reflecting the emphasis on self-reliance and reduced development in this alternative, restrooms and privies would be removed.

Cat-holes would be required. Pack-out waste kits would be highly recommended or required in popular areas.

All public-use privies, vault toilets, and restrooms would be removed under this alternative (including Emerald and Pear lakes restrooms). No new privies, vault toilets, or restrooms would be constructed.

The NPS would consider implementing new technologies for human-waste management as they are developed in the future. The use of new technologies would require on-site planning and compliance. Some technologies may require visitors to be more self-sufficient.

### Element 6: Party Size

**Planning Objective**: Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups. In this alternative, an emphasis on self-reliance would result in a decrease in party size in many areas.

Party sizes would need to be reduced relative to alternative 1; party-size limits for alternative 4 are presented in tables 34 and 35.

**Table 34: Party-size Limits for Hikers and Boaters for Alternative 4**

| Type of Trip | Maximum Party Size |
|---|---|
| On-trail (day use) | 25; consider more restrictive party size for day-use in specific areas. |
| On-trail (overnight use) | 12 |
| Off-trail (day and overnight use) | 8 |
| Area-specific | Existing temporary party-size limits would be removed (maximum party size of 8 in specific locations), and replaced with a wilderness-wide off-trail party size of 8.<br>Party-size limits of 8 people maximum for Redwood Canyon. |

**Table 35: Party-size Limits for Stock Parties for Alternative 4**

| Type of Stock Trip | Maximum Party Size for People and Stock |
|---|---|
| Day rides (not including spot and dunnage) | People: 15<br>Stock: 15<br>Combined: 30 |
| On-trail (including spot and dunnage trips that support overnight use for those trails where stock is allowed) | People: 12<br>Stock: 15<br>Combined: 20 |
| Off-trail (private stock parties only in areas specifically designated for day and overnight stock use) | People: 8<br>Stock: 7<br>Combined: 11 |
| Area-specific | Redwood Canyon party-size limits:<br>People: 8<br>Stock: 8<br>Combined: 16 |

### Element 7: Camping/Campsites and Night Limits

**Planning Objective**: Visitors would have the opportunity to choose camping locations, except in areas where camping would result in unacceptable impacts. In this alternative, an emphasis on visitor self-reliance would allow fewer camping restrictions.

Camping would be prohibited in all areas close to the frontcountry. There would be no universally accessible campsite(s) developed under this alternative.

**A one-person camp near Nine Mile Creek with a portable food-storage container**

The locations of established stock camps would be identified and the NPS would recommend the use of these stock camps.

*First Allowable Campsite* — Camping would be prohibited within specified distances from each trailhead (see the "First Allowable Campsite" section under alternative 2, table 19 on page 116).

*Length of Stay/Night Limits for All Campers (stock-supported and backpackers)* — Visitors would be limited to stays of 10 consecutive nights in a single location, 21 total nights per trip, and 63 total nights per year. Table 36 presents exceptions to these night limits.

**Table 36: Site-specific Exceptions to the Night Limits under Alternative 4**

| Location | Night Limits Exceptions (Consecutive Nights in One Location) |
|---|---|
| Crabtree Meadow area and Lower and Upper Soldier lakes (combined) | 4-night limit |
| Colony Mill Trail, Charlotte Lake, Emerald and Pear lakes (combined), Guitar Lake, the JMT from Woods Creek crossing to Vidette Meadow (at any one location), North Dome, and Redwood Canyon | 3-night limit |
| Dusy Basin, Hamilton Lake, Kearsarge Lakes Basin, Rae Lakes (per lake), and Paradise Valley | 2-night limit |

*Designated Campsites* — To preserve the unconfined aspect of recreation in the parks' wilderness there would be no designated campsites. All designated camping requirements at Emerald and Pear lakes, Lower Paradise Valley, and at Bearpaw Meadow would be discontinued. No other designated sites would be established at this time. Following Leave No Trace© practices will help to preserve the natural quality.

There would be no designated stock camps.

*Campsite Condition Standards* — As explained in alternative 2, a metric of aggregate campsite impacts (Weighted Value per Campable Mile, WVCM) would be adopted under all alternatives. Under alternative 4, the WVCM standard would be: 950 for high use subzones, 475 for moderate use subzones, and 235 for low use subzones. A monitoring plan would be developed to establish protocols and schedule monitoring frequencies to ensure that subzones remain within their applied standard.

Under alternative 4, two subzones (83-1 Guitar Lake and 86-1 Kern Hot Spring) would be out of standard in the high use category, and two subzones (80-3 Shepherd Pass Lake and 90-6 Hockett Meadow) would be out of standard in the moderate category. One low-use subzone, 47-1 Amphitheater Lake, would be at standard. All other subzones would be within standard. Management actions to return the subzones to within standards are included in the "Mitigation Common to All Alternatives" section in this chapter. For a map of campsite condition standards see figure 10 on page 119; for information on determining campsite condition and standards, see appendix A, page A-15 and A-24.

**Element 8: Stock Use**

**Planning Objective**: Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character. To support the self-reliant aspect of this alternative: off-trail access would be limited to private stock, drift fences and hitch rails would be removed, and no grazing would be permitted (carry all feed).

Figures 19a and 19b depict stock access and grazing restrictions for alternative 4. Figure 19a shows stock access and grazing restrictions in Kings Canyon National Park and can be found on pages 190/191. Figure 19b shows stock access and grazing restrictions in Sequoia National Park and can be found on pages 194/195.

***Stock Access and Travel***

*On-trail* — Parties traveling with stock would be allowed on many maintained trails (527 of 643 miles), although some of these trails would be limited to private and administrative groups only. Stock parties would be allowed to travel up to 0.5 mile from trails in areas where they are allowed to camp. In areas open to travel only, stock parties would be allowed to travel up to 100 yards from trails.

Some trails would be open to stock parties for travel only, some would be open to use by private and administrative packers only, some would be open to camping for walking parties with burros and llamas but limited to travel only for parties with horses or mules, and some would be closed to stock travel entirely. These restrictions would be put in place for reasons including visitor safety, resource protection, and areas popular for day-use by hikers, to provide trails with no commercial stock travel, and to provide trails with no stock travel. Approximately 377 miles of maintained trails would be open to travel and camping by stock by all user groups (private, commercial, and administrative) with an additional 72 miles of maintained trails open to travel and camping by private stock or administrative stock parties only (closed or travel only for commercial stock). Trails with restricted stock access under alternative 4 are discussed below.

Trails open for travel only (61 miles – includes mileages to first camps):

- Don Cecil Trail
- Kearsarge Lakes Trail

- Oriole Lake
- Redwood Canyon, Hart Tree, and Sugarbowl Loop trails

Trails closed to commercial stock parties; stock travel only allowed for private and administrative stock parties (17 miles):

- Admiration Point Trail
- Alta Trails
- Center Basin Trail (to Golden Bear Lake)
- Lake 11,092 (shown as Lake 11,106 on older maps)
- Lakes Trail (Hump Trail only)
- Upper Sixty Lake Basin Trail
- Wallace Lake Trail above 11,200 feet in elevation

Trails open for travel only for commercial stock parties (no camping); travel and camping allowed for private and administrative stock parties (17 miles):

- Charlotte Lake Trail from JMT to Charlotte Creek drift fence
- Dusy Basin Trail (above 10,600 feet in elevation)
- JMT from Dollar Lake south to Vidette Meadow
- Kearsarge Pass Trail

Trails closed to commercial stock parties, camping allowed for private and administrative stock parties (56 miles):

- Avalanche Pass Trail – Sphinx Junction to Scaffold drift fence
- Cahoon Rock Trail
- Funston Lake Trail (Siberian Outpost to Funston Lake)
- Goddard Canyon Trail–JMT to Franklin-Montgomery Meadow
- Granite Lake Trail
- Grouse Lake Trail
- JMT from above Crabtree Ranger Station to base of Mount Whitney switchbacks (except Timberline Lake, day-use only)
- Lower Middle Fork Kings Trail
- Miter Basin Trail to Penned-up Meadow
- Muro Blanco Trail
- New Army Pass Trail
- Soda Creek Trail to Lower Big Arroyo
- Tehipite Switchbacks Trail

- Twin Lakes and Silliman Pass South Trails
- Volcanic Lakes Trail and Kennedy Canyon Trail east of Dead Pine Ridge
- Wallace Lake Trail below 11,200 feet in elevation

Trails closed to stock travel of any kind (116 miles):

- Baxter Pass Trail
- Big Baldy Trail
- Buena Vista Trail
- Bullfrog Lake Trail west of Kearsarge Lakes Trail
- South Side Cedar Grove Sand Flats Trail from Zumwalt Meadow Bridge to Bubbs Creek
- Colby Pass Trail from Grand Palace to Kern River
- Eagle Lake Trail
- Elizabeth Pass Trail from Upper Ranger Meadow to HST
- Goddard Canyon and Martha Lake Trails above Franklin-Montgomery Meadow
- Hell-for-Sure Pass Trail
- HST from Crescent Meadow to Wolverton Cutoff
- J.O. Pass Trail
- Kennedy Pass Trail from Frypan Meadow to the top of Dead Pine Ridge
- Ladybug Trail
- Lamarck Col Trail
- Little Baldy Trail
- Lost Canyon Trail
- Marble Falls Trail
- Monarch Lake Trail
- Mosquito Lakes Trail
- Mount Langley Trail
- Mount Whitney Trail – base of switchbacks to Trail Crest and summit
- Muir Grove Trail
- Over-the-Hill Trail
- Paradise Creek Trail
- Redwood Canyon Big Springs Trail
- Sawmill Pass Trail
- Shepherd Pass Trail
- Tamarack Lake Trail

- Tar Gap Trail
- Tokopah Falls Trail
- Watchtower Trail
- Whiskey Log Trail
- White Chief Trail

*Off-trail* — Stock parties would continue to be allowed to travel up to 0.5 mile from trails to reach camps. Travel more than 0.5 mile from maintained trails would continue to be allowed for private parties in four areas of the parks: on the Monarch Divide (except Kennedy Canyon), in the Roaring River area (except the upper end of Cloud and Deadman Canyons), on the Hockett Plateau (except the Tar Gap Trail), and along the western side of the Kern River watershed south from the Chagoopa Plateau (except the lower Big Arroyo). Off-trail travel more than 0.5 mile from maintained trails in these areas would be prohibited for administrative and commercial stock.

*Stock Grazing* — To reduce impacts on the natural and scenic aspects of wilderness character, grazing would not be allowed in wilderness under this alternative. Overnight stock use would continue to be allowed but stock users would be required to hold and feed their animals.

The use of certified-weed-free forage in frontcountry areas, and of processed pellets, rolled grains, or fermented hay in wilderness, would be required as described under alternative 2.

The monitoring system described in appendix D would be employed to track use, document conditions, and provide information for preventing and mitigating impacts associated with stock use but not related to grazing. Stock use would continue to be adaptively managed and informed by the results of the Stock Use and Meadow Monitoring Program, with increased emphasis on the prevention and mitigation of impacts associated with holding and feeding animals.

*Stock Use Structures* — All stock support facilities including drift fences, gates, and hitch rails not associated with ranger stations would be removed. Groups traveling with stock would be required to hold their stock while camping (e.g., set up high lines) on durable, non-vegetated surfaces.

**Element 9: Administrative Structures**

**Planning Objective**: Administrative structures and developments would be the minimum necessary for the administration of wilderness, but due to the emphasis on the undeveloped and self-reliant qualities of wilderness, the number of administrative developments would be reduced more than in any other alternative.

To minimize development, several administrative structures would be removed.

*Ranger Stations* — With reduced private and commercial use, some ranger stations in areas that are currently very popular could be removed. Some historic buildings that do not serve current wilderness administrative needs would be considered for removal.

Ranger stations that would be retained in their current locations:

- Crabtree
- Hockett Meadow

- Kern Canyon
- LeConte Canyon
- McClure Meadow
- Pear Lake
- Rae Lakes
- Rock Creek

Some ranger stations would be removed and no replacement stations would be built.

Ranger stations to be removed could be:

- Bearpaw Meadow
- Bench Lake
- Charlotte Lake
- Little Five Lakes
- Monarch
- Roaring River
- Tyndall Creek

The Quinn Patrol Cabin would be retained. The Redwood Meadow and Simpson Meadow Patrol Cabins would be removed and no new cabins would be built. Each of the above actions would be subject to separate site-specific planning, design and compliance.

*Other Administrative Structures* — The use of the Redwood Canyon Cabin by researchers would be terminated within one year of WSP approval. The cabin would be removed over a two-year period after WSP approval. Future cave research activities in Redwood Canyon could continue, but without the use of the cabin or associated permanent infrastructure. Project-specific compliance would be required for the removal.

*Administrative Pastures* — Existing administrative pastures and associated fences would be removed (Hockett Meadow, Kern, Roaring River, and Redwood Meadow).

*Crew Camps* — Short-term project crew camps (for administration of wilderness) would be established as needed on a case-by-case basis. All installations solely for crew use would be removed. Trail crews would conduct trail maintenance through use of mobile operations, moving with stock or backpacks and using minimum impact camping practices; there would be no facilities placed at these camps.

**Element 10: Frontcountry Facilities to Support Wilderness Access and Use**

**Planning Objective**: Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.

The types and levels of commercial services that may be performed in wilderness are discussed in detail in the END (appendix B). Commercial service providers would be permitted to use some frontcountry facilities, but other facilities would only be used by non-commercial or administrative entities.

### *Kings Canyon National Park*

*Cedar Grove Pack Station* — The concessioners' wilderness operations originating from the Cedar Grove Pack Station would be reduced. Future use of the Cedar Grove Pack Station as a concessions operation would be subject to the Concessions Management Act and NPS policies. Stock camping sites would be developed at the Cedar Grove Pack Station for private users. A holding pen/corral space, hitch rail(s), adequate parking and turnaround space for stock trailers, a campfire pit, picnic tables, restrooms, food-storage boxes, and water supply would be installed for use by private stock only.

### *Sequoia National Park*

*Middle Fork Kaweah Trailhead* — At the Middle Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial services in this area would not be authorized.

*Mineral King Area* — No facilities would be developed to support stock use in the Atwell Mill Campground in Mineral King. Commercial service providers would not be allowed to use the Atwell / Hockett trailhead.

Existing facilities at the Mineral King administrative corrals in east Mineral King Valley would continue to be used in their existing location or in a new location for park administrative purposes. Stock facilities would be modified or constructed to allow for short-term public use (e.g., staging and/or short-term camping). If kept in the same location, the footprint of the corrals would be reduced by removing the remnants of the former pack station (i.e., removing buildings and corrals to reduce the level of development). The site could be modified with adequate parking and turnaround space for stock trailers, a small corral, water, a picnic table, and a vault toilet or restroom to provide stock camping opportunities for private parties (1 or 2 sites, 1 or 2 night limits). No commercial service providers would be authorized to use this facility. The site would be maintained through an agreement between the NPS and a cooperating partner.

*North Fork Kaweah Trailhead* — At the North Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would not be authorized to use this trailhead. The area would be maintained through an agreement between the NPS and a cooperating partner. No camping for stock or backpackers would be provided and camping would not be allowed.

*South Fork Kaweah Campground and Trailhead* — The South Fork Kaweah Trailhead would be modified to improve parking and turnaround space for stock trailers at the trailhead. Only private and administrative users would have access to this trailhead; commercial service providers would not be authorized to use this area. The site would be maintained through an agreement between the NPS and a cooperating partner.

*Wolverton Area* — Stock facilities at Wolverton would remain in place at the current location, but they would be modified to allow for public use by private parties. There would be no commercial services provided at the facility through a concessions contract, but the facilities would continue to be used by private parties and for administrative purposes. The addition of adequate parking and turnaround space for stock trailers, a corral, hitch rail(s), picnic table(s), and a campfire pit would be considered. Restrooms and water access exist currently at the site. The site would be maintained through an agreement between the NPS and a cooperating partner.

The above modifications to frontcountry facilities and trailheads would require site-specific planning, design, and compliance.

**Element 11: Commercial Services in Wilderness**

**Planning Objective**: Commercial services would be allowed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas. Commercial services would support visitors in limited ways and circumstances in order to emphasize the self-reliant aspect of wilderness character.

This alternative emphasizes self-reliant recreation. To meet the objectives of this alternative, commercial services would be reduced to levels significantly lower than those in the no-action alternative and commercial services would be limited in high-use areas (table 37). See also appendix B.

**Table 37: Levels and Types of Commercial Services under Alternative 4**

| Activities | | Proposed Allocation of Commercial Service Days |
|---|---|---|
| **Total Visitor-use Days** – private and supported by commercial services (this does not take into account use by PCT and JMT visitors that are not recorded by the parks' wilderness permit system). | **Proposed Visitor Capacity Alternative 4**<br>103,500 average<br>127,000 maximum | For all, day and overnight, non-stock and stock-based services: 4,390 |
| **Non-stock Activities**<br>Backpacking and Hiking Trips.<br>Overnight Camping – gear support by human porters<br>Climbing and Mountaineering (summer and winter).<br>Oversnow Travel (ski and snowshoe touring and winter camping – winter only [Nov. 15 to Apr 15]). | Wilderness-wide: activities that are supported by non-stock based commercial services. | For all, day and overnight, non-stock based services: 2,630<br>(60% of total commercial services) |
| | Mount Whitney Management Area: activities that are supported by non-stock based commercial services. | Of the above total allocation for non-stock services, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 490 |
| **Stock-based Activities**<br>Stock trips – riding, packing, day rides and overnight camping with stock.<br>Overnight Camping – gear support, including stock spot and dunnage | Wilderness-wide: activities that are supported by stock-based commercial services. | For all, day and overnight stock-based: 1,760<br>(40% of all commercial services) |
| | Mount Whitney Management Area: activities that are supported by stock-based commercial services. | Of the above total allocation, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 260 |

The Bearpaw Meadow High Sierra Camp, including any historic elements, would be removed and the area would be restored to natural conditions. No commercial services would be provided at the Bearpaw Meadow High Sierra Camp.

The commercial use of Pear Lake Ranger Station as a winter ski hut would be discontinued.

On the following pages, figure 18 depicts the wilderness trail system for alternative 4 and figures 19a and 19b depict stock access and grazing restrictions for alternative 4.

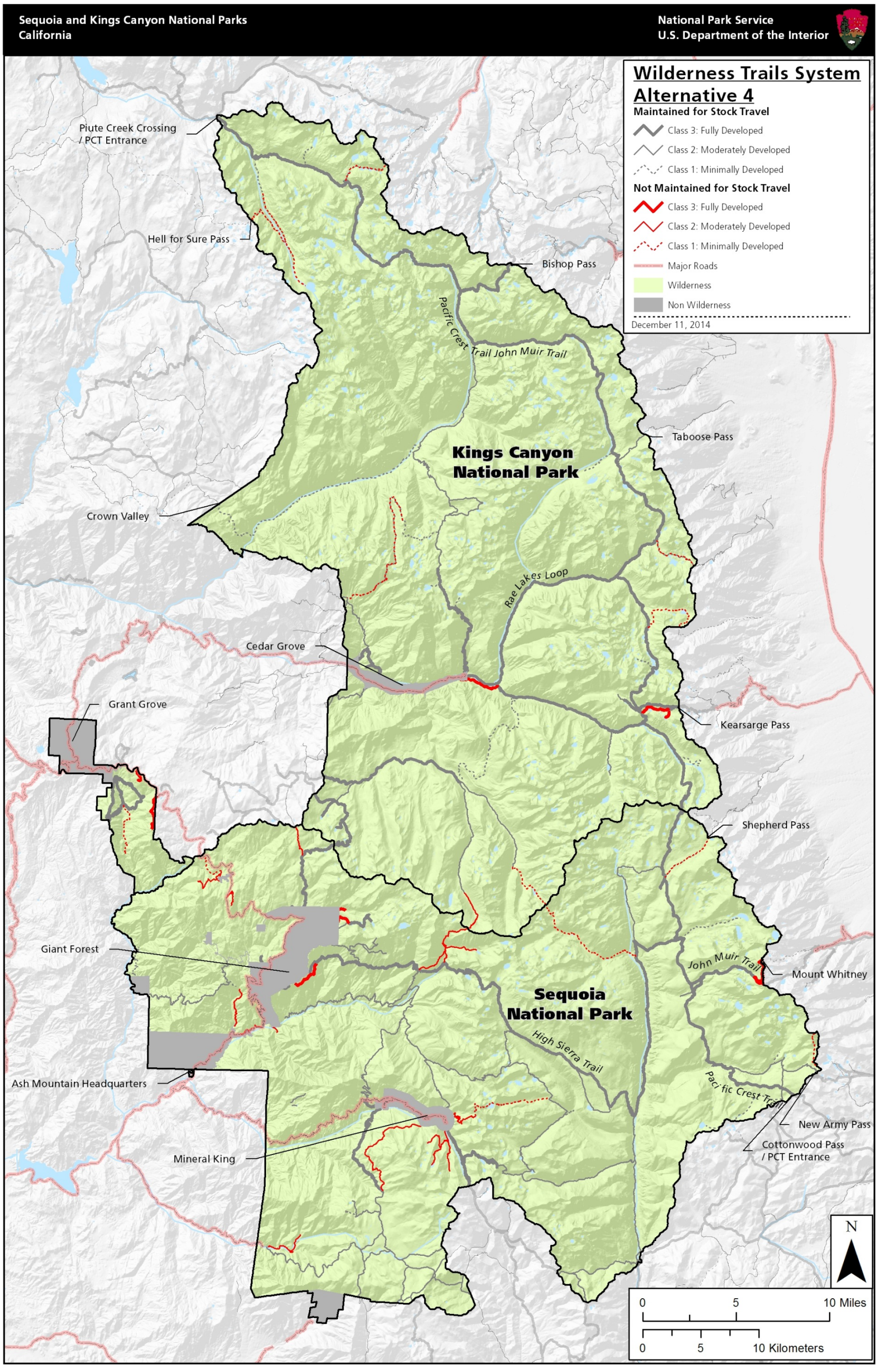


**Figure 18: Wilderness Trails System – Alternative 4**

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**Sequoia and Kings Canyon National Parks**
**California**

**National Park Service**
**U.S. Department of the Interior**

## Stock Access and Grazing Maps Legend

### Common to All Maps

**Ranger Stations**

- Ranger Station
- Patrol Cabin

**National Forest Trails**

- Trail Class 3
- Trail Class 2
- Trail Class 1
- Major Roads
- Non-Wilderness
- Non-Emphasis Park
- Park Boundaries

### Alternative 1

**On-Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 2

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

### Alternative 3

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 4

**On Trail Access - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative

**Travel and Camping - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative
- Travel allowed for private and administrative; closed for commercial

### Alternative 5

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

**Legend to Accompany Figure 19a: Stock Access and Grazing – Alternative 4, Kings Canyon National Park**

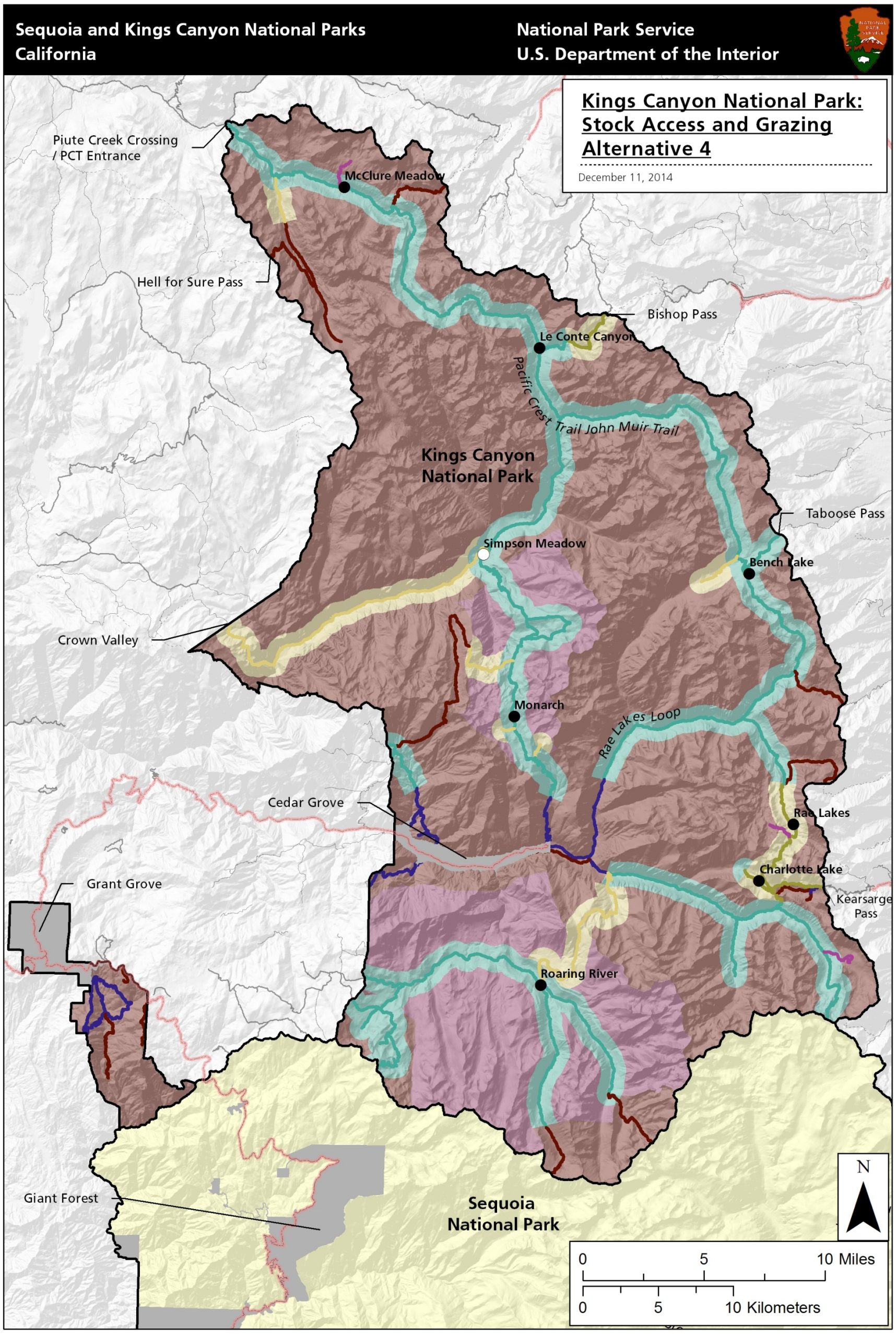


**Figure 19a: Stock Access and Grazing – Alternative 4, Kings Canyon National Park**

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**Sequoia and Kings Canyon National Parks**
**California**

**National Park Service**
**U.S. Department of the Interior**

## Stock Access and Grazing Maps Legend

### Common to All Maps

**Ranger Stations**

- Ranger Station
- Patrol Cabin

**National Forest Trails**

- Trail Class 3
- Trail Class 2
- Trail Class 1
- Major Roads
- Non-Wilderness
- Non-Emphasis Park
- Park Boundaries

### Alternative 1

**On-Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 2

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

### Alternative 3

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 4

**On Trail Access - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative

**Travel and Camping - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative
- Travel allowed for private and administrative; closed for commercial

### Alternative 5

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

**Legend to Accompany Figure 19b: Stock Access and Grazing – Alternative 4, Sequoia National Park**

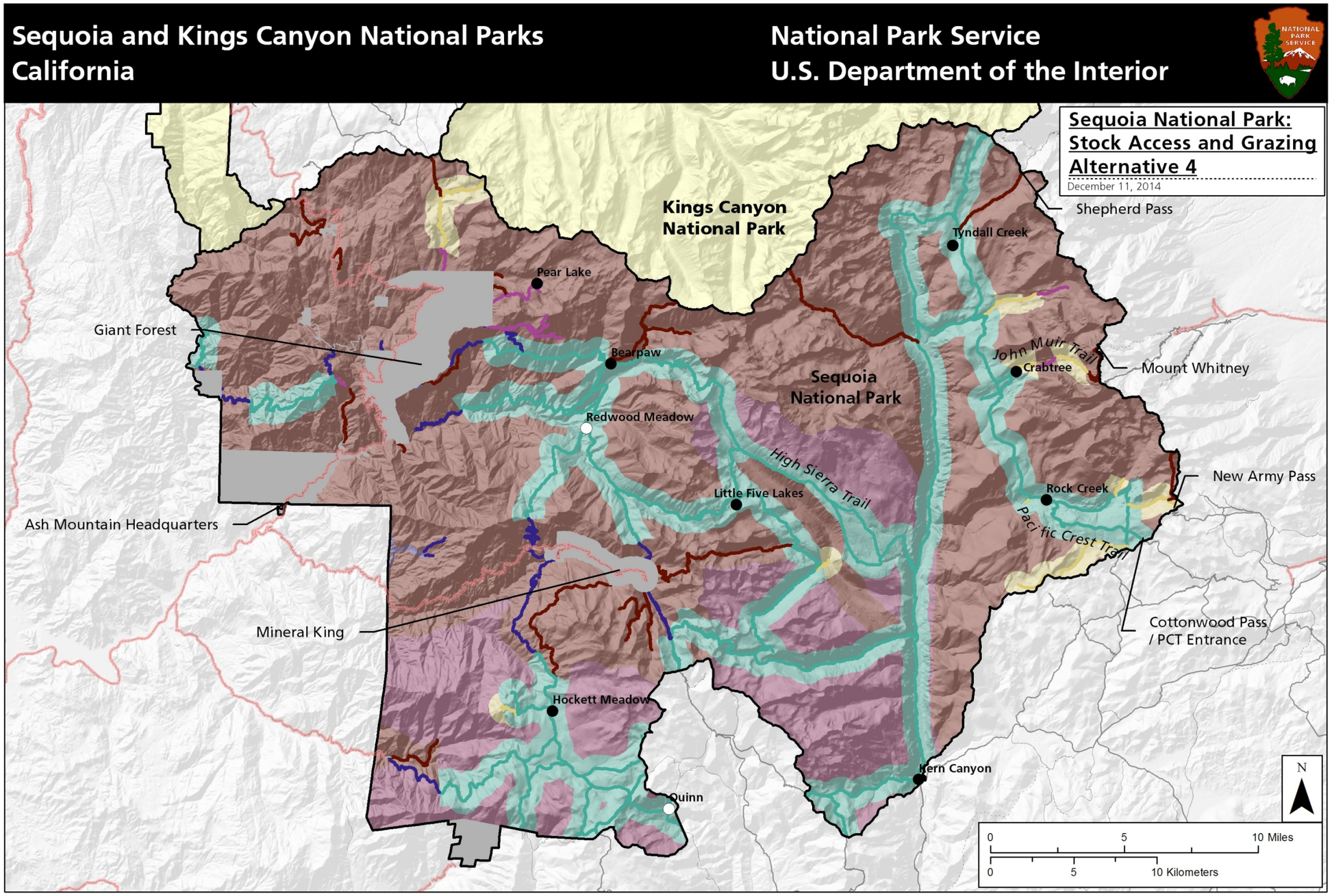


**Figure 19b: Stock Access and Grazing – Alternative 4, Sequoia National Park**

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# ALTERNATIVE 5: EMPHASIZE OPPORTUNITIES FOR SOLITUDE

## OVERVIEW

**Alternative 5 General Concept: Emphasize opportunities for solitude by reducing overall visitor use.**

The overarching idea behind alternative 5 is that the WSP would focus on enhancing the quality of solitude available in wilderness. To achieve this, the total number of wilderness visitors allowed in wilderness would be reduced, as would party size.

The presence of fewer visitors in wilderness would in turn allow for reduced levels of development, along with reduced restrictions on visitor behavior (fewer people need fewer facilities). Reducing the numbers of visitors would also result in reduced impacts on resources.

Trailhead quotas would be reduced to protect against future increases in use wilderness-wide, even at trailheads that currently do not have their quotas filled.

Visitation by stock users would be lower; therefore, fewer controls on stock travel and grazing would be needed in those areas open to stock use. Commercial services would be allowed, but less use would be expected overall with reduced trailhead quotas for all visitors (including commercial service providers) and reduced party sizes.

## KEY ELEMENTS OF ALTERNATIVE 5

This alternative addresses the key elements as described below.

### Element 1: Visitor-use Levels

**Planning Objective**: Visitor use and enjoyment of wilderness would be promoted while ensuring the preservation of wilderness character. In this alternative, increased opportunities for solitude would be achieved with a decrease in visitor numbers.

*Permits and Quotas* — Daily trailhead quotas for the most popular trailheads would be reduced by 30% wilderness-wide (e.g., a quota of 25 would be reduced to 18). Trailhead quotas for low-use trailheads (table 4 on pages 61-63) would be capped at a 10-year daily use average, calculated for the years 2003–2012, and with no quotas being established at less than 10 people per day (Note: low-use trailheads receive no more than 10 visitors per day on average during the peak season).

Existing destination quotas at Emerald and Pear lakes would be discontinued. New destination quotas may be implemented in the future for specific popular areas.

A day-use permit system with quotas would be implemented to control levels of use at popular destinations including Lakes Trail, Mist Falls, and Monarch Lakes, and potentially other areas.

The NPS would continue to work with the USFS to manage and improve the quota and permitting systems, to add trailheads currently missing from the quota system (e.g., Tehipite Valley and Kern River), and on other relevant cooperative cross-boundary wilderness management issues.

*Visitor Capacities and Encounter Standards* — This alternative proposes the lowest use levels across the range of alternatives and as such strongly emphasizes the solitude quality of wilderness character. This would lead to reductions in opportunities for primitive recreation by limiting use levels and access. The majority of the current types of use in wilderness would generally be retained with alternative 5. However, some proposed changes would affect the types and levels of use in specific areas. Levels of use would be notably reduced and levels of development would be somewhat reduced from that of alternative 1. The lower levels of use would also provide for the reduction of some controls, or restrictions on visitor behavior, e.g., fewer night limits. Commercial services would be reduced proportionally with overall visitor-use levels. The overnight capacities would be lowered considerably with alternative 5, by reducing daily entry quotas at the majority of trailheads.

To meet the planning objectives for this alternative, the estimated overnight visitor capacity would be approximately 93,300 VUDs/year. Ten-year average overnight use would be limited to 74,700–84,700 VUD/year. Each year, total annual VUDs would be discussed and analyzed by an interdisciplinary group at an annual meeting on wilderness management. If determined to be out of standard, management actions to bring the measure back into standard would be considered and adopted. Appendix A contains a detailed description of the methods used to develop the visitor capacity framework for this WSP.

As explained in alternative 2, and appendix A, to ensure that there are opportunities for solitude, the parks would adopt a measure of the number of people encountered per hour (EPH) on trails and would take action based on established standards. The standards would vary depending on the desired condition of solitude in a given area. For this measure, each trail would be assigned to one of four encounter-rate standards: very high use (primarily Mount Whitney and day-use areas); high use (generally Class 3 trails, with some exceptions); moderate use (generally Class 2 trails, with some exceptions); and low use (generally Class 1, with some exceptions). Each has a specified EPH that serves as a standard. The standards for alternative 4 are shown in table 38.

**Table 38: Encounters per Hour Standards for Alternative 5**

| Measure | Standard[1] | | | |
|---|---|---|---|---|
| | Very High | High | Moderate | Low |
| Trail Encounters – People Encountered Per Hour– by area | 25 | 18 | 11 | 4 |

[1]Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September) for selected monitored trail segments.

Currently, visitors may experience encounter rates higher than the proposed standard in the areas detailed below. The actions described under this alternative, along with the management actions described in the "Mitigation Common to All Alternatives" section in this chapter and in appendix A, would be taken to return the areas to within standards (table 39 on page 199). [Note: Trail encounter data from 2012-2014 was collected opportunistically by park staff and volunteers. As a result, a larger proportion of samples occurred on weekend days and mid-day times than would be expected from a random or structured sample. A standardized sampling protocol will be developed upon completion of the WSP, and areas that are shown as out-of-standard and near standard in table 39 would be prioritized for re-sampling.]

**Table 39: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 5**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Very High | 25 | Mount Whitney | Out of standard | Obtain better data to confirm observations; lower limits on commercial use; reduce trailhead quotas; reduce night limits; reduce grazing limits in nearby meadows; consult with USFS regarding area use levels. |
| | | Road's End | Out of standard | Obtain better data to confirm observations; reduce trailhead quota; explore day-use permitting. |
| | | High Sierra Trail (Crescent Meadow to Wolverton Cutoff) | In standard | |
| High | 18 | Lakes Trail | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; explore day-use permitting. |
| | | Mineral King Valley | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; explore day-use permitting. |
| | | Little Baldy Trail | In standard | |
| | | Paradise Creek Trail | In standard | |
| | | Redwood Canyon | In standard | |
| Moderate | 11 | Evolution Basin & Valley (JMT/PCT) | Out of standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits. |
| | | Rae Lakes/JMT | Out of standard | Obtain better data to confirm observations; lower limits on commercial use; reduce trailhead quota; reduce night limits. |
| | | Mount Langley approach | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduce trailhead quota; reduce night limits; consult with USFS regarding area use levels. |
| | | Crabtree Ranger Station to Trail Crest | Out of standard | Obtain better data to confirm observations; lower limits on commercial use; reduce trailhead quota; reduce night limits; implement area specific restrictions. |
| | | Rae Lakes Loop — Lower Portion | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduce trailhead quota; reduce night limits. |
| | | West side of Kearsarge Pass | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; implement area specific restrictions. |

**Table 39: Trail Encounter Categories, Standards, and Proposed Management Actions for Alternative 5 (continued)**

| Encounter Category | Encounter Standard[1] | Analysis Area | Status | Proposed Management Action |
|---|---|---|---|---|
| Moderate (continued) | 11 | Dusy Basin | Near standard | Obtain better data to confirm observations; lower limits on commercial use; reduce in area camping overnight limits; implement area specific restrictions. |
| | | Twin Lakes Trailhead to Silliman Creek | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; implement area specific restrictions. |
| | | High Sierra Trail (Wolverton Cutoff Junction to JMT Junction) | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; implement area specific restrictions. |
| | | Rock Creek | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; implement area specific restrictions. |
| | | Little Five | Near standard | Obtain better data to confirm observations; reduce trailhead quota; reduce night limits; implement area specific restrictions. |
| Low | 4 | Sixty Lake Basin Trail (Rae Lakes 3) and Crabtree Lakes (Crabtree 1) | Out of standard | Obtain better data to confirm observations; lower limits on commercial use; reduce in area camping overnight limits; implement area specific restrictions. |
| | | All other trails not identified above | In standard[2] | |

[1] Interpreted as the maximum number of people encountered per hour on 90% of days within the quota season (generally from the Friday before Memorial Day through the last Saturday in September).
[2] Inferred from a small number of samples.

### Element 2: Trails

**Planning Objective**: The trail system would facilitate access for visitor use and enjoyment of the wilderness. Trails would be well suited to the types and levels of visitor use (levels of visitor use would be decreased from current levels under this alternative).

This alternative calls for most trails to be maintained at their current class so that a variety of users can use them to seek solitude. A few trails would be designated hiking-only trails where there are known threats to sensitive resources, unacceptable visitor safety issues, or existing user conflicts between stock and hiker/backpacker parties. Some of the designated unmaintained routes listed in the 1986 SUMMP where stock travel does not pose undue threats to resources would be designated Class 1 stock use trails and targeted for appropriate construction and maintenance. Where trails or routes are abandoned, landscape restoration actions would be considered. See summary tables at the end of this chapter for a comparison of trail classes by mileage and use. Figure 20 depicts the wilderness trail system for alternative 5 and can be found on page 213. More details on the trail-classification system and trail management can be found in "Appendix K: Trail Management and Classification System for Sequoia and Kings Canyon National Parks."

With additional site-specific planning and compliance, new Class 1 trails could be established to protect resources when visitor use may cause undue impacts.

**Element 3: Campfires**

**Planning Objective**: Visitors would have the opportunity to enjoy campfires where campfires are compatible with the protection of vegetation and downed wood resources. In this alternative, decreased visitor use would allow campfires at higher elevations in some areas.

Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist. There would be no campfires allowed above 10,000 feet wilderness-wide. This alternative allows recreational campfires in 425,276 acres of 837,806 acres of wilderness (51%) and would increase the total area with no campfire restrictions when compared with the no-action alternative. Figure 21 depicts campfire restrictions for alternative 5 and can be found on page 215.

**Element 4: Food Storage**

**Planning Objective**: Native wildlife would subsist only on naturally obtained food, uninfluenced by the presence of human food. In this alternative, visitors would use self-reliant food-storage techniques, reflecting the lower levels of visitor use and increased opportunities for solitude; food-storage boxes would not be provided.

All food-storage boxes would be removed from wilderness. Self-determined food-storage methods would be required (i.e., visitors would be required to keep food from animals), although posting an alert guard would still be prohibited. The NPS would retain the ability to require portable containers in specific areas in the future in response to increased incidents

**Element 5: Human-waste Management**

**Planning Objective**: Human waste would not contaminate water or create unsanitary or unsightly conditions. Reflecting decreased levels of visitor use in this alternative, restrooms and privies would be removed.

Cat-holes would be required in all areas, unless visitors elected to use pack-out waste kits. Pack-out waste kits would be recommended in certain areas.

All existing public-use privies and restrooms would be removed under this alternative (including Emerald and Pear Lake restrooms). No new privies, vault toilets, or restrooms would be constructed.

The NPS would consider implementing new technologies for human-waste management as they are developed in the future. The use of new technologies would require on-site planning and compliance. Some technologies may require visitors to be more self-sufficient.

**Element 6: Party Size**

**Planning Objective**: Party size would be set at levels high enough to allow for a variety of experiences, but low enough to protect wilderness character from impacts associated with large groups. In this alternative, an emphasis on opportunities for solitude would result in a decrease in party size wilderness-wide.

Party size would be reduced wilderness-wide (tables 40 and 41).

**Table 40: Party-size Limits for Hikers and Boaters for Alternative 5**

| Type of Trip | Maximum Party Size |
|---|---|
| On-trail (day use) | 20; consider more restrictive party size for day-use in specific highly visited areas (Lakes Trail, Mist Falls, Monarch Lake, and potentially other areas). |
| On-trail (overnight use) | 10 |
| Off-trail (day and overnight use) | 8 |
| Area-specific | A wilderness-wide off-trail party size limit of 8 would be established.<br>There would be a 6-person maximum party size for Redwood Canyon. |

**Table 41: Party-size Limits for Stock Parties for Alternative 5**

| Type of Stock Trip | Maximum Party Size for People and Stock |
|---|---|
| Day Rides (not including spot and dunnage) | People: 13<br>Stock: 13<br>Combined: 26 |
| On-trail (including spot and dunnage trips that support overnight use, for those trails where stock is allowed) | People: 10<br>Stock: 13<br>Combined: 18 |
| Off-trail | No off-trail stock use allowed |
| Area-specific | All existing temporary party-size limits would be removed (maximum party size of 8 in specific locations), and stock would not be allowed off-trail.<br>Redwood Canyon party-size limits:<br>People: 6<br>Stock: 6<br>Combined: 12 |

### Element 7: Camping/Campsites and Night Limits

**Planning Objective**: Visitors would have the opportunity to choose camping locations, except in areas where camping would result in unacceptable impacts. In this alternative, decreased visitor use would allow fewer camping restrictions.

Camping would be allowed in specific areas close to the frontcountry (e.g., Colony Mill Trail, Don Cecil Trail, and North Dome) to allow for a greater diversity of recreational opportunities where risks to resources are low.

The locations of established stock camps would be identified and the NPS would recommend their use.

*First Allowable Campsite* — As described under alternative 2, camping would not be allowed within specified distances from each trailhead (see the "First Allowable Campsites" section under alternative 2, table 19 on page 116).

*Length of Stay/Night Limits for All Campers (stock-supported and backpackers)* — Under this alternative, campers would be limited to staying 10 consecutive nights in a single location, 21 total nights per trip, and 63 total nights per year. Table 42 presents exceptions to these night limits.

**Table 42: Site-specific Exceptions to the Night Limits under Alternative 5**

| Location | Night Limits Exceptions (Consecutive Nights Stay per Location) |
|---|---|
| Colony Mill Trail, Crabtree Meadow area, Guitar Lake, and the JMT from Woods Creek Crossing to Vidette Meadow | 4 night limit (at any one location) |
| Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Kearsarge Lakes Basin (combined), Paradise Valley (whole valley), Rae Lakes (per lake), and Redwood Canyon | 3-night limit |
| Hamilton Lake | 2 night limit |

Additional site-specific night limits could be applied in the future to reduce adverse impacts (both social and physical).

*Designated Campsites* — To preserve the unconfined aspect of recreation in the parks' wilderness there would be no designated campsites. Existing designated camping requirements at Emerald and Pear lakes, Paradise Valley, and Bearpaw Meadow would be discontinued. No new designated sites would be established.

There would be no designated stock camps.

*Campsite Condition Standards* — As explained in alternative 2, a metric of aggregate campsite impacts (Weighted Value per Campable Mile, WVCM) would be adopted under all alternatives to ensure that the number of campsites and their condition does not exceed standard. Under alternative 5, the WVCM standard would be: 700 for high use subzones; 350 for moderate use subzones; and 175 for low-use subzones. A monitoring plan would be developed to establish protocols and schedule monitoring frequencies to ensure that subzones remain within their applied standard.

**In lower Paradise Valley**

Under alternative 5, six subzones (39-4 LeConte Ranger Station, 42-2 Middle Dusy Basin, 42-5 Lower Dusy Lakes, 80-7 Lakes above Tyndall, 83-1 Guitar Lake, and 86-1 Kern Hot Spring) would be out of standard in the high-use category, and six subzones (39-7 JMT-Simpson Junction, 42-3 11,393 Lakes, 42-4 South Dusy Lakes, 80-3 Shepherd Pass Lake, 90-1 Atwell-Hockett Trail, and 90-6 Hockett Meadow) would be out of standard in the moderate category. One subzone, 47-1 Amphitheater Lake, would be out of standard in the low use subzone. All other subzones would be within standard. Management actions to return the subzones to within standards are included in the "Mitigation Common to All Alternatives" section in this chapter, for a map of campsite condition standards see figure 10, page 119; for information on determining campsite condition and standards, see appendix A, page A-15 and A-24.

**Element 8: Stock Use**

**Planning Objective**: Visitors would have opportunities to travel with stock, from day rides to multi-day trips, in a manner that ensures the protection of wilderness character. Access and grazing would be managed to protect resources, provide other types of primitive recreation, and reduce conflict of user groups. In areas where stock would be permitted, fewer restrictions would be needed to protect wilderness character given the lower levels of visitor use in this alternative. Off-trail areas would not be open to stock.

Figures 22a and 22b depict stock access and grazing restrictions for alternative 5. Figure 22a shows stock access and grazing restrictions in Kings Canyon National Park and can be found on pages 216/217. Figure 22b shows stock access and grazing restrictions in Sequoia National Park and can be found on pages 220/221.

***Stock Access and Travel***

*On-trail* — Visitors traveling with stock would continue to have access to most trails (665 of 702 miles). Stock parties would be allowed to travel up to 0.5 mile from trails in areas where they are allowed to camp. In areas open to travel only, stock parties would be allowed to travel up to 100 yards from trails.

Approximately 555 miles of maintained trails would be open to camping with stock. Some trails would be open to stock parties for travel only, some would be open to camping by walking parties with burros and llamas but limited to travel only for parties with horses or mules, and some would be closed to stock travel entirely for reasons including visitor safety, resource protection, and/or popular day-use by hikers. Trails with restricted stock access under alternative 5 are discussed below.

Trails open to stock for travel only (110 miles – includes mileages to first camps):

- Admiration Point Trail
- Alta Trails
- Big Baldy Trail
- Buena Vista Trail
- Center Basin Trail (to Golden Bear Lake)
- Dusy Basin Trail (above 10,600 feet in elevation)
- JMT along Timberline Lake

- JMT from Dollar Lake to Glen Pass
- Kearsarge Lakes, and Bullfrog Lake Trails
- Lake 11,092 Trail (shown as Lake 11,106 on older maps)
- Lakes Trail (Hump Trail only)
- Martha Lake Trail from 1 mile above Hell-for-sure Junction
- Miter Basin Trail above Penned-up Meadow to a tie-up area at 11,300 feet in elevation below Sky Blue Lake.
- Oriole Lake Trail
- Redwood Canyon area Trails
- Upper Blue Canyon Trail below 10,000 feet in elevation
- Upper Sixty Lake Basin Trail
- Wallace Lake Trail above 11,200 feet in elevation
- Wright Creek Trail above 11,200 feet in elevation

Trails open to parties with horses or mules for travel only; camping use for walking parties with burros and llamas allowed (1 mile, not including mileage to first camps):

- Eagle Lake Trail
- Mosquito Lakes Trails
- White Chief Trail

Closed to stock travel (37 miles):

- Baxter Pass Trail
- Crabtree Lakes Trail (no travel above camp at 11,000 feet in elevation)
- HST from Crescent Meadow to Wolverton Cutoff
- Lamarck Col Trail
- Little Baldy Trail
- Lower Sixty Lake Basin Trail
- Marble Falls Trail
- Monarch Lake Trail
- Mount Langley Trail
- Mount Whitney Trail – base of switchbacks to Trail Crest and summit
- Muir Grove Trail
- Paradise Creek Trail
- South Side Cedar Grove Sand Flats Trail from Zumwalt Meadow Bridge to Bubbs Creek
- Tokopah Falls Trail

- Watchtower Trail

*Off-trail* — Stock travel would be allowed up to 0.5 mile from maintained trails open to stock use to reach campsites. Stock travel would be prohibited more than 0.5 mile from maintained trails open to stock use.

*Stock Grazing* — Grazing would be managed to maximize protection of resources while allowing visitors traveling with stock continued access to forage. Grazing would generally be allowed within 0.5 mile of maintained trails open to overnight stock. Grazing would not be allowed in areas designated as open to day-use only or pass-through only.

Grazing would continue to be managed and informed by the results of the Stock Use and Meadow Monitoring Program, including the continued application of estimated grazing capacities, as described under alternative 2.

Areas closed to grazing would remain open to camping by visitors traveling with stock, but they would be required to hold and feed their animals. Administrative grazing would be managed to limit impacts on public grazing (Note: with rare exceptions, visitors are given preference for limited grazing resources).

The use of certified-weed-free forage in frontcountry areas, and of processed pellets, rolled grains, or fermented hay in wilderness, would be required as described under alternative 2.

The monitoring system described under alternative 2 and in appendix D would be employed to track use, document conditions, and provide information for preventing and mitigating impacts.

The meadows closed to grazing for scientific and social value by the SUMMP would remain closed to grazing. The meadows closed to grazing due to high levels of visitation and resource concerns by the SUMMP would remain closed with the following exception: Tom Sears Meadow would be reopened to grazing.

The following additional meadows which are otherwise open to camping with stock would be closed to grazing due to high levels of visitation and resource concerns: Crabtree Lakes (closed to stock access and grazing above the existing camp west of the lowest lake), Darwin Meadow proper, Forester Lake Meadow, Guitar Lake, Guyot Creek Meadows (expanding the existing closure to the meadows east of the trail), Kern Hot Spring Meadow, Kettle Dome (Randle Corral) meadows, Mineral King basin, Summit Lake Meadow, Upper LeConte Canyon above 10,000 feet in elevation, and Woods Lake basin (expanding the existing closure to the entire basin).

Meadows associated with areas or trails closed to stock under this alternative would also be closed to grazing.

The following restrictions in areas otherwise open to grazing would be adopted:

- Open to grazing by walking parties with burros or llamas, closed to grazing by parties with horses or mules: Bubbs Creek below Junction Meadow and Evolution Lake to Muir Pass
- Open to administrative use and grazing only: Hockett Pasture, JR Pasture, Kern Ranger Station Pastures Lackey Pasture, and Upper Redwood Meadow

Table 43 on the next page presents site-specific night and/or head limits for grazing on meadows in the parks under alternative 5.

**Table 43: Site-specific Night and/or Head Limits for Grazing under Alternative 5**

| Location | Stock Head Limit | Night Limit |
|---|---|---|
| Bubbs Creek (below Junction Meadow) | 13 | 1 |
| Castle Domes Meadow | 13 | 1 |
| Charlotte Creek (below drift fence) | 13 | 2 |
| East Lake and Ouzel Meadows | 12 | 2 |
| Junction Meadow (Bubbs) | 13 | 1 |
| Scaffold Meadow | 13 | 2 |
| Shorty's Meadow | 13 | 2 |
| Upper Crabtree and Sandy Meadows | 10 | 10 |
| Upper Evolution Valley (above Evolution Meadow) | 13 | 1 |
| Upper Rock Creek (Rock Creek Lake and above) | 13 | 2 |

*Stock Use Structures* — Under this alternative, 24 hitch rails would be retained and 28 hitch rails would be removed. A total of 36 fences or gates would be retained, 18 fences and gates would be removed, and one gate would be added (see tables 51a and 51b starting on page 272 at the end of this chapter).

**A gate across the trail to prevent stock from drifting**

**Element 9: Administrative Structures**

**Planning Objective**: Administrative structures and developments would be the minimum necessary for the administration of wilderness, but due to lower levels of visitor use, the number of administrative developments would be reduced.

*Ranger Stations* — With reduced use, some ranger stations could be removed. Historic buildings would be preserved for their historic value.

Ranger stations that would be retained in their current location:

- Charlotte Lake
- Crabtree
- Hockett Meadow
- Kern Canyon
- LeConte Canyon
- McClure Meadow
- Pear Lake
- Rae Lakes
- Roaring River
- Rock Creek
- Tyndall Creek

Four ranger stations would be removed and no replacement stations would be built:

- Bearpaw Meadow
- Bench Lake
- Little Five Lakes
- Monarch

The patrol cabins at Quinn, Redwood Meadow, and Simpson Meadow would be retained.

Site-specific compliance would be required for the removal of ranger stations.

*Other Administrative Structures* — Use of the Redwood Canyon Cabin by researchers would be terminated within two years of WSP approval. The cabin would be removed within three years of WSP approval. Future cave and other research activities in Redwood Canyon could continue but without the use of a permanent structure. Project-specific compliance would be required for the removal.

*Administrative Pastures* — Historically, some areas of the parks have been patrolled by mounted rangers. To maintain stock close to the patrol cabins for quick emergency response, and to reserve some grazing for park stock, some of these locations have fenced pastures. Under this alternative, the Redwood Meadow pasture fence would be removed. The Kern and Hockett Meadow pastures would be reduced in size. The Roaring River pastures would be retained.

*Crew Camps* — All installations solely for crew use would be removed. Trail crews would conduct trail maintenance through use of mobile operations, moving with stock or backpacks and using minimum impact camping practices. There would be no semi-permanent established camps. Project crew camps (for administration of wilderness) would be established as needed on a case-by-case basis.

**Element 10: Frontcountry Facilities to Support Wilderness Access and Use**

**Planning Objective**: Frontcountry facilities that support activities in wilderness would encourage and/or facilitate visitor use and enjoyment of wilderness.

The types and levels of commercial services that may be performed in wilderness are discussed in detail in the END (appendix B). Commercial service providers would be permitted to use some frontcountry facilities, but other facilities would only be used by non-commercial or administrative entities.

***Kings Canyon National Park***

*Cedar Grove Pack Station* — The Cedar Grove Pack Station would continue to be operated under concession authority based on a contractual relationship with the NPS. Stock camping sites would be developed at the Cedar Grove Pack Station primarily for private users. A holding pen/corral space, hitch rail(s), adequate parking and turnaround space for stock trailers, a campfire pit, picnic tables, restrooms, food-storage boxes, and water would be installed.

***Sequoia National Park***

*Middle Fork Kaweah Trailhead* — At the Middle Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and hitch rail(s) would be provided; no other stock amenities would be provided (same as alternative 2). Commercial service providers would be allowed to use this trailhead.

*Mineral King Area* — No changes would be made at the Atwell Mill Campground in Mineral King. Stock would not be allowed to be held overnight in the campground. Commercial service providers would not be allowed to use the Atwell / Hockett trailhead.

All facilities at Mineral King administrative corrals and pack station in east Mineral King Valley would be removed and the area would be restored to natural conditions. A limited area for trailhead parking and stock turnaround below the corral site would be retained. Commercial service providers would be allowed to use the Mineral King Valley trailheads (managed by CUA permit conditions).

*North Fork Kaweah Trailhead* — At the North Fork Kaweah Trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would be allowed to use this trailhead (managed by CUA permit conditions). The trailhead area would be maintained through an agreement between the NPS and a cooperating partner. No camping for stock or backpackers would be allowed.

*South Fork Kaweah Campground and Trailhead* — The South Fork Kaweah Trailhead would be modified to improve parking and turnaround space for stock trailers at the trailhead. In addition, a hitching post would be provided at this site. The trailhead would be primarily for private users with limited commercial (managed by CUA permit conditions) and administrative use. The site would be maintained through an agreement between the NPS and a cooperating partner.

*Wolverton Area* — Stock facilities at Wolverton would remain in place at their current location, but they would be modified to allow for public use by private parties and for short-term use by commercial service

providers. There would be no long-term commercial use of the facility by a resident pack station concession. The facilities would continue to be used for the parks administrative purposes. The addition of adequate parking and turnaround space for stock trailers, a corral, hitch rail(s), picnic table(s), and a campfire pit would be considered. Restrooms and water access exist at this site. The site would be maintained through an agreement between the NPS and a cooperating partner.

The above modifications to frontcountry facilities and trailheads would require site-specific planning, design, and compliance.

**Element 11: Commercial Services in Wilderness**

**Planning Objective**: Commercial services would be allowed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas. Commercial services would support visitor use and enjoyment of wilderness in a variety of appropriate ways. Visitors with diverse backgrounds and skill levels would be encouraged to experience wilderness and to explore primitive recreation activities such as hiking, backpacking, stock trips, fishing, over-snow travel, or mountaineering, or to build skills in these activities. The types of commercial support would be similar to current conditions, but the lower overall levels of visitor use would result in lower overall levels of commercial support.

To meet the objectives of this alternative, commercial services would be needed at levels lower than those in the no-action alternative in most locations (appendix B). The percentage of total visitor use supported by commercial services would be similar to the no-action alternative to ensure that reduced access does not disproportionally affect any particular user group. The types of commercial services allowed may be expanded from the no-action alternative to support a range of recreational experiences, and to support more solitary recreation choices. Commercial services would be allowed to the extent necessary to support those visitors who want to experience wilderness but may need additional support. Table 44 presents the levels and types of commercial services.

**Table 44: Levels and Types of Commercial Services under Alternative 5**

| Activities | | Proposed Allocation of Commercial Service Days |
|---|---|---|
| **Total Visitor-use Days** – private and supported by commercial services (this does not take into account use by PCT and JMT visitors that are not recorded by the parks' wilderness permit system). | **Proposed Visitor Capacity Alternative 5**<br>77,700 average<br>93,300 maximum | For all, day and overnight, non-stock and stock-based services: 5,880 |
| **Non-stock Activities**<br>Backpacking and Hiking Trips.<br>Overnight Camping – gear support by human porters<br>Climbing and Mountaineering (summer and winter).<br>Oversnow Travel (ski and snowshoe touring and winter camping – winter only [Nov. 15 to Apr 15]). | Wilderness-wide: activities that are supported by non-stock-based commercial services. | For all, day and overnight, non-stock-based services: 3,530<br>(60% of total commercial services) |
| | Mount Whitney Management Area: activities that are supported by non-stock-based commercial services. | Of the above total allocation for non-stock services, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 650 |

**Table 44: Levels and Types of Commercial Services under Alternative 5 (continued)**

| Activities | | Proposed Allocation of Commercial Service Days |
|---|---|---|
| **Stock-based Activities**<br>Stock trips – riding, packing, day rides and overnight camping with stock.<br>Overnight Camping – gear support, including stock spot and dunnage | Wilderness-wide: activities that are supported by stock-based commercial services. | For all, day and overnight stock-based: 2,350<br>(40% of all commercial services) |
| | Mount Whitney Management Area: activities that are supported by stock-based commercial services. | Of the above total allocation, the level which can occur in the Mount Whitney Management Area between late-May and late-September: 350 |

The Bearpaw Meadow High Sierra Camp is an allowable non-conforming commercial enterprise that may continue operation within potential wilderness as authorized by Congress. The Bearpaw Meadow High Sierra Camp would continue to be operated at reduced levels of use-days by a concessioner. The size of the facility would be reduced and the season of operation would be shortened.

The Pear Lake Ski Hut would be used as a warming hut (with no overnight lodging) and would be operated by NPS. Operation by the cooperating association would be discontinued. There would be no commercial services provided.

**Pear Lake Ski Hut (Ranger Station) in Sequoia National Park**

On the following pages, figure 20 depicts the wilderness trail system for alternative 5, figure 21 depicts campfire restrictions for alternative 5, and figures 22a and 22b depict stock access and grazing restrictions for alternative 5.

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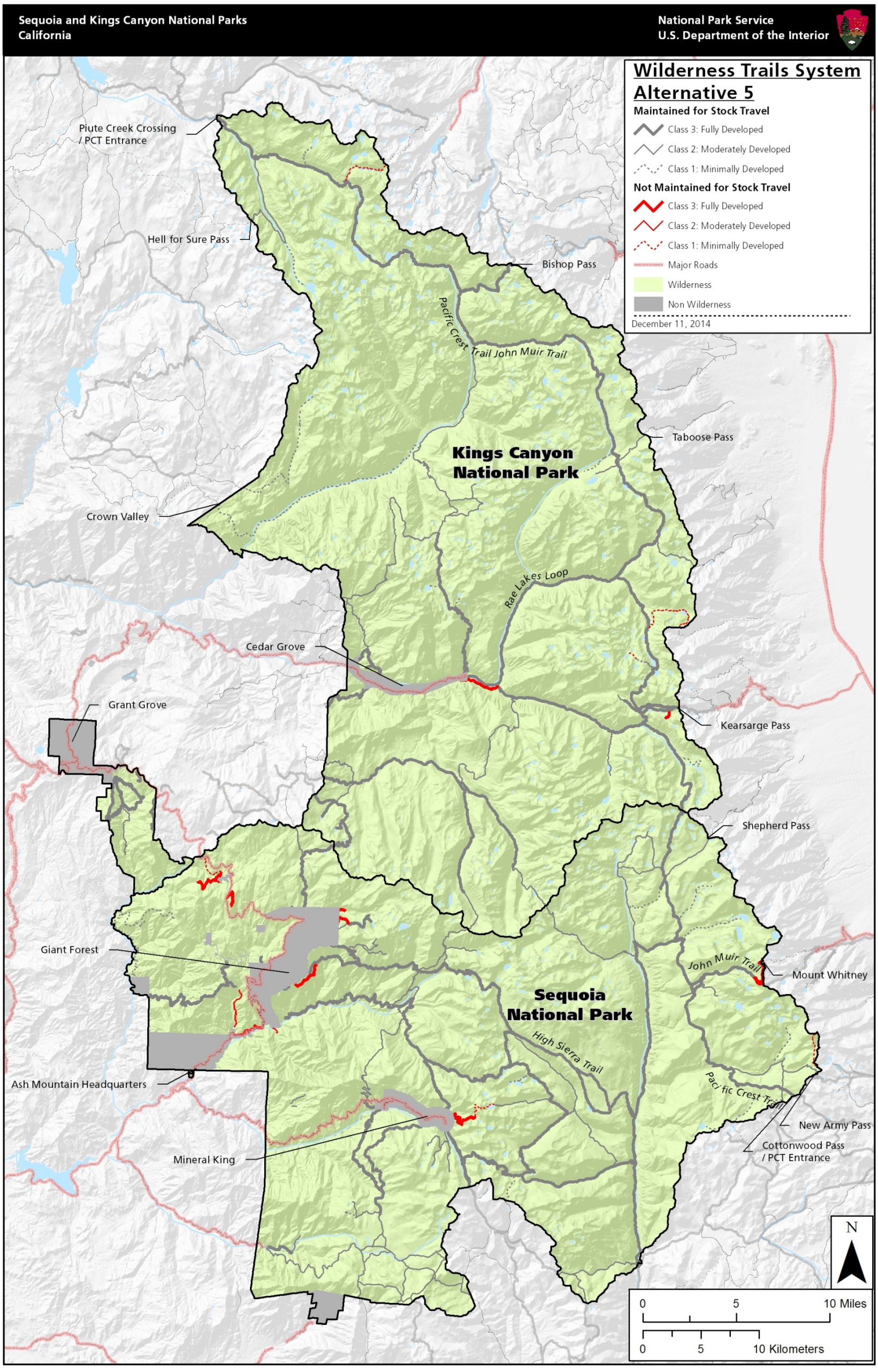


**Figure 20: Wilderness Trails System – Alternative 5**

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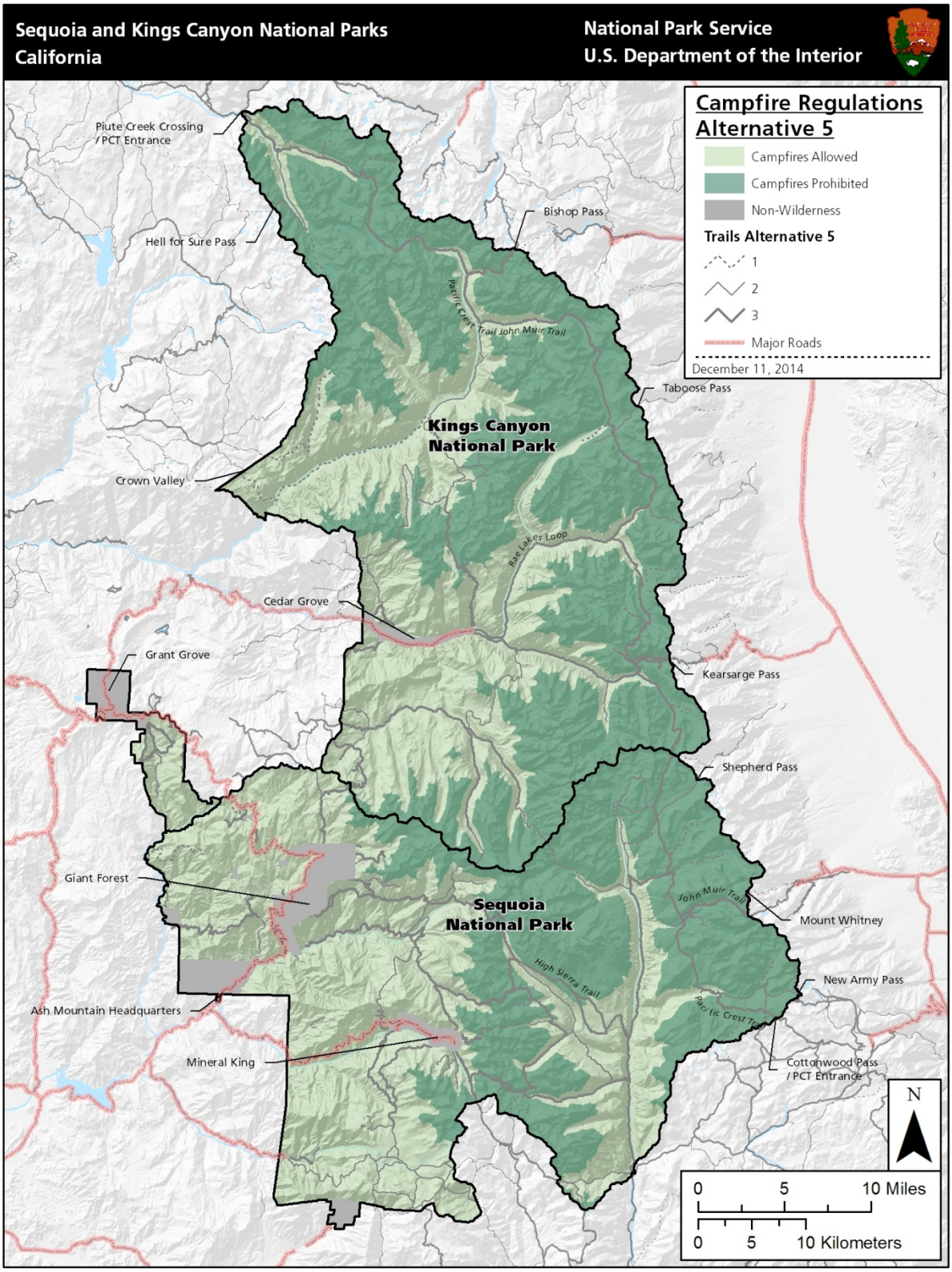


**Figure 21: Campfire Regulations – Alternative 5**

No campfires above 10,000 feet.

**Sequoia and Kings Canyon National Parks**
**California**

**National Park Service**
**U.S. Department of the Interior**

## Stock Access and Grazing Maps Legend

### Common to All Maps

**Ranger Stations**

- Ranger Station
- Patrol Cabin

**National Forest Trails**

- Trail Class 3
- Trail Class 2
- Trail Class 1
- Major Roads
- Non-Wilderness
- Non-Emphasis Park
- Park Boundaries

### Alternative 1

**On-Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 2

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

### Alternative 3

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 4

**On Trail Access - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative

**Travel and Camping - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative
- Travel allowed for private and administrative; closed for commercial

### Alternative 5

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

**Legend to Accompany Figure 22a: Stock Access and Grazing – Alternative 5, Kings Canyon National Park**

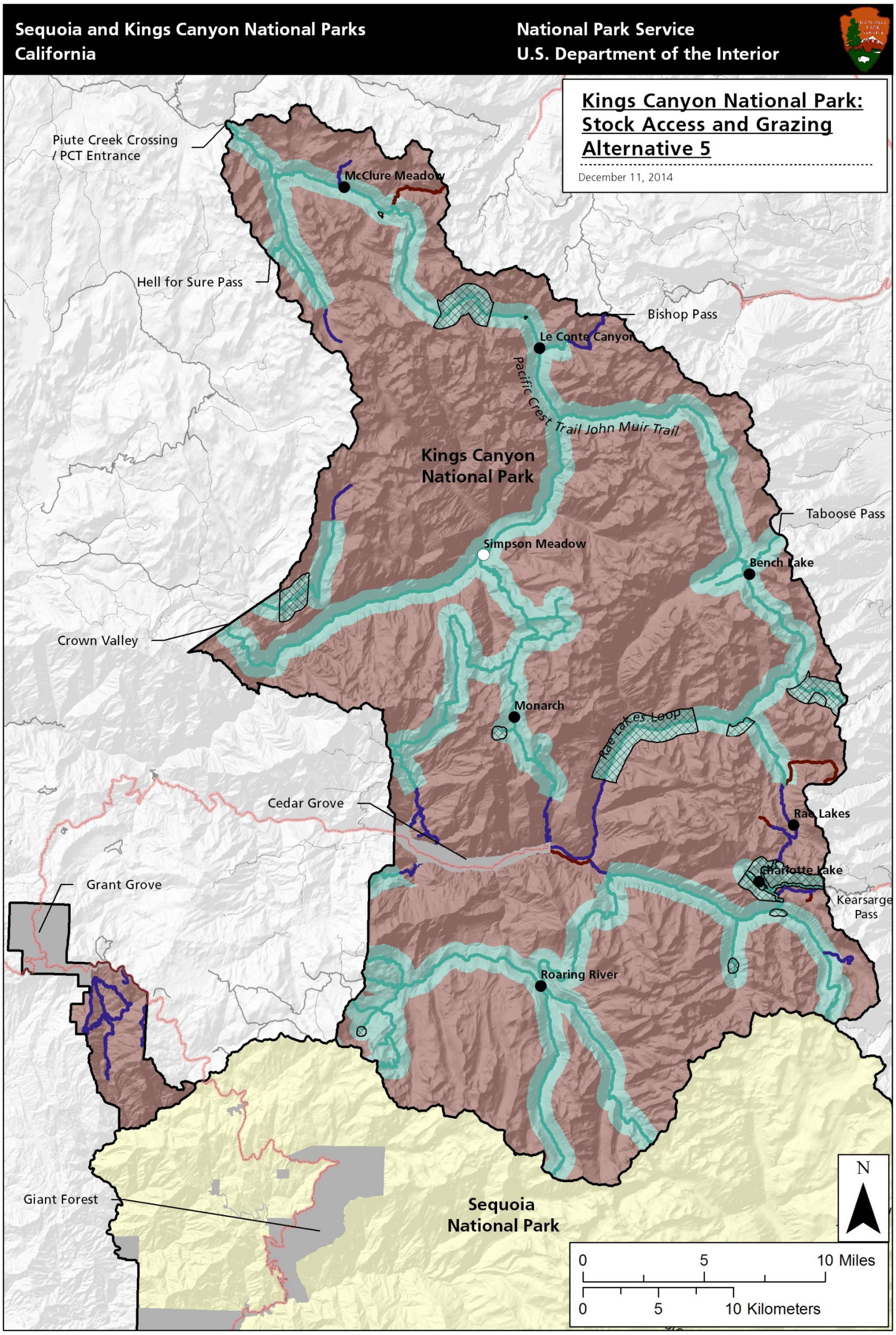


**Figure 22a: Stock Access and Grazing – Alternative 5, Kings Canyon National Park**

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**Sequoia and Kings Canyon National Parks**
**California**

**National Park Service**
**U.S. Department of the Interior**

## Stock Access and Grazing Maps Legend

### Common to All Maps

**Ranger Stations**

- Ranger Station
- Patrol Cabin

**National Forest Trails**

- Trail Class 3
- Trail Class 2
- Trail Class 1
- Major Roads
- Non-Wilderness
- Non-Emphasis Park
- Park Boundaries

### Alternative 1

**On-Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 2

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

### Alternative 3

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed by special permit

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed by special permit
- Open to camping; closed to grazing

### Alternative 4

**On Trail Access - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative

**Travel and Camping - No Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping allowed
- Camping allowed for private and administrative; travel allowed for commercial
- Camping allowed for private and administrative; closed for commercial
- Camping allowed for private; closed for commercial and administrative
- Travel allowed for private and administrative; closed for commercial

### Alternative 5

**On Trail Access**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules

**Travel, Camping, and Grazing**

- Travel allowed; no camping or grazing
- Closed to stock
- Camping and grazing generally allowed
- Camping and grazing allowed for burros and llamas; Travel allowed for horses and mules
- Camping and grazing allowed for burros and llamas; Closed to horses and mules
- Open to camping; closed to grazing

**Legend to Accompany Figure 22b: Stock Access and Grazing – Alternative 5, Sequoia National Park**

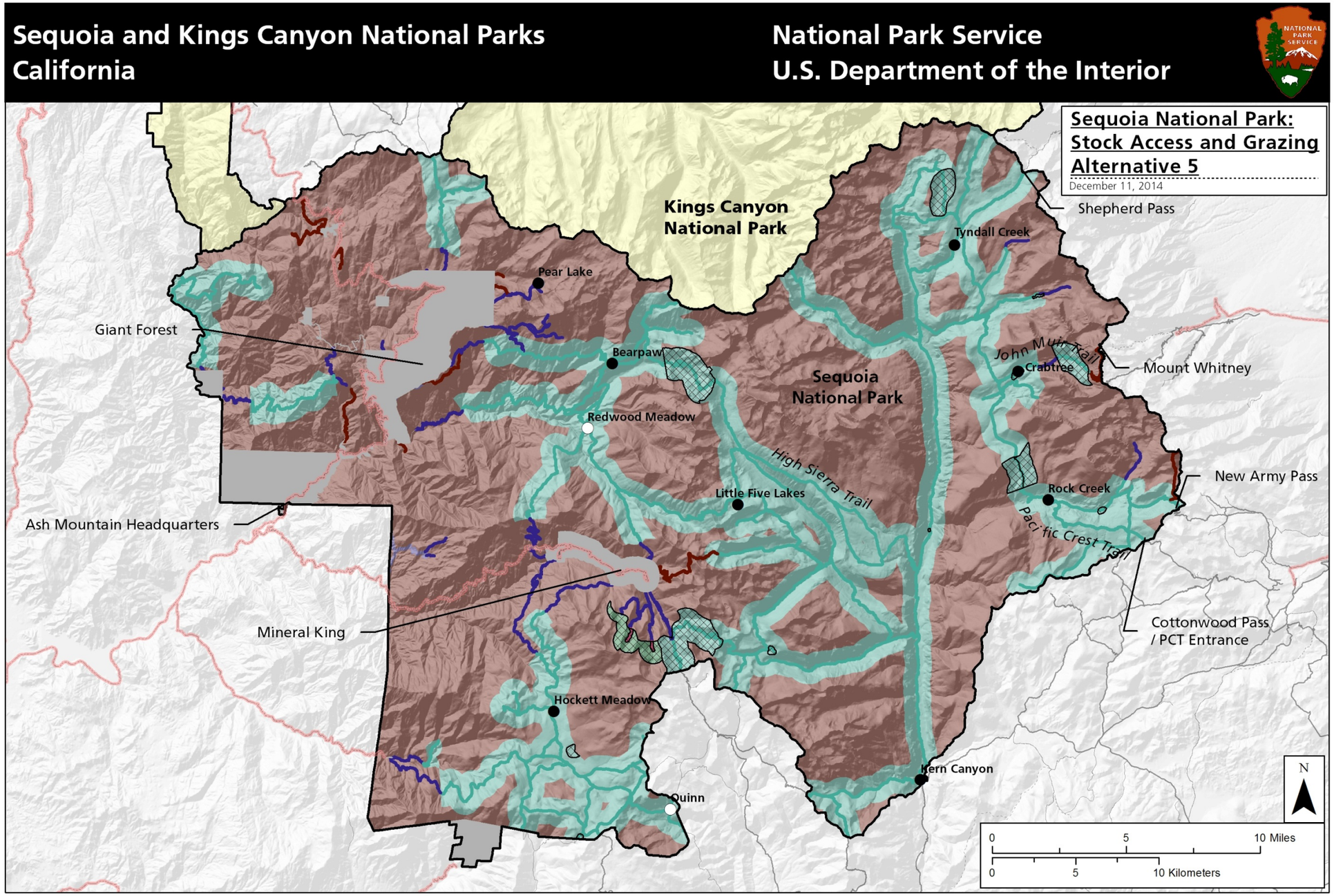


**Figure 22b: Stock Access and Grazing – Alternative 5, Sequoia National Park**

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# PROGRAMMATIC MINIMUM REQUIREMENTS ANALYSIS

The concept of minimum requirements comes from section 4(c) of the Wilderness Act of 1964:

> . . . except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

Section 6.3.5 of NPS *Management Policies 2006* states that the minimum requirement concept will be a two-step process to [1] determine if the management action is necessary "for administration of the area as wilderness and does not cause a significant impact on wilderness resources and character; and [2] the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized." Also: "When determining minimum requirements, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience."

A programmatic MRA has been prepared as part of this planning effort. This MRA process was used to help screen alternatives in anticipation of the need to authorize actions in the future while ensuring the preservation of wilderness resources and character. The programmatic MRA (appendix M) evaluates the program-level activities or actions to determine if they are appropriate or necessary for the administration of the area as wilderness, and analyzes how the selected alternative would achieve the desired conditions, focusing on the overall goal of preserving wilderness character. The programmatic MRA also provides a summary linked to the analysis in the WSP of the effects of each element on wilderness character.

**The appropriately named sky pilot, which blooms at high elevations**

# MITIGATION COMMON TO ALL ALTERNATIVES

This plan incorporates mitigations to protect wilderness character and visitor experience under each alternative. The basis of this plan is to mitigate impacts on wilderness character. In addition, there are wilderness-specific visitor-use limits and regulations (per CFR and the Superintendent's Compendium; appendix F) that preserve wilderness character.

A summary of the mitigation measures is provided below. More detailed mitigation and monitoring strategies are found in the referenced appendices. Additional mitigation measures may be added in the future as knowledge about stressors increases.

## MEASURES TO MANAGE VISITOR CAPACITY

*(See appendix A)*

**Campsite Conditions** — Management actions that could be taken to return out-of-standard areas to within standards include:

- Increase education – to the visiting public at large and to specific area visitors.
- Increase patrols to achieve compliance.
- Rehabilitate impacted areas.
- Take site-specific actions, such as modifying sites to render them uninviting to camping, or implement site-specific closures (short- or long-term) to camping.
- Close areas to camping (short- or long-term).
- Change group size, night limit and or campfire restrictions.
- Reduce commercial visitor services in out-of-standard areas.
- Change trailhead quotas.

**Trail Encounters** — Management actions that could be taken to return out-of-standard areas to within standards include:

- Increase education – to the visiting public at large and to specific area visitors.
- Change group size, night limits, and / or campfire restrictions.
- Reduce commercial visitor service days in out-of-standard areas.
- Change trailhead quotas.
- Require day-use or special-management-area permits.
- Implement cross-boundary actions with the USFS.

## MEASURES TO PROTECT WILDERNESS CHARACTER AND VISITOR EXPERIENCE

*(See appendices A, C, D, F, and K)*

- Appropriate actions would be taken to protect wilderness character and its formative qualities. Any proposed mechanized equipment use, motorized transport, installation, or other 4(c) prohibited actions, would be analyzed as mandated by the Wilderness Act through the MRA process.
- Standard noise abatement measures (e.g., using the quietest available equipment/tools) and educational actions (e.g., informing the public about project work) would be implemented, as appropriate, during park operations and construction activities to reduce impacts on visitor opportunities for solitude and primitive and unconfined types of recreation.
- The NPS will coordinate with the USFS to provide best available information to the public.
- If a trail is to be closed, efforts would be taken to inform the public about the closure and possible alternative routes. The wilderness office, public affairs office, visitor centers, and park partners would also be notified.

**Stock Manure Handling Best Practices** — The following best management practices can reduce the impacts of stock manure and urine on the natural environment and protect aesthetic aspects of wilderness character. Scattering (kicking) manure piles increases decomposition rates, reduces odors and fly concentrations, and reduces the potential for manure to enter water bodies.

*Required:*

- Remove manure from within 100 feet of core camping and tie-up areas and scatter manure on dry terrain. The core camp is defined as that area within 100 feet of the fire ring or cooking area.

*Recommended:*

- Carry a shovel and rake, and keep them readily accessible, for use in cleaning up and naturalizing areas.
- Scatter manure whenever encountered, paying particular attention to manure piles in or near water. Remove manure piles from water whenever possible. Scatter manure that accumulates at riding break areas.
- After stock have grazed or have been held in an area, inspect the area and scatter manure piles.
- Take measures that give stock an opportunity to urinate and defecate away from water (e.g., stop to let them urinate before leading them to water to drink).
- At parking areas and trailheads, pick up and remove all manure from the parks.

## MEASURES TO PROTECT WILD AND SCENIC RIVERS

- Potential impacts on outstandingly remarkable values or free-flowing character would be assessed prior to project work in accordance with the river protection measures established by parks' GMP (NPS 2007a).

## MEASURES TO PROTECT EMPLOYEES

- Tree and other environmental hazards would be considered in selection/maintenance of administrative camps. Choosing camps free of hazards is preferable to altering the environment to remove hazards; altering the environment to mitigate hazards would only be done pursuant to a site-specific MRA.

- Park staff would follow wilderness safety directives.
- The safety of wilderness staff requires effective communication. Existing radio repeaters would be maintained until they can be replaced with effective new technologies that better protect wilderness character. If structures are able to be removed, the installation sites would be restored to natural conditions.
- Park staff working in wilderness would be provided training and education on how to work, live, and travel safely in wilderness settings.
- To mitigate the inherent risks involved in wilderness travel and work, park staff will be trained to perform active risk management in the course of their duties.

## MEASURES TO PROTECT CULTURAL RESOURCES

- Cultural resources, including archeological sites, historic structures, and ethnographic resources, would be managed in accordance with the NHPA, and other applicable laws.
- In accordance with section 106 of the NHPA, archeological surveys and investigations would precede new construction- or project-related ground disturbance in previously undisturbed areas (e.g., the development of new trails in wilderness, the relocation of ranger stations, and for paleontological or other research excavations) to ensure that significant archeological resources are avoided to the greatest extent possible.
- The locations of administrative camps, trail reroutes, ground disturbance, and similar areas of potential impact would be assessed on a case-by-case basis.
- Work in areas where known cultural resources exist would be avoided to the extent possible.
- Archeological resources would be left undisturbed and preserved in a stable condition to prevent degradation and loss of research values unless intervention could be justified based on compelling research or site protection needs. Recovered archeological materials and associated records would be treated in accordance with NPS *Management Policies 2006*, NPS Museum Handbook, and 36 CFR Part 79.
- Should previously unknown historic or prehistoric resources be unearthed during any project implementation, work will be halted in the discovery area, the site secured, and parks' cultural resource specialist notified. A qualified cultural resource management specialist will examine the area as soon as possible and will follow the procedures of 36 CFR Part 800.13[c].
- The parks would continue to provide federally recognized tribes with appropriate access to sacred sites and ethnographic resources in wilderness. Information received during tribal consultations will assist cultural resources management.
- Mitigation measures for structures and landscapes include documentation according to standards of the Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscape Survey. The level of this documentation, which includes photography, archeological-data recovery, and/or a narrative history, would depend on significance (national, state, or local) and individual attributes (an individually significant structure, individual elements of a cultural landscape, etc.) of the resources. It would be determined in consultation with the CA SHPO, tribal historic preservation officer(s), local community (-ies), and/or other interested parties. When demolition of a historic structure is proposed, and following thorough documentation, its architectural elements and objects may be salvaged for reuse in rehabilitating similar structures or they may be added to the parks' collection. In addition, the historical alteration of the human environment and reasons for that alteration would be interpreted to national park visitors.

- Designs that are sensitive to and compatible with historic resources and cultural landscapes would be used for new construction. If adverse impacts could not be avoided, these impacts would be mitigated by strategies determined through a consultation process with all interested parties.

## MEASURES TO PROTECT NATURAL RESOURCES

The following practices would be followed when importing stock and feed into the parks:

- California or Nevada certified weed-free forage (baled or loose hay, hay cubes, or straw bedding) would be required when hay products are used as supplemental forage or bedding in the frontcountry. This requirement would be included in pack station concession contracts and commercial use authorizations.
- Feed carried into wilderness would be commercially processed pellets, rolled grains, or fermented hay. These products have a high level of mechanical milling, heat treatment, and/or anaerobic fermentation that destroys seeds. Baled or loose hay and compressed hay cubes, which have little to no processing, would not be allowed in wilderness. This applies to all users: administrative, commercial, and private.
- Stock users would be encouraged to purge their animals for three days on pellets, rolled grains, fermented hay, or certified weed-free forage prior to entering the parks.
- As a desired practice, stock would be inspected and cleaned by handlers prior to entering the parks, or prior to moving from frontcountry to wilderness within the parks, to remove any plant parts, seeds, or soil that may have adhered to animals, tack, or equipment. Packers would handle loads and tack in such a way as to avoid picking up plant parts, soil, or mud. This desired practice would be included in pack station concession contracts and commercial use authorizations. Private stock users would be informed of this practice through outreach and education.
- Manure that accumulates in corrals would be removed from the parks and not stockpiled or burned within the parks. This requirement would be included in pack station concession contracts.
- As a desired practice, NPS administrative corrals and concessioner pack stations would be kept free of invasive plants within a 50-foot buffer of the facility. This will be the responsibility of the NPS corrals and concessioner pack station staff. Invasive plant staff will monitor sites for invasive plants and consult on appropriate management strategies. Because there is limited time and funding to accomplish this practice, invasive plant staff will continue to work with corrals and concessioner staff to control invasive plants in the highest-risk facilities.

The following practices will be followed to protect wilderness vegetation:

- As a desired practice, the Ash Mountain helibase and frontcountry helispots will be kept free of invasive plants within a 50-foot buffer of the facility to reduce the risk of contaminating clothing, shoes, gear, and external loads. Cargo nets will be inspected and cleaned after use, particularly after use outside the parks or in low elevations. This will be the responsibility of heliport staff. Invasive plant staff are available to consult.
- Helicopter users would be responsible for inspecting and cleaning their gear, clothing, boots, and external load items for plant seeds, plant parts, and caked dirt and mud before loading. Helitack staff would inspect and clean helicopter skids.

- Heliport staff will track helicopter landing sites and cargo net drops and provide locations to a designated contact annually. Invasive plant, heliport, and wilderness ranger staff will work together to survey for new introductions and control invasive plants in wilderness helispots.
- Trailheads would be inspected for invasive plants and kept weed-free. Invasive plant staff would work with trailhead rangers and trail crews to inspect for and remove invasive plants.
- When travelling from frontcountry to wilderness; from lower to higher elevations; from areas of known weed infestations (communicated in training); or to or from meadows, riparian areas, or other wetlands; wilderness users should inspect, remove, and properly dispose of plant seeds, plant parts, and caked dirt and mud found on clothing, boots, tools, and camping equipment. Disposal consists of removing the seed, plant parts, and dirt from clothing and equipment at the origin of the material, or bagging the seeds, plant parts, and dirt and disposing in bagged garbage. Public users would be informed of this practice through outreach efforts.
- Invasive plant staff will strive to train all parks personnel in invasive plant identification, early detection, and reporting
- Where possible, crews would use established stock camps, trail crew camps, and backpacker camps. When a project requires that a new site be established for crew camping, appropriate Resource Management and Visitor Protection subject matter experts would be consulted regarding camp selection. Paramount in selecting a new site would be the ability to restore the site once the work project is completed and the camp is no longer needed.
- Park staff would use scrim, a coarsely woven fabric, or other protective coverings to protect vegetation where concentrated activities (such as administrative camps) would otherwise be likely to have long-term adverse impacts on ground cover.

The following practices will be implemented to protect natural resources and federally listed species (see the "Measures to Minimize Impacts on Federally Listed Species" section below for specific practices to protect federally listed species).

*(See appendices D, F, K, and N)*

- Park staff will comply with food storage, garbage disposal requirements, and the proper treatment of human waste at all times.
- Proposed trail realignments in designated critical habitats will require review by NPS biologists or ecologists.
- Projects will avoid in-stream work when possible. If in-stream work is required, activities will be coordinated with NPS hydrologists and compliance specialists.
- When new raised causeways are required to prevent increasing trail associated resource impacts or to provide adequate trail footing, these causeways will be constructed so as to minimize the effects on natural hydrologic processes, in consultation with a NPS hydrologist.
- Management actions that will be taken to return campsites in out-of-standard areas to within standard include: increased education to the public in specific areas; increased ranger patrols to achieve compliance; rehabilitation of impacted areas, site-specific actions such as modifying sites to render them uninviting to camping or implementation of site specific short- or long-term closures to camping; changing group size, night limit, or campfire restrictions; reduction of commercial visitor services in out-of-standard areas; and changing trailhead quotas.
- Management actions that will be taken to return out-of-standard trail encounters to within standard include: increased education to the public in specific areas; changing group size, night

limit, or campfire restrictions; reduction of commercial visitor services in out-of-standard areas; changing trailhead quotas; require day-use or special-management-area permits; and implementation of cross-boundary actions with the USFS.

- A monitoring system is employed to track use, document conditions, and provide information for preventing and mitigating impacts from stock grazing. The monitoring program takes into account variation in annual climate, the characteristics of specific forage areas, and the inherent abilities of different species to withstand grazing and trampling pressure. The strategy for managing stock use is designed to prevent significant impacts to meadows through implementation of multiple complementary monitoring protocols and a suite of adaptive management tools. Taken together, the complementary elements of the management program at the parks—monitoring, which includes residual biomass and bare ground, stock use, species composition, repeat photography, and regularly scheduled site visits; an opening date system based on moisture, soil, and vegetation conditions; management tools including the ability to rest meadows when needed, as well as adjust use levels through controls on party size and length of stay; and ongoing research into meadow function and the effects of grazing on meadow ecology—is designed to protect meadows by preventing, minimizing and/or mitigating impacts.
- The NPS would adjust the number of nights a given party may graze an area; adjust the number of stock per party that may graze an area; adjust opening dates to reflect moisture conditions to prevent unacceptable mechanical disturbance to surface soil and vegetation; and temporarily close an area to stock access or grazing in order to protect meadow resources.

## MEASURES TO MINIMIZE IMPACTS ON FEDERALLY LISTED SPECIES

The following measures will be implemented as required by the USFWS biological opinion for the WSP/FEIS (2015) to minimize adverse effects to the Northern Distinct Population Segment of the mountain yellow-legged frog, Sierra Nevada yellow-legged frog, and the Yosemite toad. These measures are non-discretionary.

- Camping by humans, and grazing and pasturing by stock will be carefully managed, and in some areas prohibited, in meadows and other aquatic areas where the Northern Distinct Population Segment of the mountain yellow-legged frog, Sierra Nevada yellow-legged frog, and the Yosemite toad are breeding or using the area in large numbers.
- Park staff and visitors will be educated about how to avoid impacting the mountain yellow-legged frog, and encouraged to exercise caution when they encounter the animal.
- The parks will provide the USFWS with a copy of the annual Stock Use and Meadow Monitoring field reports within ten (10) working days of completion.
- The parks will provide the USFWS with a copy of any scientific or management report completed on the three listed amphibians and activities included in the WSP within ten (10) working days of issuance.

To further limit the potential for adverse effects to federally listed species from the presence of hikers and stock, the following conservation measures would be implemented under all action alternatives:

- Existing trails that go through or near meadows used by the Yosemite toad may be rerouted away from those meadows.
- Park staff and visitors will be educated about how to avoid impacting the Yosemite toad and encouraged to exercise caution when they encounter these animals.

- Monitoring will be used to determine if effects of visitor use on the Yosemite toad or its habitat are approaching unacceptable levels; visitor use will be adjusted in Yosemite toad habitat to prevent or mitigate degradation.
- Existing trails that run immediately adjacent to waters used by the mountain yellow-legged frog may be rerouted away from these areas.
- New Class 1 trails may be designed to avoid running immediately adjacent to waters used by the mountain yellow-legged frog.
- Park staff will educate hikers and stock users about the status and importance of the mountain yellow-legged frog, the NPS' efforts to restore and conserve them, and encourage exercising caution when they encounter the animal.
- If monitoring detects habitats used by the mountain yellow-legged frog as being degraded due to overuse from stock grazing and/or hiker and stock traffic, visitor use restrictions could be changed to prevent or mitigate degradation.
- Off-trail travel may be limited near certain mountain yellow-legged frog populations to reduce the potential of trampling.
- New Class 1 trails will be constructed in a manner that minimizes opportunities for people to approach bighorn sheep from above or constructed completely outside of bighorn sheep habitat. Limiting human approaches from above would be beneficial because bighorn sheep generally run uphill when alarmed (Hicks and Elder 1979).
- Educational efforts cautioning park staff and visitors not to directly approach bighorn sheep will be increased.
- Helicopter use in bighorn sheep habitat will be scheduled to avoid sensitive periods (e.g., lambing season) and would avoid flying low or landing within one mile of bighorn sheep.

## STRATEGIES TO ADDRESS CLIMATE CHANGE COMMON TO ALL ACTION ALTERNATIVES

- Under anticipated climate change scenarios, the NPS may need to increasingly emphasize strong prevention and early detection measures to keep nonnative plants from invading newly suitable sites at higher elevations.
- Recognizing that changes in climate are likely to lead to changes in meadow conditions, "Appendix D: Stock Use and Meadow Monitoring and Management Strategy" includes specific provisions for re-evaluating and modifying grazing levels in order to prevent unacceptable changes in plant productivity, species composition, and soil condition. Results from the Sierra Nevada Inventory and Monitoring network Wetland Ecological Integrity protocol will document changes occurring in ungrazed meadows, providing information on reference conditions that can be applied to wilderness management. In addition, ongoing research assessing the vulnerability of wilderness meadows to hydrologic changes anticipated under a changing climate would inform grazing management.

# ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

During the scoping and planning process, other management approaches were considered. Six management actions were considered and dismissed for the following reasons:

- **Bear Poles or Wires** — The NPS would not consider installation of bear poles or bear wires under any alternative, and would remove any remnant poles or wires. Bear poles and bear wires are developments in wilderness that have been tested by past management at the parks and have been found ineffective. These installations would also create an increased workload for maintenance staff.
- **Hockett Plateau High Sierra Camp** — The GMP called for the consideration of a new commercial high sierra camp on the Hockett Plateau. However, this option has been rejected from consideration due to the 2009 Omnibus Act requiring the area to be managed as wilderness (PL 111-11, March 30, 2009, 123 STAT. 991). Constructing a new camp would be inconsistent with the Wilderness Act and would create additional developments in an area managed as wilderness.
- **Flotation Devices** — The GMP includes the comprehensive plan for Wild and Scenic Rivers and established measures to preserve the outstandingly remarkable values for designated river segments within the parks. One of the protective measures was the prohibition of flotation devices, boats, and rafts on the South Fork of the Kings River (from the Bubbs Creek confluence with the South Fork Kings downstream to the park boundary). All other Wild and Scenic Rivers in the parks are open to flotation devices. This decision will not be revisited during the development of this WSP.
- **Elevational Limits for Grazing** — Elevation is known to be a driver of biophysical processes — including plant productivity and decomposition — and thus influences the ability of meadows and uplands to sustain grazing. However, other factors such as moisture availability are equally important and do not always correlate with elevation. Therefore, after careful consideration, a single elevation limit above which grazing would be prohibited was dismissed from detailed analysis. To allow continued access to areas able to sustain grazing while providing for resource protection, estimated grazing capacities for wilderness meadows have been developed using a model of biomass production and forage consumption that takes into account not only elevation, but also soil moisture and condition of the meadow. The capacities are also informed by vulnerability to erosion or change in hydrologic function, susceptibility to invasion by nonnative plants, habitat requirements of sensitive plants and animals, productivity and the ability to sustain herbage removal, and the requirements of unique ecological communities such as peat-accumulating wetlands. Should grazing be allowed, these site-specific grazing capacities would be refined on an ongoing basis to protect resource integrity and wilderness character in the face of a changing climate.
- **Manure Bags** — The requirement for all stock users to utilize "manure bags" on their animals was considered but dismissed. While these may be effective in urban environments or for day trips during which stock only wear them for several hours, these were not designed for wilderness use. They are not suitable for typical trips in the parks' wilderness because animals would be required to wear them for many hours or days, and it would concentrate large amounts of waste, resulting in waste disposal issues in wilderness.

  Manure bags are known to chafe the skin of stock, and the parks do not consider them a feasible alternative for use on stock traveling long distances and for long time periods on the trails in

wilderness. Manure handling mitigations to guide stock users in properly treating stock manure will be provided to wilderness stock users.

- **Equipment and Materials Transported Into Wilderness** — Members of the public, including commenters on the WSP/DEIS, have expressed divergent views about what equipment and materials are appropriate to bring into wilderness, and have proposed that NPS restrict certain types of equipment and materials that other wilderness visitors are permitted to bring, especially when using support by a commercial service provider. These parks have concluded that restricting items that are not already addressed by current law and policy is unnecessary and impracticable, and that current restrictions are sufficient to protect wilderness character. For example, wilderness visitors, regardless of their use of commercial support, are restricted from using items identified as prohibited in Section 4(c) of the Wilderness Act. Wilderness visitors are also required to comply with a number of wilderness and NPS regulations (see "Appendix F: Wilderness Regulations, Restrictions, and Permit Conditions") that are designed to minimize visitors' impacts on wilderness character and other visitors. These parks have considered but dismissed additional restrictions on equipment and material that are not prohibited by existing law and policy. Equipment and materials that have been proposed for additional restrictions include:
    - Electronics such as GPS units, portable music devices, satellite phones, and cell phones - Some wilderness visitors may find that the use of hand-held and other electronic devices (such as personal locator beacons and satellite phones) reduces their ability to experience solitude and self-reliance. The Wilderness Act does not prohibit the uses of these personal electronic devices. The NPS, while not prohibiting these devices, encourages visitors to minimize the support of modern technology to take full advantage of the wilderness experience. While the NPS does not restrict electronics in wilderness, it does regulate noise (see "Appendix F: Wilderness Regulations, Restrictions, and Permit Conditions"). Despite the prevalence of technology in modern society, 29% of wilderness visitors who responded to a 2011 survey (Martin and Blackwell 2013) reported traveling without any hand-held technology. This number increased to 34% for cross-country wilderness travelers. The devices most commonly used by wilderness visitors were cameras (39.4%), smartphones (29%), GPS units (25.5%), tablets/media devices (19.5%), and other cell or satellite phones (21%) (Martin and Blackwell 2013).

    - Camp support equipment, such as chairs, tables and ice chests - These items provide for some level of comfort for wilderness travelers and are not inconsistent with wilderness character preservation, or appropriate wilderness experiences. It is worthwhile to note that the issue of what some visitors deem to be "unnecessary items" was presented and ruled on in HSHA vs. U.S. Department of Interior, May 29, 2012. The court in denying the validity of the claim of "unnecessary items," stated "It is not appropriate for one group of the parks' users to impose its vision of wilderness etiquette over others." (High Sierra Hikers Association v. U.S. Department of the Interior, 2012 U.S. Dist. LEXIS, 74124 (N.D. Cal.))

    - Food packaging, such as plastic and foil - Plastic and foil are a commonly used lightweight method of storing and carrying food into wilderness, and if properly used pose no threat to wilderness character. There are restrictions on improper use of these materials (e.g., littering and abandoning property).

# ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The CEQ defines the environmentally preferable alternative as — the alternative that would promote the national environmental policy as expressed in NEPA § 101. Section 101 states that it is the continuing responsibility of the federal government to:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The identification of the environmentally preferable alternative was based on analyses that balance factors such as physical impacts on the environment, mitigation measures to minimize impacts, and achievement of short- and long-term goals for protecting and improving wilderness character.

For a comparison of the alternatives and the potential environmental effects under each alternative, see "Table 45: Summary of Alternatives by Element" on page 237 and "Table 53: Summary of Impacts" on page 285. A full discussion of impacts is presented in "Chapter 4: Environmental Consequences."

All of the alternatives would fulfill all of the above CEQ requirements to some degree. The action alternatives would fulfill these requirements somewhat equally, through continuation of existing wilderness and resource management policies, ecological restoration of fragile meadow and riparian areas, protection of water quality, and protection of archeological resources. The alternatives would vary primarily in protection of historic resources, sensitive meadows and riparian areas, protection of downed wood and sensitive species, and the diversity of recreational (primitive and unconfined) opportunities and opportunities for solitude provided to the public. All alternatives provide for as safe an environment as possible, given that wilderness recreation involves inherent risks.

The NPS has determined that alternative 5 is the environmentally preferable alternative. Alternative 5 best promotes the requirements of the national environmental policy expressed in section 101(b) of NEPA. It is the alternative that causes the least amount of impacts on the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources, and best achieves the short- and long-term goals for protecting and improving wilderness character. Alternative 5 best meets these requirements. A brief summary of how the environmentally preferable alternative was selected follows below.

Alternative 1 (no-action / status quo) preserves important historic, cultural, and natural aspects of our national heritage. It also provides for diversity and variety of primitive and unconfined recreational choice; however, it would not best fulfill any of the other requirements, particularly at popular areas, including Mount Whitney, where high levels of visitor use during busy periods would continue to

adversely affect visitor solitude, and potentially affect sensitive natural resources. Natural resources such as wetlands and meadows would continue to be affected by trampling and grazing from stock use in meadows open to grazing. As this alternative does not address the existing management concerns in a proactive manner, and would not specifically ensure the protection of wilderness character, this alternative is not the environmentally preferable alternative.

Alternative 2 is similar to alternative 1 in that it provides for diversity and a variety of primitive and unconfined recreation, but it would implement additional restrictions in selected areas to preserve or better protect natural resources and the visitor experience in those areas. Management strategies implemented under this alternative would improve conditions at the most popular areas in the wilderness, protecting ecologically sensitive areas, improving the natural quality of wilderness, and enhancing opportunities for solitude. The implementation of grazing capacities and the closure of selected meadows would result in an improvement of the natural quality of wilderness, while preserving opportunities for primitive and unconfined recreation. Removing some developments also improves the natural and undeveloped qualities under this alternative. However the removal of a significant historic resource at Bearpaw Meadow results in an adverse effect on a cultural landscape. Overall, impacts on natural resources would be similar to current conditions but with some increased beneficial effects due to the implementation of management strategies in popular areas. This alternative fulfills most of the CEQ requirements, but based on the environmental analysis in chapter 4, would result in fewer environmentally beneficial effects overall than alternative 5. Therefore this alternative was not selected as the environmentally preferable alternative.

Alternative 3 would allow for increased visitor use resulting in more recreational opportunities and individual choice. It would also impose the most restrictions on visitor use wilderness-wide. Alternative 3 would result in the most new facilities and increased encounter rates, resulting in the greatest adverse impact on the wilderness qualities of undeveloped and solitude when compared with the other alternatives. Although use would be allowed to increase with increases in the quota numbers, it is likely that only the quotas to busy areas would continue to be met; therefore these effects would be limited to the most popular areas. Similar to alternative 2, this alternative removes a significant historic resource at Bearpaw Meadow resulting in an adverse effect on a cultural landscape. Alternative 3 results in adverse impacts on some natural resources including soils and alpine vegetation due to an increase in visitors, stock, and development wilderness-wide, but it also results in beneficial effects on other resources such as high-elevation long-lived trees due to reduced impacts from firewood collection. Because of the potential for increased use resulting in increased adverse effects, this alternative is not the environmentally preferable alternative.

Alternative 4 would be similar to alternative 5 in preserving and protecting natural resources. Beneficial effects on soils, water quality, vegetation (wetlands and meadows), invertebrates, and special-status species would occur due to decreases in the number of stock that would likely result because there would be no grazing wilderness wide. There would be further restrictions on commercial access. Therefore, there would be reduced opportunities for primitive and unconfined recreation, and reduced recreational diversity and variety of individual choice. This alternative is the most protective of high-elevation forests because there would be no campfires allowed wilderness-wide, enforces the greatest restrictions on Yosemite toad habitat, and has substantial beneficial effects on native plant communities. However this alternative would result in the most adverse effects on cultural and historic resources. In addition to removing a significant historic resource at Bearpaw Meadow as does alternatives 2 and 3, this alternative also removes three ranger stations that are listed or eligible for listing on the National Register resulting in an adverse effect on these cultural resources. Alternative 4 would create the most improvement in the undeveloped quality, but may result in a reduced level of wilderness management overall. When weighing the overall effects of alternative 4, it would rank as the second-most environmentally preferable alternative.

Alternative 5 supports diversity and variety of individual choice, protects solitude without degradation or other undesirable consequences, and protects wilderness character and qualities. However, alternative 5 would reduce overall opportunities for primitive recreation. By reducing overall use levels, alternative 5 does not attain the widest range of beneficial uses of the environment nor achieve a balance between population and resource use. In addition, this alternative along with the other action alternatives removes a historic resource at Bearpaw Meadow resulting in an adverse effect on a cultural landscape. Alternative 5 is similar to alternatives 3 and 4 in preserving and protecting natural resources. Beneficial effects on soils, water quality, vegetation (wetlands, meadows, and alpine), invertebrates, and special-status species would occur due to decreases in administrative and commercial stock use, reduced stock-party size, reduced trailhead quotas, and closure of some meadows to grazing. However, this alternative is not as protective of high-elevation long-lived trees as alternative 4, as campfires would continue to be allowed, and would not be as protective of meadows as alternative 4, since grazing would continue to be allowed. Alternative 5 would best fulfill the responsibilities of the NPS to select the alternative that has the least amount of impacts to the biological and physical environment; that balances the preservation and protection of natural, aesthetic, historic, and cultural resources with visitor use, therefore, it is the environmentally preferable alternative.

## SUMMARY AND COMPARISON OF ALTERNATIVES AND IMPACTS

This section includes tables which present more detailed comparisons of the five alternatives considered in this WSP/FEIS by wilderness management element.

### SUMMARY TABLES

Table 45 provides a summary of the alternatives by each wilderness management element, excluding Element 10: Frontcountry Facilities that Support Wilderness Access and Use. In addition, there are more detailed summary tables for specific elements:

- Table 46 compares trailhead quotas under each alternative (element 1).
- Tables 47a to 47f provide information on mileage of trails by class and designation for hikers and stock users under each alternative (element 2).
- Table 48 and table 49 give party-size limits for hikers and stock users under each alternative (element 6).
- Table 50 provides a comparison of stock access and grazing under each alternative (element 8).
- Table 51a and 51b provide the list of stock facilities and a comparison of these facilities between alternatives (element 8).
- Table 52 summarizes actions regarding frontcountry facilities that support wilderness under each alternative (element 10).
- Table 53 summarizes the impacts of each alternative on each resource. More detail on the alternative impacts analysis can be found in chapter 4.

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**Table 45: Summary of Alternatives by Element**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 1: Visitor-use Levels**<br>Permitting/Quotas<br>*See comparison table 46 on page 246.* | Trailhead quotas exist at most locations. | Trailhead quotas would remain the same or be slightly reduced in high-use areas. | Trailhead quotas would be increased by 10% in some areas. | Daily trailhead quotas would remain the same or be slightly reduced in highest use areas compared to alternative 1. Trailhead quotas in low-use areas would be reduced from those of alternative 1. | Trailhead quotas would be reduced by 30% wilderness-wide. |
| **Element 1: Visitor-use Levels**<br>Destination Quotas | Destination quotas apply for Emerald and Pear lakes. | Existing destination quotas would continue to be applied.<br>Additional destination quotas may be added for specific areas (e.g., Bearpaw, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lakes, Rae Lakes, and other areas). | Existing destination quotas would continue to be applied.<br>No additional destination quotas would be added. | Existing destination quotas would continue to be applied.<br>Additional destination quotas may be added in the future for specific areas including Bearpaw, Dusy Basin, Guitar Lake, Hamilton Lake, Monarch Lake, Rae Lakes, and potentially others. | Existing destination quotas would be discontinued.<br>New destination quotas may be implemented for specific popular areas. |
| **Element 1: Visitor-use Levels**<br>Day-use Permits and Quotas | There are no day-use permits/quotas. | No day-use permits/quotas would be implemented at this time but they may be considered in the future in the most popular areas to meet desired conditions. | No day-use permits/quotas would be implemented. | Same as alternative 2. | Day-use quotas would be applied in specific areas (e.g., Lakes Trail, Mist Falls, Monarch Lake, and potentially other areas). |
| **Element 2: Trails**<br>*See comparison tables 47a through 47f starting on page 246. Appendix K has more details on the trail management and classification system.* | There is currently no trail classification system.<br>Trails are maintained, relocated, or reconstructed per the NPS Trail Maintenance Handbook standards and the BMP and SUMMP.<br>No new trail construction is authorized. | A trail management and classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 3 trails would be downgraded to Class 2.<br>Some Class 2 trails would be downgraded to Class 1.<br>New Class 1 trails would be established to protect resources; some Class 1 trails would be abandoned. | A trail management and classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 2 trails upgraded to Class 3.<br>New Class 1 trails could be established or abandoned to protect resources.<br>Some Class 1 trails upgraded to Class 2. | A trail management and classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Some Class 3 trails downgraded to Class 2.<br>Most Class 2 trails would be maintained to Class 2, but some would be upgraded to Class 3 or downgraded to Class 1.<br>Some Class 1 trails would be abandoned. | A trail management and classification system would be established and trails would be designated Class 1, 2 or 3 and maintained to trail class.<br>Most trails would be maintained at their "current" class. |
| **Element 2: Trails**<br>Signs | Trail signs with directional markers and mileages are present. Interpretive signs are generally not authorized. | Signs would be appropriate to trail class. | Same as alternative 2. | Same as alternative 2. | Same as alternative 2. |
| **Element 3: Campfire**<br>Restrictions | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would continue to be allowed up to:<br>10,000 feet in the San Joaquin and Kings river drainages.<br>9,000 feet in the Kaweah River drainage.<br>10,400 feet in the Kern River drainage. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed up to:<br>10,000 feet in the San Joaquin, Kern, and Kings River drainages.<br>9,000 feet in the Kaweah and Tule River drainages. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed up to 9,000 feet wilderness-wide. | No campfires in wilderness. | Recreational campfires would be allowed in the foothill and montane forest areas where adequate wood supplies exist.<br>Recreational campfires would be allowed up to 10,000 feet wilderness-wide. |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 3: Campfires**<br>Site-specific Variations | Additional site-specific prohibitions are in place in the Kings, Kaweah, Kern, and Tule River drainages. | In areas where available wood could be burned without unduly depleting ground fuels or consuming important resources, variances could be established.<br><br>Site-specific prohibitions would be implemented at: Hamilton Lakes, Mineral King Valley, Pinto Lake, Redwood Canyon, and in selected sequoia groves. | No variances would be established.<br><br>Site-specific prohibitions would be implemented in the most popular areas (e.g., PCT/JMT, Rae Lakes Loop, HST, Mineral King Valley, and Rock Creek drainage) and in selected sequoia groves. | N/A: No campfires in wilderness. | No variances would be established.<br><br>Site-specific prohibitions would be implemented in selected sequoia groves. |
| **Element 3: Campfires**<br>Summary | Allows recreational campfires in 398,829 acres of 837,806 acres of wilderness. | Allows recreational campfires in 395,710 acres of 837,806 acres of wilderness. | Allows recreational campfires in 293,840 acres of 837,806 acres of wilderness. | Allows recreational campfires in 0 acres of wilderness. | Allows recreational campfires in 425,276 acres of 837,806 acres of wilderness. |
| **Element 4: Food-storage**<br>Food-storage Boxes | There are 86 food-storage boxes currently in wilderness and these would remain. | Of the existing 86 food-storage boxes, 48 would be retained and 26 would be removed. An additional 13 food-storage boxes would be tested prior to removal.<br>Food-storages boxes would be retained in highest use areas (e.g., Rae Lakes Loop, HST). Some boxes could be relocated. | Existing food-storage boxes would be retained; however, they may be relocated.<br>Up to 35 new food-storage boxes would be added in key areas. | All food-storage boxes would be removed. | Same as alternative 4. |
| **Element 4: Food-storage**<br>Portable Container Requirements | Portable food-storage containers are required for overnight use at Rae Lakes Loop and vicinity, Dusy and Palisades basins, and in the Rock Creek area. | Portable containers would be required for overnight use at North Dome, Dusy Basin, Rae Lakes Loop and Rock Creek areas, and may be required in other areas. | Existing portable container requirements would be modified based on the locations of additional food-storage boxes.<br>Additional portable container requirements would be implemented in specific areas as needs arise. | Portable containers would be required for all overnight users wilderness-wide. | The NPS would retain the ability to require portable containers in specific areas. |
| **Element 4: Food-storage**<br>Requirements – Commercial Guides | Commercial guides (stock and hiking) are required to use portable containers wilderness-wide (CUA condition). | Same as alternative 1. | Same as alternative 1. | Same as alternative 1. | Same as alternative 1. |
| **Element 4: Food-storage**<br>Other Methods | Counterbalancing and hanging food is allowed.<br>Guarding food items is not allowed. | Counterbalancing and hanging would be allowed in areas where containers are not required.<br>Guarding food items is not allowed. | Same as alternative 2. | Counterbalancing and hanging and guarding food items would not be allowed. | Self-determined food-storage methods would be required (counterbalancing and hanging food or portable containers).<br>Guarding food items would not be allowed. |
| **Element 5: Human Waste**<br>Cat-holes | Cat-holes are required where there are no privies/restrooms. | Same as alternative 1. | Cat-holes would be required where there are no privies/restrooms except in areas where pack-out waste kits are required. | Cat-holes would be required (except in areas with pack-out waste kit requirements). | Cat-holes would be required in all areas. Visitors may elect to use pack-out waste kits. |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 5: Human Waste**<br>Privies and Restrooms | There are two restrooms and 21 privies in wilderness. | Existing privies and restrooms (Emerald and Pear lakes) would be evaluated and those beyond reasonable repair or in unsuitable locations (low-use, close-in areas, where soils allow for cat-holes) would be removed.<br>Nine public-use privies would be retained; seven public-use privies would be removed; one public-use privy would be added at Rock Creek Crossing.<br>New privies would be considered for high day-use areas.<br>Five additional privies/restroom buildings could be removed if maintaining them becomes cost prohibitive or if pack-out waste kit testing is successful. | All existing privies and restrooms would be retained.<br>New privies would be considered for popular day-use areas (e.g., Heather Lake) and popular overnight areas. | All existing privies and restrooms would be removed (including Emerald and Pear Lake restrooms), except those affiliated with administrative structures.<br>No new privies, vault toilets, or restrooms would be constructed. | Same as alternative 4. |
| **Element 5: Human Waste**<br>Pack-out Waste Kits | Pack-out waste kits are highly recommended in the Mount Whitney area. | Pack-out waste kits may be required in certain areas to minimize the need for privies and restrooms. | Pack-out waste kits would be required in the Mount Whitney area. Existing privies would remain and be maintained in their current locations. | Pack-out waste kits would be recommended or required in popular areas. | Pack-out waste kits would be recommended in certain areas. |
| **Element 6: Party Size**<br>Hikers and Boaters<br>*See comparison table 48 on page 264.*<br>*Note: Off-trail restrictions apply to both day users and overnight users.* | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 15. | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 12 (day use and overnight use) except in areas with specific lower limits (see below). | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 15.<br>Off-trail party size limit of 15 (day use and overnight use). | On-trail (day use) party size limit of 25<br>On-trail (overnight use) party size limit of 12.<br>Off-trail party size limit of 8. (day use and overnight use) | On-trail (day-use) party size limit of 20.<br>On-trail (overnight use) party size limit of 10.<br>Off-trail party size limit of 8. |
| **Element 6: Party Size**<br>Recreational Stock Users<br>*See comparison table 49 on page 265.*<br>*Note: Off-trail restrictions apply to both day users and overnight users.* | Maximum party sizes include:<br>On-trail (day-use) – (including day rides, spot and dunnage) – 25 people; 20 stock; combined maximum of 45.<br>On-trail – 15 people; 20 stock; combined maximum of 35 (with some lower exceptions).<br>Off-trail – 15 people; 20 stock; combined maximum of 35. | Maximum party sizes include:<br>Day Rides – 20 people; 20 stock; combined maximum 40.<br>On-trail – 15 people; 20 stock; combined maximum 28.<br>Off-trail – 12 people; 12 stock; combined maximum 14. | Maximum party sizes include:<br>Day Rides – 25 people; 25 stock; combined maximum 50.<br>On-trail –15 people, 25 stock; combined maximum 40.<br>Off-trail – 15 people; 25 stock; combined maximum 40. | Maximum party sizes include:<br>Day Rides – 15 people; 15 stock; combined maximum 30.<br>On-trail – 12 people; 15 stock; combined maximum 20.<br>Off-trail – 8 people; 7 stock; combined maximum 11. | Maximum party sizes include:<br>Day Rides – 13 people; 13 stock; combined maximum 26.<br>On-trail – 10 people; 13 stock; combined maximum 18.<br>Off-trail – No off-trail stock use allowed. |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 6: Party Size**<br>Area-specific Restrictions<br>*See comparison tables 48 and 49 on pages 264 and 265.* | Temporary party-size limits of 8 (number of people and stock combined) in five off-trail areas (Darwin Canyon, Dusy Basin, Mount Whitney / Mount Langley, Sixty Lake Basin, and Sphinx Lakes). | Existing off-trail temporary party-size limits of 8 would be adopted permanently at Darwin Canyon/Lamarck Col (includes Class 1 trail area), Dusy Basin, Mount Whitney / Mount Langley (includes Class 1 trail area), Sixty Lake Basin, and Sphinx Lakes.<br>Upper Goddard Canyon/Martha Lake would have a party-size limit consistent with the off-trail party size (12 people, 12 stock, combined maximum of 14).<br>Combined party size of 8 (people and stock) for day rides into Sixty Lake Basin. Trail closed to stock beyond a point 1.8 miles from the junction of the JMT and the Sixty Lake Basin Trail.<br>Combined party size of 8 (people and stock) for day rides above Penned Up Meadow on the Class 1 trail into Miter Basin. | Existing temporary party-size limits would be removed (party size of 8).<br>A party-size limit of 4 would be implemented for camping at North Dome. | Existing temporary party-size limits would be removed and replaced with a wilderness-wide off-trail party size of 8. | Existing temporary party-size limits would be removed and replaced with a wilderness-wide off-trail party size of 8.<br>Consider more restrictive party size for day-use in specific highly visited areas (Lakes Trails, Mist Falls, Monarch Lake, and potentially other areas). |
| **Element 6: Party Size – General**<br>Area-specific Restrictions – Redwood Canyon | Redwood Canyon: maximum of 10 stock and maximum hiker party size of 10 people. | A party-size limit of 10 people or 10 people with 10 stock (combined maximum of 20) would be retained for Redwood Canyon. | A party-size limit of 10 people or 10 people with 10 stock (combined maximum of 20) would be retained for Redwood Canyon. | A party-size limit of 8 people or 8 people with 8 stock (combined maximum of 16) would be implemented for Redwood Canyon. | A party-size limit of 6 people or 6 people with 6 stock (combined maximum of 12) would be implemented for Redwood Canyon. |
| **Element 6: Party Size – General**<br>Area-specific Restrictions – Milestone Basin | Milestone Basin maximum of 8 stock, by special permit only. | N/A: Closed to stock. | Same as alternative 1. | N/A: Closed to stock | N/A: Closed to stock. |
| **Element 7: Camping/Campsites**<br>Allowable camping relative to wilderness boundary or trailhead – *See first allowable campsite tables 8, 9, and 19 on pages 68, 69, and 116.* | Camping would continue to be prohibited within 1 mile of any road and generally within 4 miles of a developed area or trailhead complex. | Camping would be prohibited within specified distances from each trailhead and 1 mile from any frontcountry development. | Same as alternative 2. | Same as alternative 2. | Same as alternative 2. |
| **Element 7: Camping/Campsites**<br>Close-in Camping Areas | None | Allow camping in specific close-in areas (e.g., Colony Mill Trail, Don Cecil Trail, and North Dome). | Same as alternative 2. | No camping in specific close-in areas (e.g., within 2 miles of either trailhead on the Colony Mill Trail; on the entire Don Cecil Trail). | Same as alternative 2. |
| **Element 7: Camping/Campsites**<br>Existing Designated Campsites | Designated camp area exists at Bearpaw Meadow and designated campsites exist at Emerald and Pear lakes and Paradise Valley. | Existing designated sites at Emerald and Pear lakes, lower Paradise Valley, and the designated camp area at Bearpaw Meadow would be retained. | Same as alternative 2. | All existing designated sites at Emerald and Pear lakes, Paradise Valley, and the camp area at Bearpaw Meadow would be removed. | Existing designated sites at Emerald and Pear lakes, Paradise Valley, and the camp area at Bearpaw Meadow would be removed. |
| **Element 7: Camping/Campsites**<br>New Designated Campsites | No additional designated campsites would be established. | Additional designated sites or camp areas could be established at selected high-use areas, including but not limited to: Dusy Basin, Guitar Lake, Kearsarge Lakes Basin, Middle and Upper Rae Lakes, and Woods Creek Crossing. | Additional designated sites would be established in selected popular areas, including but not limited to Dusy Basin, Evolution Valley, Guitar Lake, JMT, Kearsarge Lakes Basin, Middle and Upper Rae Lakes, Mineral King Lake Basins, PCT, Redwood Canyon, and Woods Creek Crossing. | No new designated sites would be established at this time. | Same as alternative 4. |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 7: Camping/Campsites**<br>Universally Accessible Sites | None | One or more universally accessible campsites closer to the trailhead would be considered (Potential location to consider – near the confluence of Bubbs Creek and South Fork Kings River). | Same as alternative 2. | None | None |
| **Element 7: Camping/Campsites**<br>Stock Users | No camps would be designated for the exclusive use of stock users with the exception of Upper and Lower Funston Meadows. No other camps are designated for the exclusive use of stock users. | In specific high-use locations, stock users may be required to camp in designated stock camps (e.g., Big Pete Meadow, Rock Creek Crossing, and Woods Creek Crossing). These sites would be stock user only camps.<br>Upper and Lower Funston would no longer be designated stock camps. | In specific, high-use locations, stock users may be required to camp in designated stock camps, These sites would be stock user only camps. | There would be no designated stock camps. | Same as alternative 4. |
| **Element 7: Camping/Campsites**<br>Night Limits | Visitors are limited to 14 consecutive nights at a single location, 21 consecutive nights per trip, and 63 total nights per year except for the specific areas below. | Visitors would be limited to 14 consecutive nights at a single location, 25 consecutive nights per trip, and 75 total nights per year except for the specific areas below. | Visitors would be limited to 7 consecutive nights at a single location, 20 consecutive nights per trip, and 60 total nights per year except for the specific areas below. | Visitors would be limited to 10 consecutive nights at a single location, 21 consecutive nights per trip, and 63 total nights per year except for the specific areas below. | Visitors would be limited to 10 consecutive nights at a single location, 21 consecutive nights per trip, and 63 consecutive nights per year except for the specific areas below. |
| **Element 7: Camping/Campsites**<br>Area-specific Night Limits | 2-night limit at Charlotte Lake, Hamilton Lake, Kearsarge Lakes, Paradise Valley, and Redwood Canyon.<br><br>1-night limit at Rae Lakes, per lake. | 3-night limit at Emerald and Pear lakes (combined) and at Soldier Lake.<br><br>2-night limits at Charlotte Lake, Colony Mill Trail, Crabtree area, Don Cecil Trail, Dusy Basin, Guitar Lake, the JMT from Woods Creek Crossing to Vidette Meadow, Kearsarge Lakes Basin, North Dome, Paradise Valley, and Redwood Canyon.<br><br>1-night limit at Hamilton Lake and 1-night limit per lake at Rae Lakes. | 2-night limit at Charlotte Lake, Colony Mill Trail, Crabtree area, Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Guitar Lake, Hamilton Lake, Kearsarge Lakes Basin, North Dome, Paradise Valley, Redwood Canyon, and Soldier Lake.<br><br>1-night limit per lake at Rae Lakes, at any one location on the JMT between Vidette Meadow and Woods Creek Crossing. | 4-night limit at Crabtree area and Soldier Lake.<br><br>3-night limit at Charlotte Lake, Colony Mill Trail, Emerald and Pear lakes (combined), Guitar Lake, the JMT from Woods Creek Crossing to Vidette Meadow (at any one location), North Dome, and Redwood Canyon.<br><br>2-night limits at Dusy Basin, Hamilton Lake, Kearsarge Lakes Basin, Paradise Valley, and Rae Lakes (per lake). | 4-night limits at Colony Mill Trail, Crabtree area, Guitar Lake, and the JMT from Woods Creek Crossing to Vidette Meadow.<br><br>3-night limits at Don Cecil Trail, Dusy Basin, Emerald and Pear lakes (combined), Kearsarge Lakes Basin (combined), Paradise Valley (whole valley), Redwood Canyon, and Rae Lakes (per lake).<br><br>2-night limit at Hamilton Lake. |
| **Element 8: Stock Use**<br>Access and Travel<br>On-trail<br>*See tables 47a through 47f starting on page 246 for specific trail mileages.* | On-trail:<br>Currently nearly all maintained wilderness trails in the parks are open to stock (637 of 653 miles). Stock travel is also permitted on 77 miles of informal and abandoned trails.<br><br>(Note: Not all trails open to stock are maintained to stock standards) | On-trail:<br>Stock travel would be allowed on 650 of 691 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 671 of 714 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 527 of 643 miles of maintained trails. | On-trail:<br>Stock travel would be allowed on 665 of 702 miles of maintained trails. |
| **Element 8: Stock Use**<br>Access and Travel<br>On-trail Camping Access | Approximately 598 miles of maintained and unmaintained trails are open to camping with stock. | Approximately 530 miles of maintained trails would be open to camping with stock. | Approximately 565 miles of maintained trails would be open to camping with stock. | Approximately 377 miles of maintained trails would be open to camping with stock. by all user groups (private, commercial, and administrative) with an additional 72 miles of maintained trails open to overnight travel by private stock or administrative stock parties only (closed or day-use only for commercial stock). | Approximately 555 miles of maintained trails would be open to camping with stock. |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 8: Stock Use**<br>Access and Travel<br>Off-trail | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock is allowed in four areas of the parks: on the Hockett Plateau, along the western side of the Kern River watershed south from the Chagoopa Plateau, on the Monarch Divide including Hotel Creek, and in the Roaring River area.<br>Travel is allowed up to 0.5 mile from trails and routes to reach campsites. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from maintained trails open to camping with stock would be allowed for private stock parties in four areas of the parks: on the Hockett Plateau (except for Tar Gap), on the Monarch Divide (except for Kennedy Canyon), in the Roaring River drainage (except for Elizabeth and Colby passes), and along the western side of the Kern River watershed south from the Chagoopa Plateau (except for Lower Big Arroyo and Willow Meadow Cutoff).<br>In other areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp, and up to 100 yards from day-use trails. | Off-trail:<br>Travel more than 0.5 mile from trails open to camping with stock would be prohibited.<br>In areas open to camping with stock, travel would be allowed up to 0.5 mile from trails and routes in areas where they are allowed to camp. Stock would be allowed to travel up to 100 yards from day-use trails. |
| **Element 8: Stock Use**<br>Grazing<br>*See table 17 on page 114 for more specific information* | Grazing is generally allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock, along designated unmaintained routes, or in off-trail travel areas).<br>Grazing is not allowed in those areas open only to travel. | Grazing would generally be allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock or in off-trail travel areas).<br>Grazing would not be allowed in those areas open only to travel. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would generally be prohibited in areas open to off-trail travel with the following exceptions: Ansel Lake, Chagoopa Treehouse Meadow, Crytes Lakes, Laurel Creek Basin, Long Meadow (Ferguson Creek), Sugarloaf Creek Confluence, and West Fork Ferguson Creek.<br>Grazing would not be allowed in those areas open only to travel. | No administrative, private, or commercial grazing would be allowed.<br>Visitors and park staff traveling with stock would be required to carry feed for their animals and confine them on durable non-vegetated surfaces in camp. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would not be allowed in those areas open only to travel. |
| **Element 8: Stock Use**<br>Stock Use Structures | There are 52 existing hitch rails and 54 existing drift fences, pasture fences, and gates in the parks' wilderness managed under the SUMMP. | 23 hitch rails would be removed and 29 hitch rails would be retained.<br>12 fences/gates would be removed and 42 would be retained. | 14 hitch rails would be removed and 38 would be retained.<br>5 fences/gates would be removed, 49 would be retained, and 1 new fence with a gate would be constructed. | All hitch rails not associated with administrative facilities would be removed.<br>All drift fences and gates would be removed. Groups traveling with stock would be required to hold their stock while camping (e.g., set up high lines) on durable, non-vegetated surfaces. | 28 hitch rails would be removed and 24 would be retained.<br>A total of 18 fences and gates would be removed, 36 fences/gates would be retained, and 1 gate would be added. |
| **Element 9: Administrative Structures**<br>Ranger Stations | Ranger Stations: 15<br>Patrol Cabins: 3 | Ranger Stations:<br>Retained: 14<br>Removed: 1<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 | Ranger Stations:<br>Retained: 15<br>Removed: 0<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 | Ranger Stations:<br>Retained: 8<br>Removed: 7<br>Patrol Cabins:<br>Retained: 1<br>Removed: 2 | Ranger Stations:<br>Retained: 11<br>Removed: 4<br>Patrol Cabins:<br>Retained: 3<br>Removed: 0 |

**Table 45: Summary of Alternatives by Element (continued)**

[Note: See table 52 on page 279 for Element 10: Frontcountry Facilities to Support Wilderness Access and Use]

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Element 9: Administrative Structures**<br>Administrative Pastures | Stock pastures associated with ranger stations are located at Hockett Meadow, Kern, Redwood Meadow, and Roaring River. Facilities such as hitching rails are associated with structures at Hockett Meadow, Quinn, and Redwood Meadow. | Existing administrative pastures and associated structures would be retained in their current location (Hockett Meadow, Kern, Redwood Meadow, and Roaring River). | Same as alternative 2. | Existing administrative pastures and associated facilities would be removed (Hockett Meadow, Kern, Redwood Meadow, and Roaring River). | The existing administrative pasture (and fence) at Redwood Meadow would be removed. The Hockett Meadow and Kern pastures would be reduced in size. The administrative pasture at Roaring River would be retained. |
| **Element 9: Administrative Structures**<br>Crew Camps | There would continue to be 15 established and long-term trail crew camps within Kings Canyon National Park and 10 established and long-term trail crew camps within Sequoia National Park.<br>Other project crew camps (for administration of wilderness) would continue to be established as needed on case-by-case basis. | Existing trail crew camps would be retained, but the number of installations would be reduced to 1 at each camp.<br>Other project crew camps would be established as needed on case-by-case basis. | The number of trail crew camps in Kings Canyon National Park would be increased to 20. The number of trail crew camps in Sequoia National Park would be increased to 15.<br>Other project crew camps (for administration of wilderness) would be established as needed on case-by-case basis. | Trail crews would conduct trail maintenance through use of mobile operations; there would be no long-term established camps.<br>Short-term project crew camps (for administration of wilderness) would be established as needed on case-by-case basis. | Same as alternative 4. |
| **Element 9: Administrative Structures**<br>Other Administrative Facilities | The Redwood Canyon Cabin and associated infrastructure is operated under a Memorandum of Understanding with a non-governmental organization for the purposes of research. | Use of the Redwood Canyon Cabin would be authorized by permit for activities appropriate for the administration of wilderness. The footprint of the facility would be reduced and the external installations (e.g., privy, equipment storage boxes, woodshed) would be removed. | The Redwood Canyon Cabin would be retained as research support with reduced affiliated infrastructure. Use would include park staff, cooperators, research organizations, and universities (non-park staff would be required to obtain a permit).<br>The supporting infrastructure (e.g., water system, tables, etc.) would be removed, and the area rehabilitated. | Use of the Redwood Canyon Cabin by researchers would be terminated within 1 year of WSP approval. The cabin and all associated installations would be removed over a two-year period after WSP approval. Future research activities in Redwood Canyon could continue, but without the use of the cabin or associated permanent infrastructure. | Use of the Redwood Canyon Cabin by researchers would be terminated within two years of WSP approval. The cabin and all associated installations would be removed within three years of WSP approval. Future research activities in Redwood Canyon could continue but without the use of a permanent structure. |
| **Element 10: Frontcountry Facilities**<br>*Refer to table 52 on page 279 for details.* | | | | | |
| **Element 11: Commercial Services in Wilderness**<br>*See appendix B* | Commercial service levels and types would continue to be managed to provide high-quality visitor experiences while protecting wilderness resources. | Commercial services would be allowed but would be restricted in specific popular areas and areas with other limiting factors (e.g., Mount Whitney Management Area) | There would be increased opportunities for provision of commercial services (types and use levels of services). | Overall the types, levels, and areas in which commercial services are allowed would be notably reduced compared to alternative 1. | Overall the types, levels, and areas in which commercial services are allowed would be reduced commensurate with reduced use. |
| **Element 11: Commercial Services in Wilderness**<br>Bearpaw Meadow High Sierra Camp | The Bearpaw Meadow High Sierra Camp would continue to be operated by a concessioner of the parks. | Commercial services would be provided at the Bearpaw Meadow High Sierra Camp as in alternative 1. | The Bearpaw Meadow High Sierra Camp would be retained and would continue to be operated by a concessioner. Some expansion (season of use and/or size of facilities) would be considered provided it can be accomplished within the existing footprint and would not cause additional adverse impacts on resources. | The Bearpaw Meadow High Sierra Camp, including any historic elements, would be removed and the area rehabilitated. | The Bearpaw Meadow High Sierra Camp would be reduced in size and its season of operation would be shortened. |
| **Element 11: Commercial Services in Wilderness**<br>Pear Lake Ski Hut | The Pear Lake Ski Hut would continue to be operated during winter months as a ski hut (lodging facility) by a cooperating association under a cooperative agreement. | Commercial services would be provided at the Pear Lake Ski Hut as in alternative 1. | Use of the Pear Lake Ski Hut would continue through a cooperating association or as a concession-operated facility. | Use of Pear Lake Ski Hut would be discontinued. | Use of Pear Lake Ski Hut would be discontinued. |

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## COMPARISON OF ALTERNATIVES BY SELECTED KEY ELEMENTS

The following tables provide a detailed comparison of selected key elements of the alternatives, including Element 1: Visitor-use levels — Permits and Quotas; Element 2: Trails (specifically trail length by class and use); Element 6: Party Size; and Element 11: Frontcountry Facilities to Support Wilderness Access and Use.

### Element 1: Visitor-use Levels

**Table 46: Trailhead Quotas by Alternative**

| Trailhead Name | Use Level* | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|
| Lewis & Hotel Creeks | L | 25 | 25 | 27 | 15 | 10 |
| Copper Creek | H | 20 | 20 | 22 | 20 | 14 |
| Woods Creek/Paradise | H | 25 | 25 | 27 | 25 | 18 |
| Bubbs Creek | H | 25 | 25 | 27 | 25 | 18 |
| Summit Meadow (Don Cecil) | L | No camping | 8 | 10 | No camping | 4 |
| Don Cecil (Cedar Grove) | L | No camping | 8 | 10 | No camping | 4 |
| Redwood Canyon | H | 15 | 15 | 17 | 15 | 11 |
| Sugarloaf | H | 25 | 25 | 27 | 25 | 18 |
| Belle Canyon | L | 25 | 25 | 27 | 15 | 10 |
| J.O. Pass | L | 15 | 15 | 17 | 12 | 10 |
| Twin Lakes | H | 30 | 30 | 32 | 30 | 21 |
| Lakes Trail (destination quota – per lake – Emerald and Pear) | H | 25 | 25 | 27 | 25 | 18 |
| Wolverton/Alta | H | 25 | 25 | 27 | 25 | 18 |
| Bearpaw Meadow High Sierra Camp (18 pillow limit) | H | No quota | 18 | 18 | Camp closed | 13 |
| HST | H | 30 | 30 | 32 | 30 | 21 |
| North Fork Kaweah | L | No quota | 15 | 17 | 12 | 10 |
| Colony Mill Rd. (E) | L | No quota | 8 | 10 | 8 | 4 |
| Colony Mill Rd. (W) | L | No quota | 8 | 10 | 8 | 4 |
| Middle Fork Kaweah | L | 25 | 25 | 27 | 15 | 10 |
| Paradise Ridge | L | 15 | 15 | 17 | 12 | 10 |
| Atwell | L | 25 | 25 | 27 | 15 | 10 |
| Timber Gap | H | 25 | 25 | 27 | 25 | 18 |
| Sawtooth/Glacier | H | 20 | 20 | 22 | 20 | 14 |
| Tar Gap | L | 25 | 25 | 27 | 15 | 10 |
| Mosquito | L | 25 | 25 | 27 | 15 | 10 |

**Table 46: Trailhead Quotas by Alternative (continued)**

| Trailhead Name | Use Level* | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|
| Eagle | H | 20 | 20 | 22 | 20 | 14 |
| White Chief | L | 25 | 25 | 27 | 15 | 10 |
| Franklin | H | 30 | 30 | 32 | 30 | 21 |
| Franklin-Farewell | L | No quota | 15 | 17 | 12 | 10 |
| Ladybug | L | 15 | 15 | 17 | 12 | 10 |
| Garfield | L | 15 | 15 | 17 | 12 | 10 |

*Use Levels are defined as H (high) or L (low: places with 10 or fewer people [overnight permits] on average during busy season).

## Element 2: Trails

**Table 47a: Summary Miles of Trails by Class and Stock Use Regulations under Alternative 1**

| Stock Access Allowed | Unmaintained | Maintained | Total |
|---|---|---|---|
| Open to camping | 60.8 | 520.8 | 581.7 |
| Open to camping by special permit | 1.4 | 0.5 | 1.9 |
| Open to camping by walking parties with burros or llamas; travel only for parties with horses or mules | 3.3 | 11.5 | 14.7 |
| Open to travel only | 11.1 | 104.3 | 115.3 |
| Closed to stock travel | | 15.7 | 15.7 |

**Table 47b: Miles of Trails by Class and Stock Use Regulations under Alternative 2**

| Stock Access Allowed | Class 1 | Class 2 | Class 3 | Total |
|---|---|---|---|---|
| Open to camping | 74.8 | 232.4 | 219.2 | 530.3 |
| Open to camping by walking parties with burros or llamas; travel only for parties with horses or mules | | 0.9 | 2.8 | 3.7 |
| Open to travel only | 13.0 | 43.2 | 63.6 | 118.4 |
| Closed to stock travel | 18.9 | 12.5 | 9.2 | 40.7 |

**Table 47c: Miles of Trails by Class and Stock Use Regulations under Alternative 3**

| Stock Access Allowed | Class 1 | Class 2 | Class 3 | Total |
|---|---|---|---|---|
| Open to camping | 18.0 | 132.3 | 411.7 | 562.0 |
| Open to camping by special permit | 2.6 | | | 2.6 |
| Open to travel only | 12.6 | 11.8 | 82.0 | 106.4 |
| Closed to stock travel | 24.2 | | 18.7 | 42.8 |

**Table 47d: Miles of Trails by Class and Stock Use Regulations under Alternative 4**

| Stock Access Allowed | Class 1 | Class 2 | Class 3 | Total |
|---|---|---|---|---|
| Open to camping | 2.6 | 183.1 | 190.9 | 376.6 |
| Open to camping by private and administrative; travel only commercial | | 0.5 | 15.6 | 16.1 |
| Open to camping by private and administrative; closed commercial | 45.4 | 2.6 | 7.8 | 55.9 |
| Closed to commercial; travel only private and administrative | 6.6 | 6.2 | 4.4 | 17.1 |
| Open to travel only | 0.2 | 22.3 | 38.8 | 61.3 |
| Closed to stock travel | 60.4 | 41.7 | 14.1 | 116.1 |

**Table 47e: Miles of Trails by Class and Stock Use Regulations under Alternative 5**

| Stock Access Allowed | Class 1 | Class 2 | Class 3 | Total |
|---|---|---|---|---|
| Open to camping | 56.5 | 198.8 | 298.2 | 553.6 |
| Open to camping by walking parties with burros or llamas; travel only for parties with horses or mules | | 0.9 | | 0.9 |
| Open to travel only | 11.9 | 24.4 | 73.7 | 110.0 |
| Closed to stock travel | 15.5 | 3.2 | 18.6 | 37.2 |

The following table includes a listing of the wilderness trail segments in the parks, showing the trail class and design use for each segment. For alternative 1, the trail class listed reflects the trail development level as it existed on the ground as of 2013. The “Trail Name” is a unique name given to each trail segment, and is not necessarily the most commonly used name for that segment. For instance, “Rae Lakes” is part of the PCT, the JMT, and the Rae Lakes Loop, and is also often called Glen Pass. The segment names were chosen to avoid double-naming. To clarify what a given name refers to, beginning and end points are referenced. The table is organized by major river drainage, then alphabetically by trail name.

In table 47f, the classification for each trail segment is included, as is the type of use allowed. “Stock” refers to trails open to all uses, including stock. “Hiking” refers to trails where only hiking is allowed (no stock). “Mixed” means that portions of the trail may be open to all uses, but portions are open for hiking only. Note that the table use does not fully describe use restrictions on the trail. For example, a hiking trail may also be day use only, or a stock trail may be burros and llamas only.

**Table 47f: Trail Classification and Design Use for All Alternatives**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| **EAST FORK KAWEAH WATERSHED** | | | | | | | | |
| Aspen Flat | 0.40 | Crystal Creek | Aspen Flat | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Atwell-Hockett | 9.74 | Atwell Campground | Hockett Meadow | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Cahoon Rock | 2.58 | Hockett Meadow Junction | Cahoon Rock | 1,2 Stock | 1,2 Stock | 2,3 Stock | 1,2 Stock | 1,2 Stock |
| Eagle Lake | 1.41 | Eagle-Mosquito Junction | Eagle Lake | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Eagle-Mosquito Lakes | 0.93 | White Chief Jct | Eagle-Mosquito Junction | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Evelyn Lake | 1.05 | Cahoon Rock Jct | Evelyn Lake | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Farewell Gap | 2.65 | Franklin Pass Junction | Farewell Gap | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Farewell/Franklin Lakes | 2.65 | Aspen Flat Junction | Franklin Pass Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Franklin Pass - Franklin Lakes | 4.78 | Franklin Pass Junction | Franklin Pass | 3 Hiking | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Hockett-Sand Meadow | 0.85 | Hockett Mdw | Sand Meadow Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Mineral King Valley | 0.41 | Disney Prkg-road end trailhead | Aspen Flat Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Monarch Lakes | 3.33 | Timber Gap Jct | Lower Monarch Lake | 3 Stock | 2 Hiking | 3 Hiking | 2 Hiking | 3 Hiking |
| Mosquito Lakes | 1.58 | Eagle-Mosquito Junction | Mosquito Lakes | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Paradise Ridge | 3.31 | Atwell Mill CG Trailhead | Top of Paradise Ridge | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Sawtooth Pass West | 1.51 | Monarch Lakes | Sawtooth Pass | Informal | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Tar Gap | 6.95 | Trailhead Cold Springs CG | Atwell Hockett trail | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 3 Stock |
| Timber Gap | 1.02 | Sawtooth Prkg Trailhead | Timber Gap | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| White Chief | 2.41 | Disney Prkg-road end trailhead | White Chief | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| **KERN WATERSHED** | | | | | | | | |
| Big Five-Little Five Lakes | 4.38 | Lost Canyon | Little Five Lakes | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Bighorn Plateau | 4.14 | Tyndall Creek | Wallace Creek | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Blackrock Pass - Little Five Lakes | 1.58 | Little Five Lakes | Blackrock Pass | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Chagoopa Plateau | 11.00 | Big Arroyo Patrol Cabin | Upper Funston Mdw | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Cottonwood Pass | 5.00 | Rock Creek Junction | Park Boundary | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Coyote Lake | 2.22 | Coyote Pass/Coyote Lakes Junction | Park Boundary | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Coyote Pass | 5.31 | Kern Station | Coyote Pass | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Crabtree - Rock Creek | 3.30 | Lower Crabtree Mdw | Rock Creek | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Crabtree Lakes | 1.78 | Lower Crabtree Mdw | Crabtree Lakes | 2 Stock | 1 Stock | 2 Stock | Abandon | 2 Stock |
| Crabtree Sand Flats | 0.80 | Crabtree Sand Flats | Crabtree Ranger Station Jct | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Forester Pass South | 5.02 | Forester Pass | Tyndall Creek | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Forgotten Creek | 3.46 | Siberian Pass Creek | Funston Lake | Unmaint | Abandon | Abandon | Abandon | Abandon |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Franklin Pass - Upper Rattlesnake | 2.44 | Forester Lake Junction | Franklin Pass | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Funston Lake | 5.10 | Siberian Pass | Funston Lake | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |
| John Dean Cutoff | 2.54 | Upper Kern | Tyndall Ranger Station | Unmaint | 1 Stock | 1 Stock | Abandon | 1 Stock |
| Kern Canyon | 9.37 | Upper Funston | Junction Meadow (Kern) | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kern Kaweah | 7.82 | Junction Meadow (Kern) | Colby Pass | 2 Stock | 2 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Lake South America | 5.34 | Tyndall Cutoff | Upper Kern Canyon | 1 Stock | 1 Stock | 2 Stock | Abandon | 2 Stock |
| Little Five - Big Arroyo | 2.64 | Little Five Lakes | Big Arroyo Patrol Cabin | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Lost Canyon | 5.12 | Soda Creek | Columbine Lake | 2 Stock | 2 Stock | 3 Stock | 1-2 Mixed | 2-3 Stock |
| Lower Big Arroyo | 6.14 | Big Arroyo Patrol Cabin and HST jct | Soda Creek/Willow Meadow Junction | 1 Stock | Abandon | Abandon | Abandon | Abandon |
| Lower Crabtree | 0.67 | Crabtree Sand Flats | Lower Crabtree Meadow | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Lower Kern | 8.52 | South Boundary of Kern Station | HST at Upper Funston Meadow | 3 Stock | 3 Stock | 3 Stock | 2 Stock | 3 Stock |
| Lower Kern Bridge | 0.26 | Lower Kern RS | Kern Bridge | 3 Stock | 3 Stock | 3 Stock | 2 Stock | 3 Stock |
| Lower Rattlesnake | 7.77 | Jct of Kern Trail | Forester Lake Junction | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Lower to Upper Crabtree Meadows | 1.09 | Crabtree Ranger Station | Lower Crabtree Mdw | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Lower Whitney Creek Use | 0.75 | Lower Crabtree Mdw | Lower Whitney Creek | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Milestone Basin | 0.50 | Upper Kern Jct | Milestone Basin | 2 Stock | Abandon | 1 Stock | Abandon | Abandon |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Miter Basin | 2.30 | Upper Rock Creek | 11,300' Elevation | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |
| Moraine Lake | 3.68 | Sky Parlor Meadow | Upper Chagoopa Plateau | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Mount Langley | 1.45 | Army Pass Junction | Summit Mount Langley | Informal | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |
| Mount Whitney | 7.05 | Crabtree Station | Mt Whitney Summit | 3 Mixed | 3 Mixed | 3 Mixed | 3 Mixed | 3 Mixed |
| New Army Pass | 2.64 | Upper Rock Creek | New Army Pass | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Rattlesnake - Soda Creek | 2.92 | Forester Lake Junction | Soda Creek | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Rock Creek | 3.54 | Rock Creek | Cottonwood Pass Jct | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Rock Creek Lake | 3.12 | Cottonwood Pass Jct | Soldier Lake | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Sandy Meadow | 3.34 | Wallace Ck | Crabtree Sand Flats | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Sawtooth Pass East | 1.04 | Columbine Lake | Sawtooth Pass | Informal | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |
| Shepherd Pass | 3.38 | JMT-PCT Tyndell Ck | Shepherd Pass | 2 Stock | 2 Stock | 3 Stock | 1 Hiking | 2 Stock |
| Shotgun Pass | 1.81 | Shotgun/Upper Rattlesnake Jct | Shotgun Pass | 1 Stock | 1 Stock | 2 Stock | Abandon | 1 Stock |
| Siberian Pass | 0.70 | Siberian Junction | Siberian Pass | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Siberian Pass Creek | 2.01 | Pacific Crest Trail | Funston Lake Route | Unmaint | Abandon | Abandon | Abandon | Abandon |
| Soda Creek | 4.29 | Lower Big Arroyo | Upper Soda Creek | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Soldier Lake | 0.26 | Upper Rock Creek | Soldier Lake | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Trail Crest | 0.15 | Trail Crest Trail | Park Boundary | 3 Hiking | 3 Hiking | 3 Hiking | 3 Hiking | 3 Hiking |
| Tyndall Ranger Station | 0.59 | Pacific Crest Trail | Tyndall Ranger Station | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Big Arroyo | 3.38 | Kaweah Gap | Big Arroyo Patrol Cabin | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Big Five Lakes | 1.66 | Lower Big Five Lake | Upper Big Five Lake | 2 Stock | 2 Stock | 2 Stock | Abandon | 1 Stock |
| Upper Crabtree Meadow | 0.19 | JMT-PCT Junction | Crabtree Ranger Station | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Upper Kern Canyon | 4.44 | HST Wallace Ck | Tyndall Cut-off | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Upper Kern -Tyndall Cutoff | 2.93 | Upper Kern | JMT-PCT Tyndall Ck | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Upper Milestone Basin | 2.13 | Milestone Basin Trail | Milestone Lakes | Unmaint | Abandon | 1 Stock | Abandon | Abandon |
| Upper Rock Creek | 1.73 | Soldier Lake | Junction with PCT | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Upper Soldier Lake | 2.00 | Soldier Lake | Junction with Mt Langley Trail | Abandon | 1 Hiking | 1 Hiking | Abandon | Abandon |
| Wallace Creek | 4.11 | Junction Meadow (Kern) | JMT-PCT Wallace Ck Jct | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Wallace Lakes | 2.53 | PCT Junction | Wallace Lakes | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |
| Willow Meadow Cut-off | 4.69 | Soda Creek | Rattlesnake Creek | 1 Stock | 1 Stock | 2 Stock | Abandon | 2 Stock |
| Wright Lakes | 1.90 | PCT Junction | Wright Lakes | Unmaint | 1 Stock | 1 Stock | Abandon | 1 Stock |
| **MARBLE FORK KAWEAH WATERSHED** | | | | | | | | |
| Admiration Point | 0.70 | Colony Mill Road | Admiration Point overlook | 2 Stock | 2 Hiking | 3 Stock | 1 Stock | 3 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Hump | 0.73 | Lakes Trail Jct | Heather Lake | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| JO Pass | 1.79 | Jct off Twin Lk Trail | JO Pass | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Lakes | 2.94 | Wolverton Prkg Trailhead | Pear Lake | 3 Mixed | 3 Mixed | 3 Mixed | 3 Mixed | 3 Mixed |
| Little Baldy | 0.20 | Baldy Saddle Gen Hwy | Little Baldy Dome | 2 Stock | 2 Hiking | 3 Stock | 2 Hiking | 3 Hiking |
| Marble Falls | 2.73 | Potwisha Campground | Marble Falls, Marble Fork | 2 Hiking | 2 Hiking | 3 Hiking | 2 Hiking | 2 Hiking |
| Old Colony Mill Road | 2.48 | North Fork Road | Crystal Cave Road | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Pear Lake Ranger Station | 0.34 | Pear Lake Trail | Pear Lake Ranger Station | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Pear Lake Ski | 2.50 | Wolverton Prkg Trailhead | Pear Lake | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe |
| Silliman Pass South | 2.61 | JO Pass/Twin Lakes jct | Silliman Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Sunset Rock | 0.35 | Museum area | Sunset Rock | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Tokopah Falls | 0.36 | Lodgepole CG trailhead | Tokapah Falls | 3 Stock | 3 Hiking | 3 Hiking | 3 Hiking | 3 Hiking |
| Twin Lakes | 3.51 | Trailhead Lodgepole CG | JO/Twin Lakes Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| **MIDDLE FORK KAWEAH WATERSHED** | | | | | | | | |
| Alta - Panther Gap | 1.94 | Giant Forest | Alta Meadow/Peak Jct | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Alta Meadow | 1.70 | Panther Gap Junction | Alta Meadow | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Alta Peak | 1.81 | Alta Meadow Junction | Alta Peak Summit | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Alta-High Sierra Cut-off | 1.99 | Cut-off between Alta & HST | Cut-off between Alta and HST | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Bearpaw Cut-off | 1.55 | Middle Fork Kaweah | Little Bearpaw Meadow | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Bearpaw Meadow | 0.34 | HST | Redwood/Bearpaw Trail | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Blackrock Pass - Pinto Lake | 7.76 | Timber Gap Jct | Blackrock Pass | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Bobcat Point | 0.20 | High Sierra Trail | Sugar Pine Trail | 3 Hiking | 3 Hiking | 3 Hiking | 3 Hiking | 3 Hiking |
| Cliff Creek | 3.25 | Redwood Mdw | Blackrock Pass Junction | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Crescent Mdw-Bearpaw | 10.40 | Crescent Meadow Trailhead | Bearpaw | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Elizabeth Pass South | 3.72 | Over the Hill Junction | Elizabeth Pass | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Granite Creek | 3.30 | Redwood Mdw-Bearpaw Trail | Granite Creek lake | Unmaint | Abandon | Abandon | Abandon | Abandon |
| Hamilton Lakes | 3.81 | Bearpaw | Hamilton Lakes | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kaweah Gap | 4.06 | Hamilton Lakes | Kaweah Gap | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kaweah Middle Fork Cut-off | 0.91 | Redwood Mdw-Bearpaw Trail | Middle Fork Kaweah Bridge | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Lone Pine Creek | 1.92 | Elizabeth Pass Junction | Tamarack Lake | 2 Stock | 2 Stock | 2 Stock | 2 Hiking | 2 Stock |
| Middle Fork Kaweah | 11.32 | Moro Creek | Middle Fork Bridge | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Over the Hill | 1.47 | High Sierra Trail | Elizabeth Pass South Trail | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 2 Stock |
| Paradise Creek | 2.02 | Buckeye Flat CG | 2 miles up from Middle Fork | 2 Stock | 2 Hiking | 2 Stock | 2 Hiking | 2 Hiking |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Paradise Ridge-Redwood Mdw | 5.94 | Redwood Mdw | Paradise Gap | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Potwisha-Hospital Rock | 1.52 | Potwisha Dump station | Hospital Rock Picnic Area | 3 Stock | 2 Hiking | 3 Hiking | 2 Hiking | 2 Hiking |
| Redwood Mdw Cut-off | 0.89 | Middle Fork Kaweah | Redwood Mdw | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Redwood Mdw-Bearpaw | 4.64 | Bearpaw | Redwood Mdw | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2-3 Stock |
| Timber Gap Cliff Creek | 2.91 | Cliff Creek | Timber Gap | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Twenty-Seven Switchback Cut-off | 0.91 | High Sierra Trail | Over the Hill Trail | 2 Stock | 2 Stock | 2 Stock | 2 Hiking | 2 Stock |
| Wolverton Cutoff | 1.04 | Alta Trail | High Sierra Trail | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| **MIDDLE FORK KINGS WATERSHED** | | | | | | | | |
| Blue Canyon | 6.19 | Kettle Ridge Entrance | Blue Canyon Meadow | 1 Stock | 1 Stock | 2 Stock | Abandon | 1 Stock |
| Cartridge Pass | 10.43 | Middle Fork Kings River | Muro Blanco Trail | Unmaint | Abandon | Abandon | Abandon | Abandon |
| Cataract Creek | 1.54 | PCT Near Deer Meadow | Amphitheater Lakes | Unmaint | Abandon | Abandon | Abandon | Abandon |
| Dusy Basin | 3.49 | Lip of Dusy Basin | Bishop Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Dusy Switchbacks | 2.77 | Dusy Switchbacks/PCT Junction | Lip of Dusy Basin | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Granite Pass North | 5.21 | Northern State Lakes Loop Junction | Granite Pass | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Horseshoe Lakes | 0.95 | Spur Trail | Horseshoe Lakes | 1 Stock | 1 Stock | 2 Stock | Abandon | 2 Stock |
| Kennedy Canyon | 8.12 | Outlet of Volcanic Lakes Crossing | Kennedy Pass | 1 Stock | 1 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Lower LeConte Canyon | 3.48 | Palisade Creek Crossing | Dusy Switchbacks/PCT Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Lower Middle Fork Kings | 10.82 | Crown Creek Crossing | Simpson Junction | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 1 Stock |
| Palisade Creek | 6.11 | Palisade Creek Crossing | Outlet of Palisade Lakes | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Palisade Lakes | 3.69 | Outlet of Palisade Lakes | Mather Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| State Lakes Loop | 4.23 | North State Lakes Junction | South State Lakes Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Tehipite Switchbacks | 4.59 | Gnat Meadow Entrance | Crown Creek Crossing | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 1 Stock |
| The Bitch | 5.93 | Simpson Meadow Junction | Northern State Lakes Loop Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Upper Blue Canyon | 1.00 | Blue Canyon Meadow | Blue Canyon Lakes | Unmaint | 1 Stock | 1 Stock | Abandon | 1 Stock |
| Upper LeConte Canyon | 7.34 | Dusy Switchbacks/PCT Junction | Muir Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Middle Fork Kings | 8.09 | Simpson Junction | Palisade Creek Junction | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Volcanic Lakes | 1.90 | Granite Pass North Trail | Outlet of Volcanic Lakes Crossing | 2 Stock | 1 Stock | 2 Stock | 1 Stock | 2 Stock |
| **NORTH FORK KAWEAH WATERSHED** | | | | | | | | |
| Big Baldy | 2.06 | Big Baldy Trailhead | Top of Big Baldy | 3 Stock | 3 Stock | 3 Stock | 3 Hiking | 3 Stock |
| Big Baldy Ski | 2.06 | Big Baldy Trailhead | Top of Big Baldy | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe | 2 Snowshoe |
| Buena Vista | 0.86 | Buena Vista Trailhead | Top of Buena Vista Peak | 3 Stock | 3 Stock | 3 Stock | 3 Hiking | 3 Stock |
| Dorst/Lost Grove | 2.06 | Muir Grove Trail/Lost Grove Trail Junction | Lost Grove | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |
| Hidden Springs | 13.87 | North Fork Kaweah Trailhead | Hidden Spring | 1-2 Stock | 1 Stock | 2 Stock | 1 Stock | 1 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Little Baldy | 1.35 | Baldy Saddle Gen Hwy | Little Baldy Dome | 2 Stock | 2 Hiking | 3 Stock | 2 Hiking | 2 Hiking |
| Muir Grove | 2.53 | Dorst CG Trailhead | Muir Grove | 3 Stock | 2 Hiking | 3 Stock | 2 Hiking | 3 Hiking |
| Old Colony Mill Road | 7.28 | North Fork Road | Crystal Cave Road | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| Redwood Canyon | 2.14 | Redwood Saddle Trailhead | Hart Tree Junction on Redwood Creek | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Redwood Canyon Big Springs | 3.62 | Redwood Canyon/Hart Tree Junction | Big Springs | 2 Stock | 2 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Redwood Canyon Hart Tree | 4.76 | Upper Hart Junction | Lower Hart Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Redwood Canyon Sugar Bowl | 4.42 | Redwood Saddle Trailhead | Sugarbowl Junction along ridge | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| **SAN JOAQUIN WATERSHED** | | | | | | | | |
| Evolution Basin | 6.44 | Lamarck Col/PCT Junction | Muir Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Evolution Valley | 7.43 | Goddard Canyon Junction | Lamarck Col Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Goddard Canyon | 5.08 | Goddard Canyon Junction | Hell for Sure/Martha Lake Junction | 2 Stock | 2 Stock | 3 Stock | 1 Mixed | 2 Stock |
| Hell for Sure Pass | 3.70 | Hell for Sure/Martha Lake Junction | Hell for Sure Pass | 1 Stock | 1 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Lake 11,106 | 1.56 | McClure Meadow | Lake 11106 | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |
| Lamarck Col | 3.29 | Lamarck Col/PCT Junction | Lamarck Col | Informal | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |
| Lower Goddard Canyon | 3.54 | Piute Creek Entrance | Goddard Canyon Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Martha Lake | 2.8 | Hell for Sure/Martha Lake Junction | Martha Lake | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| McGee Canyon | 2.71 | PCT above McClure Meadow | Lower McGee Lakes | Unmaint | Abandon | Abandon | Abandon | Abandon |
| **SODA SPRINGS CREEK WATERSHED** | | | | | | | | |
| Farewell Gap | 0.42 | Quinn Mdw | North Boundary | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| South Fork Meadows | 1.08 | Sand Mdw-Hockett Lakes Jct | Windy Gap Jct | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Windy Gap | 1.99 | Blossom Lk Jct | Quinn Mdw (Rander Station) | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Windy Ridge | 0.86 | Tuohy Gap | Blossom Lake Jct | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| **SOUTH FORK KAWEAH WATERSHED** | | | | | | | | |
| Blossom Lake | 2.71 | Hunter Creek Junction | Blossom Lk | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Cyclone Meadow | 1.73 | Windy Ridge/Cyclone Meadow Jct | Windy Ridge | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Hockett Lakes | 0.72 | South Fork Crossing | Hockett Lakes Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Hockett Lakes Cutoff | 1.00 | Hockett Lakes Junction | South Fork Meadows | 2 Stock | Abandon | 3 Stock | Abandon | 2 Stock |
| Hockett-Sand Meadow | 0.29 | Hockett Mdw | Sand Meadow Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Hockett-South Fork Crossing Cutoff | 0.98 | Sand Meadow Junction | Hockett Lakes Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Hockett-South Fork Meadow | 0.89 | Sand Meadow Junction | South Fork Meadows | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Ladybug | 1.73 | South Fork Campground Trailhead | Whiskey Log Junction | 2 Stock | 2 Stock | 3 Stock | 2 Hiking | 3 Stock |
| South Fork Kaweah | 9.73 | South Fork Campground Trailhead | South Fork Kaweah Crossing | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| South Fork Meadows | 0.19 | South Fork Meadows | South Fork Kaweah Trail | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Touhy | 1.94 | South Fork Crossing | South Boundary | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Tuohy Cutoff | 1.92 | South Fork Mdw | Tuohy Gap Jct | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Wet Meadow | 0.68 | Quinn Mdw | Boundary at Wet Mdw | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Whiskey Log | 1.26 | Ladybug Trail | Cedar Creek | 2 Stock | 2 Stock | 2 Stock | 2 Hiking | 2 Stock |
| Windy Gap | 2.17 | Hunter Creek Junction | Quinn Meadow (RS) | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Windy Ridge | 4.64 | Tuohy Gap | Blossom Lake-Windy Ridge Junction | 2 Stock | Abandon | 3 Stock | Abandon | 3 Stock |
| **SOUTH FORK KINGS WATERSHED** | | | | | | | | |
| Avalanche Pass - Sphinx | 5.00 | Sphinx Junction | Avalanche Pass | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 2 Stock |
| Avalanche Pass Roaring River | 5.80 | Avalanche Pass/Cloud Canyon Junction | Avalanche Pass | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 2 Stock |
| Baxter Pass | 4.57 | Baxter Pass/PCT | Baxter Pass | 1 Stock | 1 Hiking | 1 Hiking | 1 Hiking | 1 Hiking |
| Bell Canyon - Comanche Cutoff | 1.53 | Seville Lake Junction | Comanche Junction | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Bell Canyon Entrance | 1.46 | Bell Canyon Entrance | Seville Lake Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Bench Lake | 2.00 | Bench Lake/PCT Junction | Bench Lake | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 2 Stock |
| Beville Lake | 0.07 | Silliman Pass/Beville Lake Trail Junction | Beville Lake | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Bubbs Creek | 6.20 | Sphinx Junction | Junction Meadow (East Lake Jct) | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Bubbs Creek Switchbacks | 1.42 | Bailey Bridge Junction (north side) | Sphinx Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Bullfrog Lake | 2.29 | Bullfrog/PCT Junction | Kearsarge Lakes/Bullfrog Junction | 3 Hiking | 3 Stock | 3 Hiking | 3 Hiking | 3 Stock |
| Cedar Grove Overlook | 0.46 | Cedar Grove Overlook/Hotel Creek Junction | Cedar Grove Overlook | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Cedar Grove Sand Flats | 1.73 | Roads End | Bailey Bridge Jct | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Charlotte Lake | 1.64 | Charlotte Lake/PCT Junction | Charlotte Creek Stock Camps | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Cloud Canyon | 6.17 | Roaring River Ranger Station | Creek Crossing @ Grand Palace | 3 Stock | 3 Stock | 3 Stock | 2 Stock | 3 Stock |
| Colby Pass North | 4.05 | Creek Crossing @ Grand Palace | Colby Pass | 2 Stock | 2 Stock | 2 Stock | 2 Hiking | 2 Stock |
| Deadman Canyon | 5.81 | Roaring River Ranger Station | Creek between Lower and Upper Ranger | 3 Stock | 3 Stock | 3 Stock | 2 Stock | 3 Stock |
| Don Cecil | 3.50 | Cedar Grove Bike Path | Summit Mdw | 3 Stock | 2 Stock | 3 Stock | 2 Stock | 3 Stock |
| East Lake | 2.75 | Junction Meadow | East Lake Drift Fence | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Elizabeth Pass North | 3.62 | Creek between Upper and Lower Ranger | Elizabeth Pass | 2 Stock | 2 Stock | 2 Stock | 2 Hiking | 2 Stock |
| Frypan Entrance | 0.40 | Park Boundary @ Wildman Meadow | Kennedy Pass Trail | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Glen Pass South | 1.90 | Kearsarge Pass/PCT Junction | Glen Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Granite Basin | 3.18 | Lip of Granite Basin (benchmark) | Granite Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Granite Lake | 0.52 | Granite Basin Trail | Granite Lake | 1 Stock | 1 Stock | 1 Stock | 1 Stock | 1 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Grouse Lake | 0.63 | Copper Creek Trail | Grouse Lake | Unmaint | 1 Stock | 1 Stock | 1 Stock | 1 Stock |
| Grizzly Lake | 0.36 | Park Boundary | Kennedy Pass Trail | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Hotel-Creek | 2.56 | Hotel Creek Trailhead | Hotel/Lewis Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Junction Meadow Switchbacks - Bubbs | 2.27 | Junction Meadow on Bubbs | Vidette Meadow Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kanawyers Gap | 3.30 | Kanawyers Gap | Comanche Junction | 2 Stock | 2 Stock | 3 Stock | Abandon | 2 Stock |
| Kearsarge Lakes | 0.57 | Bullfrog Lake/Kearsarge Lakes Junction | Kearsarge Lakes | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kearsarge Pass | 2.87 | Kearsarge Pass/PCT Junction | Kearsarge Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Kennedy Pass South | 3.75 | Frypan Meadow | Kennedy Pass | 2 Stock | 2 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Lake Reflection | 1.09 | East Lake Drift Fence | Lake Reflection | Abandon | 1 Stock | 1 Stock | Abandon | Abandon |
| Lost Lake | 0.70 | Lost Lake Junction | Lost Lake | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Lower Copper Creek Switchbacks | 3.69 | Roads End Cedar Grove | Lower Tent Mdw crossing | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Lower Lewis Creek | 0.91 | Lewis Creek Trailhead | Hotel/Lewis Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Lower Sixty Lake Basin | 1.65 | First Lake in Sixty Lake Basin | Lower Sixty Lake Basin | 1 Hiking | 1 Hiking | 1 Hiking | Abandon | 1 Hiking |
| Mist Falls | 3.16 | Bailey Bridge Jct | Lower Paradise Camping | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Paradise Valley | 3.30 | Lower Paradise Valley Camping | South Fork Bridge @ Upper Paradise | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Pinchot Pass North | 3.83 | South Fork Kings Crossing | Pinchot Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Pinchot Pass South | 7.38 | Woods Creek Crossing | Pinchot Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Rae Lakes | 4.93 | Dollar Lake Outlet | Glen Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Ranger Lake | 0.14 | Silliman Pass/Ranger Lake Junction | Ranger Lake | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Sawmill Pass | 3.22 | Sawmill Pass/PCT Junction | Sawmill Pass | 1 Stock | 1 Stock | 2 Stock | 1 Hiking | 2 Stock |
| Seville Lake | 1.14 | Seville Junction | Seville Lake | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Seville Lake Boy Scout | 1.27 | Bell Canyon Entrance | Seville Lake | Informal | - | 1 Hiking | - | - |
| Silliman Pass North | 4.90 | Seville Junction | Sillman Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| South Side Cedar Grove Sand Flats | 1.88 | Bailey Bridge Jct | Red Bridge @ Roads End | 3 Stock | 3 Stock | 3 Hiking | 3 Hiking | 3 Hiking |
| Sphinx Lakes | 2.08 | Screwball Meadow | Sphinx Lakes | Unmaint | Abandon | 1 Hiking | Abandon | Abandon |
| Sugarloaf Entrance | 2.22 | Sugarloaf Entrance | Comanche Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Sugarloaf Valley | 7.45 | Comanche Junction | Roaring River Ranger Station Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Taboose Pass | 2.36 | Taboose Pass/PCT Junction | Taboose Pass | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |
| Upper Basin | 5.74 | South Fork Kings Crossing | Mather Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Bubbs Creek - Forester Pass North | 4.95 | Center Basin/PCT Junction | Forester Pass | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Copper Creek Switchbacks | 3.26 | Lower Tent Meadow crossing | Lip of Granite Basin (benchmark) | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Upper Lewis Creek | 4.06 | Hotel/Lewis Junction | Frypan Meadow | 2 Stock | 2 Stock | 2 Stock | 2 Stock | 2 Stock |

**Table 47f: Trail Classification and Design Use for All Alternatives (continued)**

| Trail Name | Miles | Beginning | End | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|---|---|---|
| Upper Sixty Lake Basin | 1.42 | Sixty Lake/PCT Junction | Outlet of first lake in Sixty Lake Basin | 2 Stock | 2 Stock | 2 Stock | 1 Stock | 2 Stock |
| Vidette Meadow | 3.05 | Vidette Meadow Junction | Center Basin/PCT Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Vidette Switchbacks | 1.74 | Vidette Meadow Junction | Kearsarge Pass/PCT Junction | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Woods Creek | 5.10 | South Fork Kings Bridge | Woods Creek Crossing | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| Woods Creek Crossing - Dollar Lake | 3.96 | Woods Creek Crossing | Dollar Lake Outlet | 3 Stock | 3 Stock | 3 Stock | 3 Stock | 3 Stock |
| **TULE WATERSHED** | | | | | | | | |
| Summit Lake | 0.39 | Windy Ridge | Summit Lake | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Touhy | 1.05 | South Fork Crossing | South Boundary | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |
| Windy Ridge | 1.45 | Tuohy Gap | Blossom Lk Jct | 2 Stock | 2 Stock | 3 Stock | 2 Stock | 2 Stock |

Unmaint – "Designated Unmaintained Route"
Informal - Trail created by use, never maintained
Abandoned - Trail that once was maintained, but maintenance has been discontinued
Where more than one Trail Class or Design Use is shown, the trail segment has mixed class or design use.

### Element 6: Party Size

**Table 48: Party Size Maximum for Hikers and Boaters**

| Type of Trip | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| On-trail<br>(day use) | 25 | 25; consider future more restrictive party size for day-use in specific areas (e.g., Mist Falls, Watchtower, Monarch Lakes). | 25 | 25; consider more restrictive party size for day-use in specific areas. | 20; consider more restrictive party size for day-use in specific highest use areas (Lakes Trails, Mist Falls, Monarch Lake, and potentially other areas). |
| On-trail (overnight use) | 15 | 15* | 15* | 12 | 10 |
| Off-trail (overnight and day-use) | 15 | 12; except in areas with specific lower limits (see below). | 15* | 8 | 8 |
| Area-specific | Temporary off-trail party-size limits of 8 people would be adopted permanently at Darwin Canyon/Lamarck Col (includes Class 1 trail area); Dusy Basin, Mount Whitney/Mount Langley (includes Class 1 trail area), Sixty Lake Basin, and Sphinx Lakes. | Existing temporary off-trail party-size limits of 8 people would be adopted permanently at Darwin Canyon/Lamarck Col (includes Class 1 trail area); Dusy Basin, Mount Whitney/Mount Langley (includes Class 1 trail area), Sixty Lake Basin, and Sphinx Lakes. | Existing temporary party-size limits of 8 people would be removed.<br><br>A party-size limit of 4 would be implemented for camping at North Dome. | Existing temporary party-size limits would be removed (maximum party size of 8 in specific locations), and replaced with a wilderness-wide off-trail party size of 8. | Existing temporary party-size limits would be removed (maximum party size of 8 in specific locations), and replaced with a wilderness-wide off-trail party size of 8. |
| Redwood Canyon | Redwood Canyon: 10 people per party | There would be a 10-person maximum party size for Redwood Canyon. | Same as alternative 2. | There would be an 8-person maximum party size for Redwood Canyon. | There would be a 6-person maximum party size for Redwood Canyon. |

*consistent with neighboring USFS

**Table 49: Party Size Limits for Stock Parties**

| Type of Stock Trip | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| On-trail<br>(day-use or day-rides) | Day rides, spot and dunnage –<br>25 people; 20 stock; combined maximum of 45. | Day Rides –<br>20 people; 20 stock; combined maximum 40. | Day Rides –<br>25 people; 25 stock; combined maximum 50. | Day Rides –<br>15 people; 15 stock; combined maximum 30. | Day Rides –<br>13 people; 13 stock; combined maximum 26. |
| On-trail (camping) | 15 people; 20 stock; combined maximum of 35<br>(with some lower exceptions per BMP/SUMMP) | 15 people; 20 stock; combined maximum 28. | 15 people, 25 stock; combined maximum 40. | 12 people; 15 stock; combined maximum 20. | 10 people; 13 stock; combined maximum 18. |
| Off-trail<br>(all use)<br>in areas specifically designated for off-trail stock use | 15 people; 20 stock; combined maximum of 35.<br>(with some lower exceptions per BMP/SUMMP) | 12 people; 12 stock; combined maximum 14. | 15 people; 25 stock; combined maximum 40. | 8 people; 7 stock; combined maximum 11. | No off-trail stock |
| Area-specific Stock Party Size Limits | Temporary limits would continue in five specific areas where there is a maximum party size of 8 (people, stock, or combination):<br>Darwin Canyon, Dusy Basin, Mount Whitney/ Mount Langley, Sixty Lake, and Sphinx Lakes | Upper Goddard Canyon/Martha Lake would have a party-size limit consistent with the off-trail party size (12 people, 12 stock, combined maximum of 14).<br>Sixty Lake Basin would be open to travel 1.8 miles from the junction of the JMT to the Sixty Lake Basin Trail, and would be closed to stock use beyond this point.<br>There would be a combined party-size maximum of 8 (people and stock) for day rides above Penned Up Meadow on the Class 1 trail into Miter Basin. | None other than those listed below. | None other than those listed below. | Existing temporary party-size limits would be removed (maximum party size of 8 in specific locations), and stock would not be allowed off- trail. |

**Table 49: Party Size Limits for Stock Parties (continued)**

| Type of Stock Trip | Alternative 1 No-action / Status Quo | Alternative 2 Protect Wilderness Character by Implementing Site-specific Actions (NPS Preferred Alternative) | Alternative 3 Provide More Opportunities for Primitive Recreation | Alternative 4 Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5 Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Redwood Canyon | Redwood Canyon: maximum of 10 stock and maximum hiker party-size of 10 people. | A party-size limit of 10 people or 10 people with 10 stock (combined maximum of 20) would be retained for Redwood Canyon. | Same as alternative 2. | A party-size limit of 8 people or 8 people with 8 stock (combined maximum of 16) would be implemented for Redwood Canyon. | A party-size limit of 6 people or 6 people with 6 stock (combined maximum of 12) would be implemented for Redwood Canyon. |
| Milestone Basin | Milestone Basin maximum of 8 head of stock by special permit only. | Closed to stock. | Maximum of 8 head of stock in Milestone Basin by special permit only. | Closed to stock. | Closed to stock. |

### Element 8: Stock Use

**Table 50: Stock Use Comparison of Alternatives**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| On-trail Travel<br>*See tables 47a through 47f starting on page 246 for specific trail mileages.* | Currently nearly all maintained wilderness trails in the parks are open to stock (637 of 653 miles). Stock travel is also permitted on 77 miles of informal and abandoned trails.<br>(Note: Not all trails currently open to stock are maintained to stock standards) | Stock travel would be allowed on 650 of 691 miles of maintained trails. | Stock travel would be allowed on 671 of 714 miles of maintained trails. | Stock travel would be allowed on 527 of 643 miles of maintained trails. | Stock travel would be allowed on 665 of 702 miles of maintained trails. |
| On-trail – Camping with Stock | Approximately 598 miles of maintained and unmaintained trails are open to camping with stock. | Approximately 530 miles of maintained trails would be open to camping with stock. | Approximately 565 miles of maintained trails would be open to camping with stock. | Approximately 377 miles of maintained trails would be open to camping with stock by all user groups (private, commercial, and administrative) with an additional 72 miles of maintained trails open to overnight travel by private stock or administrative stock parties only (closed or day-use only for commercial stock). | Approximately 555 miles of maintained trails would be open to camping with stock. |

**Table 50: Stock Use Comparison of Alternatives (continued)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Off-trail Travel | Travel is allowed up to 0.5 mile from trails and routes to reach campsites.<br><br>Travel more than 0.5 mile from trails open to camping with stock is allowed in four areas of the parks: on the Hockett Plateau, along the western side of the Kern River watershed south from the Chagoopa Plateau, on the Monarch Divide including Hotel Creek, and in the Roaring River area. | In areas open to camping with stock, travel would be allowed up to 0.5 mile from trails.<br>Travel more than 0.5 mile from trails would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau.<br>. | In areas open to camping with stock, travel would be allowed up to 0.5 mile from trails.<br><br>Travel more than 0.5 mile from trails would be allowed in four areas of the parks: on the Monarch Divide, in the Roaring River area, on the Hockett Plateau, and along the western side of the Kern River watershed south from the Chagoopa Plateau. | In areas open to camping with stock, travel would be allowed up to 0.5 mile from trails.<br><br>Travel more than 0.5 mile from trails would be allowed for private stock parties in four areas of the parks: on the Hockett Plateau (except for Tar Gap), on the Monarch Divide (except for Kennedy Canyon), in the Roaring River drainage (except for Elizabeth and Colby passes), and along the western side of the Kern River watershed south from the Chagoopa Plateau (except for Lower Big Arroyo and Willow Meadow Cutoff). | In areas open to camping with stock, travel would be allowed up to 0.5 mile from trails.<br><br>Travel more than 0.5 mile from trails would be prohibited. |

**Table 50: Stock Use Comparison of Alternatives (continued)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Grazing: General | Grazing is generally allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock, along designated unmaintained routes, or in off-trail travel areas). Grazing is not allowed in those areas open only to stock travel. | Grazing would generally be allowed in areas open to camping with stock (within 0.5 mile of maintained trails open to camping with stock or in off-trail travel areas).<br>Grazing would not be allowed in those areas open only to stock travel. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would generally be prohibited in areas open to off-trail travel with the following exceptions: Ansel Lake, Chagoopa Treehouse Meadow, Crytes Lakes, Laurel Creek Basin, Long Meadow (Ferguson Creek), Sugarloaf Creek Confluence, West Fork Ferguson Creek. Grazing would not be allowed in those areas open only to stock travel. | No administrative, private, or commercial grazing would be allowed.<br>Visitors and park staff traveling with stock would be required to carry feed for their animals and confine them on durable non-vegetated surfaces in camp. | Grazing would generally be allowed within 0.5 mile of maintained trails open to camping with stock.<br>Grazing would not be allowed in those areas open only to stock travel. |
| Grazing: Areas with High Historic Use | The meadows closed to grazing by the 1986 SUMMP due to popular use and resource concerns would remain closed to grazing. | The meadows closed to grazing by the 1986 SUMMP due to high use and resource concerns would remain closed to grazing with one exception: Tom Sears Meadow would be reopened to grazing. | The meadows closed to grazing by the 1986 SUMMP due to high use and resource concerns would remain closed to grazing. | N/A | The meadows closed to grazing by the 1986 SUMMP due to high use and resource concerns would remain closed to grazing with one exception: Tom Sears Meadow would be reopened to grazing. |

**Table 50: Stock Use Comparison of Alternatives (continued)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Grazing:<br>Network of Ungrazed Meadows | The meadows closed to grazing by the 1986 SUMMP to provide a network of ungrazed meadows would remain closed to grazing. | The meadows closed to grazing by the 1986 SUMMP to provide a network of ungrazed meadows would remain closed to grazing.<br>7 additional meadows along the JMT and HST would be closed to grazing to expand the network of meadows closed to grazing for scientific and social value. | The meadows closed to grazing by the 1986 SUMMP to provide a network of ungrazed meadows would remain closed to grazing.<br>7 additional meadows along the JMT and HST would be closed to grazing to expand the network of meadows closed to grazing for scientific and social value. | N/A | The meadows closed to grazing by the 1986 SUMMP to provide a network of ungrazed meadows would remain closed to grazing. |
| Grazing:<br>Additional Closures | 9 additional meadows with high use and resource concerns would continue to be closed to grazing under the superintendent's authority to enact visitor-use restrictions. | 10 additional meadows with high use and resource concerns would be closed to grazing.<br>McClure Meadow would be closed to grazing until Evolution and Colby Meadows reach capacity.<br>Grazing would be open to by private parties only at 3 meadows. | 11 additional meadows with high use and resource concerns would be closed to grazing. | N/A | 12 additional meadows with high use and resource concerns would be closed to grazing. |

**Table 50: Stock Use Comparison of Alternatives (continued)**

| Topic | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Exceptions for Parties with Burros or Llamas | Grazing would be open to grazing by backpacking parties with burros or llamas but closed to grazing by parties with horses or mules in four areas of the parks. | Grazing would be open to grazing by backpacking parties with burros or llamas but closed to grazing by parties with horses or mules in 4 areas of the parks. | Grazing would be open to grazing by backpacking parties with burros or llamas but closed to grazing by parties with horses or mules in 2 areas of the parks. | NA | Grazing would be open to grazing by backpacking parties with burros or llamas but closed to grazing by parties with horses or mules in 2 areas of the parks. |
| Head and/or Night Limits | Head and/or night limits are in place for 16 areas. | Head and/or night limits would be in place for 12 areas. | Head and/or night limits would be in place for 19 areas. | NA | Head and/or night limits would be in place for 11 areas. |
| Stock Facilities<br>*See also tables 51a and 51b starting on page 272* | There are 52 existing hitch rails and 54 existing drift fences, pasture fences, and gates in the parks' wilderness managed under the SUMMP. | 23 hitch rails would be removed and 29 hitch rails would be retained.<br><br>12 fences/gates would be removed and 42 would be retained. | 14 hitch rails would be removed and 38 would be retained.<br><br>5 fences/gates would be removed, 49 would be retained, and one new fence with a gate would be constructed. | All hitch rails not associated with administrative facilities would be removed.<br><br>All drift fences and gates would be removed. Groups traveling with stock would be required to hold their stock while camping (e.g., set up high lines) on durable, non-vegetated surfaces. | 28 hitch rails would be removed, and 24 would be retained.<br><br>A total of 18 fences and gates would be removed, 36 fences/gates would be retained, and one gate would be added. |

**Table 51a: Stock Facilities – Drift Fences and Gates to be Retained, Removed, or Added under Each Alternative**

[No grazing would be allowed under alternative 4, thus all drift fences and gates associated with recreational use would be removed.]

| Name | Alternative 2 | Alternative 3 | Alternative 5 | Justification |
|---|---|---|---|---|
| **Kings Canyon National Park (listed approximately north to south)** | | | | |
| Goddard Canyon (Cony Camp) | Retain | Retain | Remove | Keeps stock from returning to trailhead. Pole across San Joaquin second bridge considered, but there have been issues with visitor safety. |
| Evolution Meadow | Retain | Retain | Remove | Keeps stock from drifting to the San Joaquin. Keeps stock at Evolution Meadow out of Goddard Canyon meadows before opening date. |
| Third Bridge (on San Joaquin) | Do not add | Do not add | Add | Adding a pole gate across the bridge would replace fence below Evolution Meadow. Keeps stock out of backpacker camps at the San Joaquin. Keeps stock out of Goddard Canyon meadows before opening date. |
| McClure Meadow | Retain | Retain | Retain | Keeps stock out of upper Evolution Creek meadows before opening date. |
| Big Pete Meadow | Retain | Retain | Retain | Keeps stock from going between Little Pete and Big Pete. Helps protect closed portion of Big Pete from overuse. |
| Dusy Creek (east of LeConte Ranger Station) | Retain | Retain | Retain | Keeps stock that came over Bishop Pass from returning to trailhead. Prevents grazing and other impacts of drifting stock in Dusy Basin. |
| Ladder Camp | Retain | Retain | Remove | Keeps stock from going up canyon. Allows for stock grazing in wet years when other meadows have late opening dates. |
| Grouse Meadow | Do not add | Add | Do not add | Adding a fence would keep stock from drifting from Ladder Camp to Grouse Meadow if it is closed to grazing under alternatives 2 and 3. |
| Stillwater Meadow | Remove | Retain | Remove | Keeps stock from going down canyon from Deer Meadow. Could be replaced by a temporary fence as needed to facilitate use. |
| Simpson Meadow (base of Granite Pass trail) | Retain | Retain | Retain | Keeps stock from returning to the Monarch Divide from Simpson Meadow. |
| Fallen Moon (between East and West Fork Dougherty Creek) | Retain | Retain | Retain | Keeps stock from crossing between East and West Forks of Dougherty Creeks. |
| Shorty's Meadow (lower) | Retain | Retain | Retain | Keeps stock in Dougherty Creek from grazing Shorty's Meadow before the opening date. Prevents stock from drifting over Granite Pass. |
| Shorty's Meadow (upper) | Remove | Remove | Remove | Keeps stock in Shorty's Meadow from going over Granite Pass. Could be replaced with a temporary fence as needed to facilitate use. |

**Table 51a: Stock Facilities – Drift Fences and Gates to be Retained, Removed, or Added under Each Alternative (continued)**

[No grazing would be allowed under alternative 4, thus all drift fences and gates associated with recreational use would be removed.]

| Name | Alternative 2 | Alternative 3 | Alternative 5 | Justification |
|---|---|---|---|---|
| **Kings Canyon National Park (listed approximately north to south) – (continued)** | | | | |
| Granite Basin Lip (between Granite and Copper creeks) | Retain | Retain | Retain | Keeps stock from returning to the trailhead from Monarch Divide. |
| Castle Domes Meadow | Retain | Retain | Retain | Keeps stock from returning to trailhead. Prevents grazing and other impacts of drifting stock in Paradise Valley. |
| Woods Creek Crossing | Retain | Retain | Retain | Keeps stock out of Castle Domes Meadow before opening date. Helps management of grazing capacity at Woods Creek Crossing and Castle Domes Meadows. |
| Baxter Creek | Retain | Retain | Retain | Prevents grazing and other impacts of drifting stock in closed meadows and camps on south side of Woods Creek Crossing. |
| White Fork | Remove | Remove | Remove | Keeps stock from returning to Woods Creek Crossing from upper Woods Creek. Nearby camps no longer used by visitors. |
| Charlotte Lake (lower meadow) | Retain | Retain | Retain | Keeps stock that came over Kearsarge Pass from returning to trailhead. Prevents grazing and other impacts of drifting stock in the closed meadows at Charlotte Lake, Bullfrog Lake, and Kearsarge Lakes. |
| Upper Bubbs (Upper Vidette Meadow) | Retain | Retain | Retain | Keeps drifting stock from grazing the closed Vidette meadows. |
| Junction Meadow - Bubbs | Retain | Retain | Retain | Keeps stock out of the wetter portion of Junction Meadow before the opening date. Keeps stock from returning to trailhead. |
| East Lake | Retain | Retain | Retain | Keeps stock from grazing the closed lakeshore areas at East Lake. |
| West Side Roaring River (upper) (0.25 miles below Roaring River Ranger Station | Retain | Retain | Retain | Prevents stock from impacting sensitive areas below fence. Keeps stock from returning to Sugarloaf. |
| West Side Roaring River (lower) (1 mile below Roaring River Ranger Station) | Remove | Remove | Remove | Redundant to the West Side Roaring River (upper) fence. Not needed. |
| Roaring River Bridge (pole gate on bridge at ranger station) | Retain | Retain | Retain | Keeps stock from drifting from Scaffold Meadow to the West Side Roaring River area. |
| JR Pasture | Retain | Retain | Retain | Important for administrative stock use. |
| Lackey Pasture | Retain | Retain | Retain | Important for administrative stock use. |
| Scaffold Meadow | Retain | Retain | Remove | Keeps stock from leaving Scaffold Meadow and returning to Sugarloaf or over Avalanche Pass. |

**Table 51a: Stock Facilities – Drift Fences and Gates to be Retained, Removed, or Added under Each Alternative (continued)**

[No grazing would be allowed under alternative 4, thus all drift fences and gates associated with recreational use would be removed.]

| Name | Alternative 2 | Alternative 3 | Alternative 5 | Justification |
|---|---|---|---|---|
| **Kings Canyon National Park (listed approximately north to south) – (continued)** | | | | |
| Grasshopper | Remove | Retain | Remove | Keeps stock from traveling up canyon from Scaffold and Grasshopper meadows. Rarely used. |
| Cement Table | Retain | Retain | Retain | Keeps stock from drifting below Cement Table Meadow. |
| Big Wet | Retain | Retain | Retain | Keeps stock from drifting below Big Wet Meadow. |
| Grand Palace Hotel | Retain | Retain | Remove | Keeps stock from drifting below Grand Palace Hotel Meadow. Rarely used by visitors, used regularly for administrative stock. |
| Austin Camp (east) (on cutoff to Cloud Canyon) | Remove | Remove | Remove | Keeps stock from traveling between Deadman and Cloud Canyons. Route no longer passable. |
| Austin Camp (west) | Retain | Retain | Retain | Keeps stock from drifting below Austin Camp Meadow. |
| Grave | Retain | Retain | Retain | Keeps stock from drifting below Grave Meadow. |
| Lower Ranger | Retain | Retain | Retain | Keeps stock from drifting below Ranger Meadow. |
| Upper Ranger | Retain | Retain | Remove | Keeps stock from drifting below Upper Ranger Meadow. Rarely used. |
| Comanche | Retain | Retain | Retain | Keeps stock from returning to trailhead. |
| **Sequoia National Park (listed approximately west to east)** | | | | |
| Redwood | Retain | Retain | Retain | Protects upper meadow from overuse. |
| Cold Springs | Remove | Retain | Remove | Keeps stock from going down canyon from Cold Springs Camp. Could be replaced by a temporary fence as needed to facilitate use. Rarely used by visitors, used regularly for administrative stock. |
| Crabtree | Retain | Retain | Retain | Keeps stock from drifting between Whitney Creek and Rock Creek. Prevents stock from returning to trailhead. |
| Rock Creek | Retain | Retain | Retain | Keeps stock from drifting up canyon to the closed Rock Creek #2 meadow. |
| High Sierra Gate (Kern Bridge camp) | Retain | Retain | Retain | Keeps stock from going up to Chagoopa Plateau from Kern Bridge Camp. |
| Upper Funston | Retain | Retain | Retain | Keeps stock from drifting between Kern Bridge Camp and Upper Funston. Helps to manages capacity at these two meadows. Prevents stock at Upper Funston from going up to Chagoopa Plateau. |

**Table 51a: Stock Facilities – Drift Fences and Gates to be Retained, Removed, or Added under Each Alternative (continued)**

[No grazing would be allowed under alternative 4, thus all drift fences and gates associated with recreational use would be removed.]

| Name | Alternative 2 | Alternative 3 | Alternative 5 | Justification |
|---|---|---|---|---|
| **Sequoia National Park (listed approximately west to east) – (continued)** | | | | |
| Rattlesnake Creek Confluence | Retain | Retain | Retain | Keeps stock from drifting from Upper Funston down the Kern canyon or up to Rattlesnake Canyon. |
| Laurel Creek | Remove | Retain | Remove | Keeps stock from drifting between 21” Camp and Lower Funston. Rarely used. |
| Lower Funston | Remove | Retain | Remove | Keeps stock from drifting between the Kern Ranger Station area from Lower Funston. Rarely used. |
| River Pasture (Rattlesnake Camp/River Pasture) | Remove | Remove | Remove | Keeps stock from crossing park boundary on the east side of the Kern River. Very rarely used. |
| Lewis Camp (north) | Retain | Retain | Retain | Keeps stock from leaving the park from meadows north of Lewis Camp. |
| Lewis Camp (south) | Retain | Retain | Retain | Important for administrative stock use. |
| Kern Ranger Station | Retain | Retain | Retain | Important for administrative stock use. |
| Rattlesnake Canyon #1 (Cow Camp) | Retain | Retain | Retain | Keeps stock from going between the Kern Canyon and Rattlesnake Canyon. |
| Rattlesnake Canyon #2 (Cow Camp) | Remove | Retain | Remove | One of two fences that keep stock from drifting between Cow Camp and Middle Rattlesnake Meadows. |
| Rattlesnake Canyon #3 (Middle Rattlesnake Meadows) | Remove | Retain | Remove | One of two fences that keep stock from drifting between Cow Camp and Middle Rattlesnake Meadows. Could be replaced by a temporary fence as needed to facilitate use and keep stock out of upper canyon before opening date. |
| Rattlesnake Canyon #4 (Middle Rattlesnake Meadows) | Retain | Retain | Retain | Keeps stock from returning to trailhead from Rattlesnake Canyon. |
| Hockett Pasture | Retain | Retain | Retain | Important for administrative stock use. |

**Table 51b: Hitch Rails to be Retained or Removed under Each Alternative**

| Location | # of Rails | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 | Justification |
|---|---|---|---|---|---|---|
| **Kings Canyon National Park** | | | | | | |
| Darwin Meadow proper, old stock camp | 1 | Remove | Remove | Remove | Remove | Low use area; alternative places / methods to tie stock are feasible. |
| Fallen Moon camp | 1 | Remove | Retain | Remove | Remove | Primarily administrative camp; alternative places/ methods to tie stock are feasible. |
| Lackey Pasture | 2 | Retain both | Retain both | Remove both | Retain 1 of 2 | Higher use area; protects local resources. |
| Roaring River Ranger Station | 3 | Retain 2 of 3 | Retain 2 of 3 | Remove all 3 | Retain 1 of 3 | Moderate use area; protects local resources. |
| Scaffold Meadow | 1 | Retain | Retain | Remove | Retain | Higher use area; protects local resources. |
| Trail crew camp 0.1 mi southeast of Roaring River Ranger Station | 1 | Remove | Remove | Remove | Remove | Administrative camp; alternative places/ methods to tie stock are feasible. |
| Grand Palace Hotel stock camp | 1 | Remove | Retain | Remove | Remove | Primarily administrative camp; moderate use area; protects local resources. |
| Stock camp above drift fence and below Cement Table Meadow | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Sugarloaf Creek confluence | 1 | Remove | Remove | Remove | Remove | Low use area; alternative places /methods to tie stock are feasible. |
| Sugarloaf Meadow stock camp | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| **Sequoia National Park** | | | | | | |
| Bearpaw Meadow Ranger Station | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Redwood Meadow | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |

**Table 51b: Hitch Rails to be Retained or Removed under Each Alternative (continued)**

| Location | # of Rails | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 | Justification |
|---|---|---|---|---|---|---|
| **Sequoia National Park – (continued)** | | | | | | |
| Redwood Meadow | 2 | Retain 1 of 2 | Retain 1 of 2 | Remove both | Retain 1 of 2 | Moderate use area; protects local resources. |
| Stock trail terminus 0.5 mi below Crabtree Lakes | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Bridge Camp; west side of Kern River across from hot spring | 1 | Retain but reduce size | Retain but reduce size | Remove | Retain but reduce size | Moderate use area; protects local resources. |
| Irene's Camp north of Kern Ranger Station | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Kern Ranger Station | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Kern Ranger Station | 1 | Retain | Retain | Remove | Retain | Moderate use area, protects local resources. |
| Lower Funston Meadow primary stock camp | 1 | Remove | Retain | Remove | Remove | Low to moderate use area; alternative places / methods to tie stock are feasible. |
| Upper Funston Meadow primary stock camp | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |
| Upper Funston Meadow secondary stock camp | 1 | Remove | Retain | Remove | Remove | Low use area; alternative places / methods to tie stock are feasible. |
| Forester Lake stock camp on east side | 1 | Remove | Remove | Remove | Remove | Low use area; alternative places / methods to tie stock are feasible. |
| Lower Lost Canyon trail crew camp | 2 | Remove both | Remove 1 of 2 | Remove both | Remove both | Low use area; alternative places / methods to tie stock are feasible. |
| Rattlesnake Creek at Cow Camp | 1 | Remove | Remove | Remove | Remove | Primarily administrative camp, alternative places / methods to tie stock. |
| Evelyn Lake stock camp | 1 | Remove | Retain | Remove | Remove | Low use, alternative places / methods to tie stock. |
| Hockett Meadow stock camp | 1 | Remove | Retain | Remove | Remove | Low to moderate use, alternative places / methods to tie stock are feasible. |

**Table 51b: Hitch Rails to be Retained or Removed under Each Alternative (continued)**

| Location | # of Rails | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 | Justification |
|---|---|---|---|---|---|---|
| **Sequoia National Park – (continued)** | | | | | | |
| Hockett Pasture | 1 | Remove | Remove | Remove | Remove | Low to moderate use area; alternative places /methods to tie stock are feasible. |
| Hockett Pasture trail crew camp | 2 | Retain 1 of 2 | Retain 1 of 2 | Remove both | Retain 1 of 2 | Primarily administrative use; low to moderate use area; protects local resources. |
| Hockett Pasture trail crew camp | 2 | Retain 1 of 2 | Retain 1 of 2 | Remove both | Remove both | Primarily administrative use; low to moderate use area; protects local resources. |
| Hockett Ranger Station | 2 | Retain | Retain | Remove | Retain | Moderate use area in administrative area to facilitate patrol actions. |
| Hockett Ranger Station | 1 | Retain | Retain | Remove | Retain | Moderate use at ranger station. |
| Junction of South Fork Kaweah and Tuohy Creek stock camp | 2 | Retain 1 of 2 | Retain 1 of 2 | Remove both | Remove both | Low to moderate use area; protects local resources (Oreonana population). |
| Lower South Fork Meadow at Hidden Camp | 2 | Retain 1 of 2 | Retain both | Remove both | Retain 1 of 2 | Low to moderate use area; protects local resources. |
| Quinn Ranger Station | 2 | Retain 1 of 2 | Retain 1 of 2 | Remove both | Retain 1 of 2 | Primarily administrative use; low to moderate use area; protects local resources. |
| Slim's Meadow | 3 | Retain 1 of 3 | Retain 2 of 3 | Remove all 3 | Retain 1 of 3 | Primarily administrative use with alternative places / methods to tie stock are feasible. |
| South Fork Meadow at Rock Camp | 2 | Retain | Retain | Remove both | Retain | Higher use area; protects local resources. |
| South Fork Pasture at Upper Camp | 1 | Retain | Retain | Remove | Remove | Moderate use area; protects local resources. Possibly reduce in size. |
| Summit Lake at stock camp | 1 | Retain | Retain | Remove | Retain | Moderate use area; protects local resources. |

## Element 10: Frontcountry Facilities to Support Wilderness Access and Use

**Table 52: Summary of Frontcountry Facilities by Alternative**

| Facility or Area | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| The types and levels of commercial services that may be performed in wilderness are discussed in detail in the END (appendix B). Commercial service providers would be permitted to use some frontcountry facilities, but other facilities would only be used by non-commercial or administrative entities. | | | | | |
| Kings Canyon National Park<br>Cedar Grove Pack Station | Cedar Grove Pack Station would continue to operate under concession authority based on a contractual relationship with the park. | The Cedar Grove Pack Station would continue to be operated under concession authority based on a contractual relationship with NPS with approved use types and levels. | Same as alternative 2. | The concessioners' wilderness operations originating from the Cedar Grove Pack Station would be reduced. | Same as alternative 2. |
| | No stock camping facilities are provided. | Stock camping sites would be developed at the Cedar Grove Pack Station primarily for private users. Holding pen/corral space, hitch rail(s), adequate parking and turnaround space for stock trailers, campfire pit, picnic tables, restrooms, food-storage boxes, and water would be installed. | Same as alternative 2. | Stock camping sites would be developed at the Cedar Grove Pack Station for private users. | Same as alternative 2. |

**Table 52: Summary of Frontcountry Facilities by Alternative (continued)**

| Facility or Area | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Sequoia, Middle Fork Kaweah Trailhead (Potwisha and Buckeye Flat Campgrounds, no change). | The small dirt parking area with food-storage boxes would be maintained at the trailhead. | The NPS would provide improved parking and turnaround space for stock trailers and a hitch rail; no other stock amenities would be provided. Commercial service providers would be allowed to use this trailhead. No camping for stock or backpackers would be provided or allowed. | Same as alternative 2. | Same as alternative 2, but use by commercial service providers would not be allowed to access wilderness from this area. | Same as alternative 2. |
| Sequoia – Mineral King | Mineral King has public campgrounds at Atwell Mill and Cold Springs. There is a large dirt parking lot with signs and food-storage boxes at the Atwell-Hockett trailhead for stock users and backpackers. There are currently no amenities for camping with stock at either campground. | A portion of the Atwell Mill Campground would be adapted to accommodate stock camping in two or three sites. Facilities may include a holding pen, hitch rail(s), table, campfire pit, picnic table, and stock trailer parking. The sites would be maintained through an agreement between the NPS and a cooperating partner. Commercial service providers would be allowed to use the Atwell / Hockett trailhead. | Same as alternative 2. | No facilities would be developed to support stock use at the Atwell Mill Campground in Mineral King. | Same as alternative 4. |

**Table 52: Summary of Frontcountry Facilities by Alternative (continued)**

| Facility or Area | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| | The Mineral King administrative corrals, in east Mineral King Valley, would continue to have stock facilities including buildings, corrals, and stock-support equipment. Existing facilities would continue to be used for park administrative purposes, and occasionally by holders of CUAs and private users to stage trips. | The Mineral King administrative corrals in east Mineral King Valley would continue to be used for park administrative purposes at the existing location or at a new location in the Mineral King area.<br>There would be no concessions operations at the Mineral King Pack Station. Existing facilities at Mineral King administrative corrals in east Mineral King Valley would continue to be used for the parks' administrative purposes at the existing or at a new location. Existing stock facilities could be modified to allow for short-term public camping or staging and/or short-term camping by CUA holders. | The Mineral King Pack Station and administrative corrals would continue to be used for park administrative purposes at the existing location or at a new location in the Mineral King area.<br>If a market and financial viability study/analysis determines that a concessions contract is feasible, per the Concessions Management Act and NPS policies, the Mineral King Pack Station could be operated as a contracted concessions service in its current location or at a new location at Mineral King. | Existing facilities at Mineral King administrative corrals in east Mineral King Valley would continue to be used in their existing or in a new location for park administrative purposes. Stock facilities would be modified or constructed to allow for short-term public use (e.g., staging and/or short-term camping). No commercial services would be authorized to use this facility. | All facilities at Mineral King administrative corrals and pack station in east Mineral King Valley would be removed and the area would be restored to natural conditions. A limited area for trailhead parking and stock turnaround below the corral site would be retained. Commercial service providers would be allowed to use the Mineral King Valley trailheads. |

**Table 52: Summary of Frontcountry Facilities by Alternative (continued)**

| Facility or Area | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| North Fork Kaweah Trailhead | The small dirt parking lot at the North Fork Kaweah trailhead would continue to be maintained. A primitive campground may be added. | Improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would be allowed to use this trailhead. No camping for stock or backpackers would be provided. | Improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would be allowed to use this trailhead. A small (two-site) primitive trailhead campground (i.e., no water) for stock users and backpackers would be constructed. | At the North Fork Kaweah trailhead improved parking and turnaround space for stock trailers and additional hitch rail(s) would be provided. Commercial service providers would not be authorized to use this trailhead. | Same as alternative 2. |
| South Fork Kaweah Trailhead | The facilities include a small parking area at the trailhead and a small rustic campground (10 sites, non-potable water, vault toilets, and food-storage boxes). | The South Fork Kaweah trailhead would be slightly modified to improve parking and turnaround space for stock trailers near the trailhead, and a hitching post would be provided. Use would be primarily for private users, with limited commercial use (and managed via permit conditions) and administrative users. | The South Fork Kaweah trailhead would include improved campsite(s) for stock users in the campground and improved parking and turnaround space for stock trailers at the trailhead. The trailhead would be primarily for private users, with limited commercial (managed via CUA permit conditions) and administrative users. | The South Fork Kaweah trailhead would be modified to improve parking and turnaround space for stock trailers at the trailhead. Only private and administrative users would have access to this trailhead; commercial service providers would not be authorized to use this area. | Same as alternative 2. |

**Table 52: Summary of Frontcountry Facilities by Alternative (continued)**

| Facility or Area | Alternative 1<br>No-action/Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| Sequoia – Wolverton Area | The Wolverton area facilities, including a parking lot, trailhead, and administrative stock facilities, would continue to be maintained. There would continue to be limited short-term use by commercial-service providers under CUAs to stage resupply trips for the Bearpaw Meadow High Sierra Camp. | The facilities would continue to be used for park administrative purposes. The facilities would be available for short-term use by private parties and CUA holders, but there would be no permanent occupation of this facility by a commercial pack station for the purposes of conducting wilderness trips. | Same as alternative 2. | Stock facilities at Wolverton would remain in place at the current location, but they would be modified to allow for public use by private parties. There would be no commercial services provided at the facility through a concessions contract, but the facilities would continue to be used by private parties and for administrative purposes. | Stock facilities at Wolverton would remain in place at their current location, but they would be modified to allow for public use by private parties and for short-term use by commercial service providers. There would be no long-term commercial use of the facility by a resident pack station concession. The facilities would continue to be used for parks administrative purposes. |

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**Table 53: Summary of Impacts**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Wilderness Character**<br>Untrammeled Quality | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. | Impacts on the untrammeled quality would be of a limited intensity and duration, and wilderness would in general remain dominated by natural processes. |
| **Wilderness Character**<br>Natural Quality | The natural quality of wilderness would continue to be preserved. | The natural quality of wilderness would continue to be preserved. Overall visitor-use levels would remain similar to current use levels; on a wilderness-wide scale this alternative would have few detectable effects on the natural quality of wilderness. However, site-specific changes would result in improvement of this quality that would be detectable at a local scale. These local effects result from changes in the way that campfires, food storage, human waste, camping, and hiker and stock use, and commercial services are managed. | The natural quality of wilderness would continue to be preserved. Daily trailhead quotas would be increased; however, on a wilderness-wide scale this alternative would result in few detectable impacts on the natural quality of wilderness. Localized improvements on the natural quality could occur as a result of changes in the way that trails, campfires, food storage, human waste, camping, and hiker and stock use, and commercial services are managed. | The natural quality of wilderness would continue to be preserved. This alternative would result in few detectable effects on the natural quality of wilderness. The local improvements result from changes in food storage, human waste, and campsite management. The more substantial effects would result from the changes in campfire restrictions, elimination of grazing, and lower levels of commercial services. | The natural quality of wilderness would continue to be preserved. Under alternative 5, overall visitor-use levels would be reduced; however, on a wilderness-wide scale this alternative would have few detectable effects on the natural quality of wilderness. The local improvements would result from changes in campfire, food storage, human waste, camping, stock-use, and commercial services. |
| **Wilderness Character**<br>Undeveloped Quality | The level of development related to visitor management would remain constant. There would be no change to the undeveloped quality. | Alternative 2 would result in a decrease in privies and food-storage boxes resulting in a slight improvement to the undeveloped quality. | Alternative 3 would result in more development in wilderness and therefore would result in adverse effects on the undeveloped quality. | Alternative 4 reduces development more than any other alternative, resulting in beneficial effects on the undeveloped quality. | Alternative 5 would result in a decrease in privies and food-storage boxes resulting in a slight improvement to the undeveloped quality. |
| **Wilderness Character**<br>Opportunities for Solitude or Primitive and Unconfined Recreation | Under current conditions, the parks' wilderness provides outstanding opportunities for solitude and primitive and unconfined recreation, except at a few locations where visitor densities are relatively high and impacts on solitude occur. There would be no change to opportunities for solitude or primitive and unconfined recreation. | Alternative 2 would continue to provide outstanding opportunities for solitude and primitive and unconfined recreation in many areas, but in a few areas additional management controls would reduce the unconfined aspect, and slightly improve the solitude aspect. | Alternative 3 would result in improvements to opportunities for primitive and unconfined recreation in many areas, but in a few areas additional management controls would reduce the unconfined aspect. Alternative 3 would allow for increased overall wilderness use, reducing the opportunity for solitude, particularly in popular areas. | Alternative 4 would result in site-specific improvements in opportunities for solitude and primitive and unconfined recreation in many areas, but additional management controls would reduce the unconfined aspect. | Alternative 5 would result in improvement to opportunities for solitude and decrease opportunities for primitive and unconfined recreation throughout wilderness due to decreases in the number of visitors allowed in the wilderness. |
| **Wilderness Character**<br>Other Features of Value | This alternative does not provide for a focused assessment of trails and other historic features, thus, until such assessment is undertaken under another program or project, the historic features may not be adequately protected. There would be no changes to scientific study. | One historic feature, the Mission 66-era ranger station at Bearpaw Meadow, would be removed. There are no changes proposed for scientific activities. | One historic feature, the Mission 66-era ranger station at Bearpaw Meadow, would be removed. There are no changes proposed for scientific activities. | One historic district and three historic features (the Bearpaw Meadow High Sierra Camp, Redwood Meadow, and Tyndall Creek ranger stations, and the Simpson Meadow Patrol Cabin) would be removed. There would be no changes to scientific study. | One historic district would be reduced in size. The Mission 66-era Bearpaw Meadow Ranger Station would be removed. There would be no changes to scientific study. |

**Table 53: Summary of Impacts Table (continued)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Soils** | The effects of current visitor and administrative activities are not currently posing recognizable threats to soils. There would be no change under this alternative. | In general, this alternative seeks to maintain visitation into the parks' wilderness. Therefore, the impacts from continued visitor use would be similar to current conditions as described under alternative 1. Additional beneficial effects could result from removal of some installations, and establishment or restoration of trails. Adverse impacts could occur from installation of new privies and the establishment of campsites. Impacts would be localized and not measurably different from current conditions. | In general, this alternative would allow for increased visitation in wilderness. As a result, adverse impacts on soils may increase slightly in localized areas from an increase in visitors, stock, and development wilderness-wide. | This alternative seeks to maintain or slightly reduce visitation into the parks' wilderness. As a result, adverse impacts on soils may decrease slightly overall from reduced use. Beneficial effects would occur from a decrease in the number of stock, the elimination of grazing wilderness-wide, and the removal of installations. Adverse effects would result from the establishment of stock hold and feed areas. Beneficial and adverse effects would be localized and slight; and would not result in a measurable change on a wilderness-wide scale. | Visitor use would be reduced from current levels. Fewer visitors could result in fewer effects from visitor use overall, such as the development of social trails and new campsites. Beneficial effects would occur from a decrease in the number of stock and hikers and the removal of installations. Beneficial and adverse effects would be localized and slight; and would not result in a measurable change. |
| **Water Quality** | No changes to the management of parks' wilderness would occur. Humans and stock appear to have had little impact on water quality or on the overall health of the aquatic ecosystem when compared to environments with very little use. Some measurable impacts have occurred, especially near the most heavily visited locations; however, the impacts remain below accepted thresholds of health or ecological concern. It is likely that the prevailing environmental conditions would persist under this alternative. | Under alternative 2, visitor use would remain at about the same levels. Therefore, the impacts from continued visitor use would be similar to current conditions as described under alternative 1. The prohibition of grazing in selected meadows may result in a small, beneficial effect on water quality. | Alternative 3 provides for increased visitor use levels in certain areas. Studies indicate that visitors have some small adverse impact on water quality, and it is reasonable to assume that additional users will likely result in more impacts, but the impacts should remain small and would remain below accepted thresholds of health or ecological concern. | Alternative 4 provides for a slight decrease in visitor use levels in certain areas. A reduction in users may result in small beneficial effects, but at a scale too small to measure. This alternative would likely result in some beneficial effects on water quality in the areas which had been open to grazing. | Alternative 5 provides for a reduction of visitor use levels wilderness wide. Wilderness visitors have a small, but adverse impact on water quality. A reduction in users would likely result in small, beneficial effects, but likely at a level below any detectable limits. |
| **Vegetation**<br>Wetlands and Meadows | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts due to stock use would be expected to remain comparable to current levels.<br>Stock parties would have access to 64% of the meadow area; 51% of meadow area would be open to grazing<br>The amount of grazing would be similar to current levels.<br>Grazing capacities would be adopted in popular destinations. Grazing intensity outside of these areas would be a function of variable annual stock use patterns and productivity. | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts due to stock use would be reduced from current levels.<br>Stock parties would have access to 54% of the meadow area; 48% of meadow area would be open to grazing.<br>The amount of grazing would be similar to current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. | Impacts from human traffic would increase but remain insignificant at the landscape scale.<br>There would be a decrease in the extent but an increase in the severity of trampling, grazing, and nonnative species impacts due to stock use as higher use would be concentrated in fewer destinations.<br>Stock parties would have access to 55% of the meadow area in the parks; 37% of all meadow area would be open to grazing.<br>The amount of grazing would be greater than current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. | Impacts from human traffic would remain similar to current levels and insignificant at the landscape scale.<br>The extent and severity of impacts due to stock use would be greatly reduced.<br>Parties traveling with stock would continue to have access to 44% of the meadow area in the parks.<br>Total stock use would decrease relative to current levels.<br>Grazing would be prohibited throughout the park; therefore, grazing impacts would be eliminated. Trampling impacts would be nearly eliminated. Nonnative species impacts due to stock use would be expected to decrease, with a chance for increased impacts due to a greater amount of carried feed used. | Impacts from human traffic would decrease and remain insignificant at the landscape scale.<br>The extent and severity of trampling, grazing, and nonnative species impacts would decrease with lower overall stock use and fewer areas open to grazing.<br>Stock parties would have access to 43% of the meadow area; 37% of meadow area would be open to grazing.<br>The amount of grazing would be less than current levels.<br>The intensity of grazing in named forage areas (and therefore the extent and severity of impacts) would be limited by grazing capacities. |
| **Vegetation**<br>High-elevation Long-lived Trees | Campfires would be prohibited in 439,515 acres while being allowed in 44,212 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. | Campfires would be prohibited in 442,096 acres while being permitted in 35,857 acres of high-elevation conifer habitat that supports the four subalpine or upper montane long-lived tree species (whitebark pine, foxtail pine, limber pine, and Sierra juniper). | Campfires would be prohibited in 543,965 acres while being permitted in 13,126 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. | Campfires would be prohibited in 837,806 total acres of the parks or 100% of wilderness. It would include all areas of high-elevation conifer habitat where the four long-lived tree species occur within the parks. This would include a wide range of vegetation types distributed throughout wilderness from low to high elevations. | Campfires would be prohibited in 412,530 total acres of the parks, while being permitted in 37,144 acres of high-elevation conifer habitat that supports the four subalpine long-lived tree species. |

**Table 53: Summary of Impacts Table (continued)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
|---|---|---|---|---|---|
| **Vegetation**<br>Alpine Vegetation | Direct removal of alpine vegetation would continue to occur infrequently. Trampling of alpine vegetation along trail corridors, at popular destinations, and in alpine meadows would continue, particularly in areas of concentrated visitor use and where grazing occurs. Under current use levels and patterns, vegetation in untrailed alpine areas would remain largely undisturbed. Approximately 64% of mapped alpine vegetation areas would be closed to stock, which would serve to protect these areas from potential grazing and trampling impacts. | Impact types would be the same as described for alternative 1. If visitor use increases in off-trail areas, impacts on alpine vegetation could increase in extent and severity. Impacts would be reduced by limiting certain areas to pass through or day-use and by closing certain trails and meadows to stock access completely. Under this alternative 70% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impact types would be similar to alternative 1; however, the increased use levels and use patterns would likely increase trampling impacts on alpine vegetation, particularly in popular areas and around new food-storage boxes. Impacts along trails would continue, and if visitor use increases in off-trail areas, impacts on alpine vegetation could increase in extent and severity. Under this alternative, 69% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impacts on alpine vegetation would be similar to alternative 1, but could be reduced by limitations on visitor use, which could result in reduced use in off-trail areas. Trampling in alpine meadows by stock would largely cease due to grazing restrictions. However, the areas used for holding and feeding stock could be subject to increased trampling impacts. Under this alternative, 76% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. | Impacts on alpine vegetation would be expected to decrease relative to current conditions, as a result of overall decreased visitor use. There could continue to be trampling impacts associated with grazing where it occurs. Under this alternative, 83% of the mapped alpine vegetation areas would be closed to stock, providing increased protection from potential grazing and trampling impacts. |
| **Vegetation**<br>Plants of Conservation Concern | Direct removal and trampling of the plants of conservation concern by visitors would be expected to be infrequent under current levels and patterns of use. Although species in the meadows and uplands may suffer incidental trampling by visitors traveling through meadows or on cross-country routes, this would not be expected to result in population level impacts. Localized impacts from stock use could affect plants of conservation concern. There is no evidence that current use levels and patterns are resulting in population level impacts on these species. | Impacts on vascular plants and mosses of conservation concern would be similar to alternative 1. Restrictions and closures of certain areas to stock grazing and access would reduce the potential for impacts from trampling and grazing. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large-scale losses or declines that could lead to the listing of any of the species. | The potential for trampling of the plants of conservation concern by hikers could rise with the increased visitor use. Species in the meadows and uplands may be subject to incidental trampling by visitors traveling through meadows or on cross-country routes, although this would not be expected to result in population level impacts. Localized impacts from stock use and grazing could affect plants of conservation concern. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large-scale losses or declines that could lead to the listing of any of the species. | The potential for impacts on plants of conservation concern would be reduced due to the reduction in overall use and the elimination of grazing. | The potential for impacts on plants of conservation concern would be reduced as a result of reduced visitor use, smaller party sizes, and the elimination of cross-country travel by stock. Because grazing intensity in meadows would be managed through the implementation of site-specific grazing capacities, impacts on these species would continue to be localized and would not be expected to result in large-scale losses or declines that could lead to the listing of any of the species. |
| **Vegetation**<br>Nonnative Plants | Disturbance associated with visitor use, including off-trail travel and grazing, would remain the same, and there would be no change in the use of unprocessed hay and hay cubes. Thus there would continue to be the potential for the introduction and spread of nonnative species in popular areas of the wilderness and those frequented by stock. | The overall probability of nonnative introductions would be approximately the same as current conditions. However, beneficial effects would occur from slightly less off-trail stock travel and grazing, and the required use of processed (i.e., weed-seed free) feed. Although the probability of nonnative introductions would be less than current conditions, the spatial distribution of impacts would be similar to current conditions. | The overall probability of nonnative introductions would be approximately the same as current conditions. A slight reduction in off-trail travel and grazing, coupled with requirements for processed feed would mitigate some of the impacts from increased visitor and stock use and administrative activities. More meadows would have a lowered risk of nonnative plant introduction, as they would be closed to stock access. | The extent of disturbed land would be lowered due to reduced visitor and group sizes, and a reduction in facility maintenance. Overall, propagule pressure, the probability of nonnative introduction into wetlands, and the spatial distribution of impacts would be substantially lower than current conditions due to the elimination of grazing and a reduction in off-trail stock travel. | Similar to alternative 4, there would be beneficial effects on native plant communities due to reduced visitor use wilderness wide. |

**Table 53: Summary of Impacts Table (continued)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Wildlife**<br>Black Bear | Under alternative 1, bears would continue to have benign encounters with people throughout wilderness, which would lead to habituation, which is often a precursory behavior to food-conditioning that occurs when bears associate people with food. Incidents would continue to remain relatively rare and bear population dynamics in wilderness would be dominated by natural processes. | Because the visitor use levels would be similar to present levels, there would be little change in undesirable bear behavior under this alternative. However, the removal of nearly half of the existing food-storage boxes and establishing new campsites could increase habituation and food-conditioning, leading to adverse impacts. If proper food storage is regularly practiced, increases in human/bear conflicts as a result of this action would be expected to be minimal. | Potential increases in human/bear encounters (and thus, increased habituation and food-conditioning) would result from increased visitor use and additional established campsites. These impacts would be mitigated by adding 35 new food-storage boxes, moving existing food-storage boxes to more appropriate locations, and increasing portable food container requirements. Overall, the change in impacts from current conditions would be minimal. | Reduced visitor use could result in a reduction of bear-human encounters. Beneficial effects from reducing visitor use, however, would be outweighed by the adverse impacts of removing all food-storage boxes. There would likely be a net increase in food-conditioned bears because a percentage of visitors would likely not properly store their food. | Beneficial effects from reducing visitor use would be outweighed by the adverse impacts of removing all food-storage boxes. There would likely be a net increase in food-conditioned bears because a percentage of visitors would likely not properly store their food. |
| **Wildlife**<br>Birds | In wilderness, brown-headed cowbird abundance and parasitism would continue to be uncommon and impacts on native bird species would continue to be minimal because of the lack of development although there could be potential for localized problematic areas near ranger stations or other highly visited sites. Brown-headed cowbird abundance and parasitism rates could be relatively high near frontcountry developments (e.g., campgrounds, picnic areas, administrative and stock facilities, etc.), particularly for species restricted to lower elevations, and could limit population growth. | Additional meadow closures and decreases in stock party sizes could cause a reduction in available brown-headed cowbird habitat, limiting their impact on native bird species in wilderness. However, any increase in the use of supplemental feed products could increase habitat and food sources for the cowbird, potentially increasing opportunities for nest parasitism. Increased development in frontcountry sites may cause a slight increase in brown-headed cowbird abundance at these sites. However, the impacts on native bird species from brown-headed cowbird parasitism are not expected to increase substantially from current conditions. | Increased stock party sizes, establishment of stock campsites, and any increase in the use of supplemental feed products could increase habitat quality for brown-headed cowbirds, thus increasing the potential for parasitism of host species. Slight beneficial effects on native bird species would occur from reducing stock grazing in off-trail areas, reducing brown-headed cowbird habitat. | The closure of all meadows to grazing could contribute to reduced habitat quality for brown-headed cowbirds and could result in a decrease in parasitism to host species near these sites, relative to alternative 1. This would result in a beneficial effect on native birds. However, adverse impacts could result from use of supplemental feed carried into wilderness and the development of frontcountry sites, as described for alternative 2. | Abundance of brown-headed cowbirds would likely be reduced by the reduced stock party sizes, removal of stock campsites, and the reduced number of meadows open to grazing. However, adverse impacts could result from the use of supplemental feed carried into wilderness and the development of frontcountry sites, as described for alternative 2. |
| **Wildlife**<br>Invertebrates | Invertebrates would continue to be adversely affected by human and stock trampling, stock grazing, and stock fording of streams. The impact intensity would be scale dependent. Wilderness-wide, impacts would be undetectable; however, on a localized scale, measureable impacts would continue to occur. | Similar visitor use levels would result in impacts similar to those described under alternative 1. The closure of additional meadows to grazing would result in beneficial effects on invertebrates at these sites. These beneficial effects are anticipated to be minimal. | Increased visitor use would provide increased opportunities for invertebrates to be affected by trampling; however, the difference in impacts would not be measurable relative to alternative 1. Additional areas would be closed to grazing, providing beneficial effects on invertebrates in the newly closed meadows when compared to current conditions. These beneficial effects are anticipated to be minimal. | Reduced visitor use levels would result in a slight beneficial effect on invertebrates, but the effects would be similar to those described under alternative 1. The closure of all meadows to grazing would result in beneficial effects on invertebrates at these sites. These beneficial effects are anticipated to be minimal. | Reduced visitor use levels would result in a slight beneficial effect on invertebrates, but the effects would be similar to those described under alternative 1. The closure of additional meadows to grazing and off-trail stock travel would result in beneficial effects on invertebrates. These beneficial effects are anticipated to be minimal. |
| **Special-status Species**<br>Yosemite Toad | Visitors would continue to encounter Yosemite toads in wilderness, which could result in disturbance and/or trampling. Disturbance would not have an impact on toad populations. The small amount of potential trampling that may affect Yosemite toads under this alternative would be expected to result in no effect on their populations. Under this alternative stock use and grazing would continue to be managed to prevent unacceptable habitat degradation; therefore, while there may be adverse impacts on individual toads, the potential for population-wide effects is small. | As in alternative 1, the potential for disturbance to Yosemite toads from visitor encounters and trampling would continue to occur. However, additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | With an increase in use, there is an increased potential for visitors to disturb or trample Yosemite toads. However, additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | As in alternative 1, the potential for disturbance to Yosemite toads from visitor encounters and trampling would continue to occur, but would be reduced with reduced visitor access in toad habitat. Additional stock access restrictions and the elimination of grazing in known toad habitat would reduce the potential of trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. | With decreased use overall, the potential for disturbance to Yosemite toads from visitor encounters and trampling would be reduced from current levels. Additional stock access restrictions, and the elimination or reduction in grazing in known toad habitat would reduce the potential for trampling and habitat degradation, and would be expected to result in a beneficial effect on Yosemite toads. |

**Table 53: Summary of Impacts Table (continued)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Special-status Species**<br>Mountain Yellow-legged Frog | Visitors would continue to encounter mountain yellow-legged frogs in wilderness, which could result in disturbance and/or trampling of frogs. Disturbance would not have an impact on frog populations. Trampling could adversely impact individual frogs, but would not have an impact on frog populations. The degradation of mountain yellow-legged frog habitat could occur in high use areas or near trails, but given the few locations where frog populations inhabit areas near trails, the potential for habitat degradation has been shown to be small. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be similar as described under alternative 1. Additional stock access and grazing restrictions would protect frogs and frog habitat, and thus would be expected to result in beneficial effects. | With increased use, there is an increased potential for visitors to disturb or trample mountain yellow-legged frogs. However, additional stock access and grazing restrictions would protect frogs and frog habitat, and thus would be expected to result in beneficial effects. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be similar as described under alternative 1. Additional stock access restrictions and the elimination of grazing would protect frogs and important frog habitat, and thus would be expected to result in beneficial effects. | The potential for visitors to disturb or trample mountain yellow-legged frogs would be reduced from alternative 1 due to reduced visitor use. Additional stock access and grazing restrictions would protect frogs and important frog habitat, and thus would be expected to result in beneficial effects. |
| **Special-status Species**<br>Sierra Nevada Bighorn Sheep | Visitors would continue to encounter Sierra Nevada bighorn sheep in wilderness, which could result in disturbance. There is no evidence of adverse impacts on bighorn sheep from hikers and stock use under current use levels; therefore, these disturbances would not be of biological importance. | There could be an increased frequency of bighorn sheep/human encounters if new Class 1 trails are established in bighorn sheep habitat. However, such trails could concentrate visitor use and benefit bighorn sheep by making human activity more predictable. Reducing stock party sizes and areas open to grazing could benefit bighorn sheep in portions of their habitat. These beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | Trailhead quotas could increase on trails that intersect bighorn sheep habitat and new Class 1 trails could be established in bighorn sheep habitat; these actions could result in an increase in bighorn sheep-human interactions. It is probable that adverse impacts of increased bighorn-human interactions would continue to remain below the level of biological significance, and new Class 1 trails could concentrate use and benefit bighorn sheep by making human activity more predictable. Reducing areas open to grazing could benefit bighorn sheep in portions of their habitat. These beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | There would be beneficial effects on bighorn sheep because trailhead quotas would be reduced, stock would be allowed to travel on fewer trails, and party size would be reduced. Overall the effects would be beneficial and long-term; however, the beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. | There would be beneficial effects on bighorn sheep from decreased visitor use and closures of areas to stock, specifically off-trail areas. Overall the effects would be beneficial and long-term; however, the beneficial effects are anticipated to be minimal. There could be short-term adverse effects from project activities in bighorn sheep habitat. |
| **Cultural Resources** | Cultural resources in wilderness would continue to be protected. There would be no adverse effects on cultural resources. | Most cultural resources in wilderness would continue to be protected. The ranger station at Bearpaw Meadow would be removed, resulting in an adverse impact on an historic resource. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. | Most cultural resources in wilderness would continue to be protected. The ranger station at Bearpaw Meadow would be removed, resulting in an adverse impact on an historic resource. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. | Most cultural resources in wilderness would continue to be protected. The removal of Bearpaw Meadow High Sierra Camp, including the ranger station, and the ranger stations or patrol cabins at Redwood Meadow, Simpson Meadow, and Tyndall would result in an adverse impact on those historic resources. The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. | Most cultural resources in wilderness would continue to be protected. The removal of the ranger station at Bearpaw Meadow would result in an adverse impact on an historic resource The level of impact could be somewhat mitigated through documentation strategies developed in consultation with the CA SHPO. |

**Table 53: Summary of Impacts Table (continued)**

| Resource | Alternative 1<br>No-action / Status Quo | Alternative 2<br>Protect Wilderness Character by Implementing Site-specific Actions<br>(NPS Preferred Alternative) | Alternative 3<br>Provide More Opportunities for Primitive Recreation | Alternative 4<br>Emphasize Undeveloped Quality and Non-commercial Recreation | Alternative 5<br>Emphasize Opportunities for Solitude |
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| **Socioeconomics** | There would be little change from current conditions. At the regional level, the effects on socioeconomics related to the parks' wilderness visitation and operations would be both beneficial and adverse. | Similar to alternative 1; however, the more direct consequences of the restrictions placed in the busiest areas of wilderness (i.e., reductions in quotas for specific busy trails, limits on commercial services in the Mount Whitney Management Area, and limits on grazing), could result in lower use and the redistribution of use geographically and could adversely affect individuals or businesses. Alternative 2 allows for near current levels in use supported by commercial services, including stock-based use, providing potential economic benefits for some commercial service providers and supporting businesses. Alternative 2 would result in beneficial and adverse impacts over the long term. | Increased visitor use may result in long-term increases in the economic and social benefits from increased spending by wilderness visitors at local stores, motels and hotels, and other tourism-related businesses and attractions. Alternative 3 allows for increased use supported by commercial services, including stock-based use, providing potential economic benefits for some commercial services providers and supporting businesses. Alternative 3 would result in beneficial effects over the long term. | This alternative may result in limited economic and social effects. The decreased use could reduce income and increase costs for outfitters, adversely affecting the long-term economic viability of some outfitters, potentially to the point that one or more outfitters may choose to forego pursuit of Commercial Use Authorizations. Such a decision could have indirect effects in one or more gateway communities. Individual outfitters and guides could be affected differentially by changes associated with this alternative. | Same as alternative 4. |
| **Visitor Use and Experience** | Alternative 1 provides a positive visitor experience for the majority of visitors throughout the parks' wilderness. In the most popular areas, visitor experience could be adversely or beneficially impacted due to the condition of the wilderness (campsite conditions), the existence of facilities, and the availability of commercial services to support visitor use. | Alternative 2 would continue to provide a positive experience for the majority of visitors throughout the parks' wilderness, with localized improvements occurring in selected areas. However, some visitors may not be able to travel in the area of their choice due to new restrictions on access and stock use, campfire limits, and reductions in commercial services in the Mount Whitney Management Area. Visitor-related facilities would be reduced, resulting in both adverse and beneficial effects on the visitor experience, depending on their expectations. | Alternative 3 would continue to provide a positive experience for the majority of visitors throughout the parks' wilderness. However, increased use in the most popular areas and increased level of restrictions would result in adverse effects on the visitor experience when compared with the other alternatives. Visitor –related facilities would be increased, resulting in both adverse and beneficial effects on the visitor experience, depending on their expectations. | Under alternative 4, certain uses would be limited. Campfires would not be allowed. All food-storage boxes would be removed. Grazing would be prohibited. There would be decreased opportunities wilderness-wide for visitors to use commercial service providers. The increased restrictions and decreased visitor-related facilities would result in both adverse and beneficial effects on the visitor experience depending on their expectations. | Under alternative 5, visitor access would be limited to the lowest amount when compared with the other alternatives. There would be reduced opportunities for visitors traveling with stock due to off-trail restrictions. There would be fewer visitor-related facilities. There would be decreased opportunities wilderness-wide for visitors to use commercial service providers. Overall this alternative would result in both adverse impacts to those visitors who are unable to gain access to the wilderness, and beneficial effects on those visitors who gain access and experience wilderness. |
| **Park Operations** | There would be no change to current operations. | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. After initial changes to the wilderness-related programs, this alternative would result in impacts that are not substantially different from the no-action alternative. | There would be cost and work associated with the installation of new facilities, and long-term maintenance requirements. After initial changes to the wilderness-related programs, this alternative would result in impacts that are not substantially different from the no-action alternative. | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. There would be long-term costs associated with having to buy feed to allow the continued use of administrative stock. For other wilderness-related programs, this alternative would result in impacts that are not substantially different from the no-action alternative. | There would be cost and work associated with the removal of facilities, but a reduction in long-term expenditures with reduced maintenance requirements. Fewer visitors in wilderness would likely result in a decrease in administrative activities resulting from wilderness management. |