# Chapter 1

Purpose and Need

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

# CHAPTER 1: PURPOSE AND NEED

## 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.

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 nearly 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.

***How Visitor Use is Estimated***

*The average number of wilderness visitors to the parks for the past 10 years (2003–2102) is approximately 21,600. This accounts for an average of 86,530 visitor-use nights 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 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 7.*

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

The number of visitors plus its excellent access to highly scenic areas indicate that the park wilderness provides great public value. It also means that those values must be wisely managed to protect wilderness character for present and future generations.


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

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 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 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:

***Total Area of the Parks***
*865,964 acres*
***Total Area of the Parks Managed as Wilderness***
*837,806 acres*
*(nearly 97% of the parks)*

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

1 This figure 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.

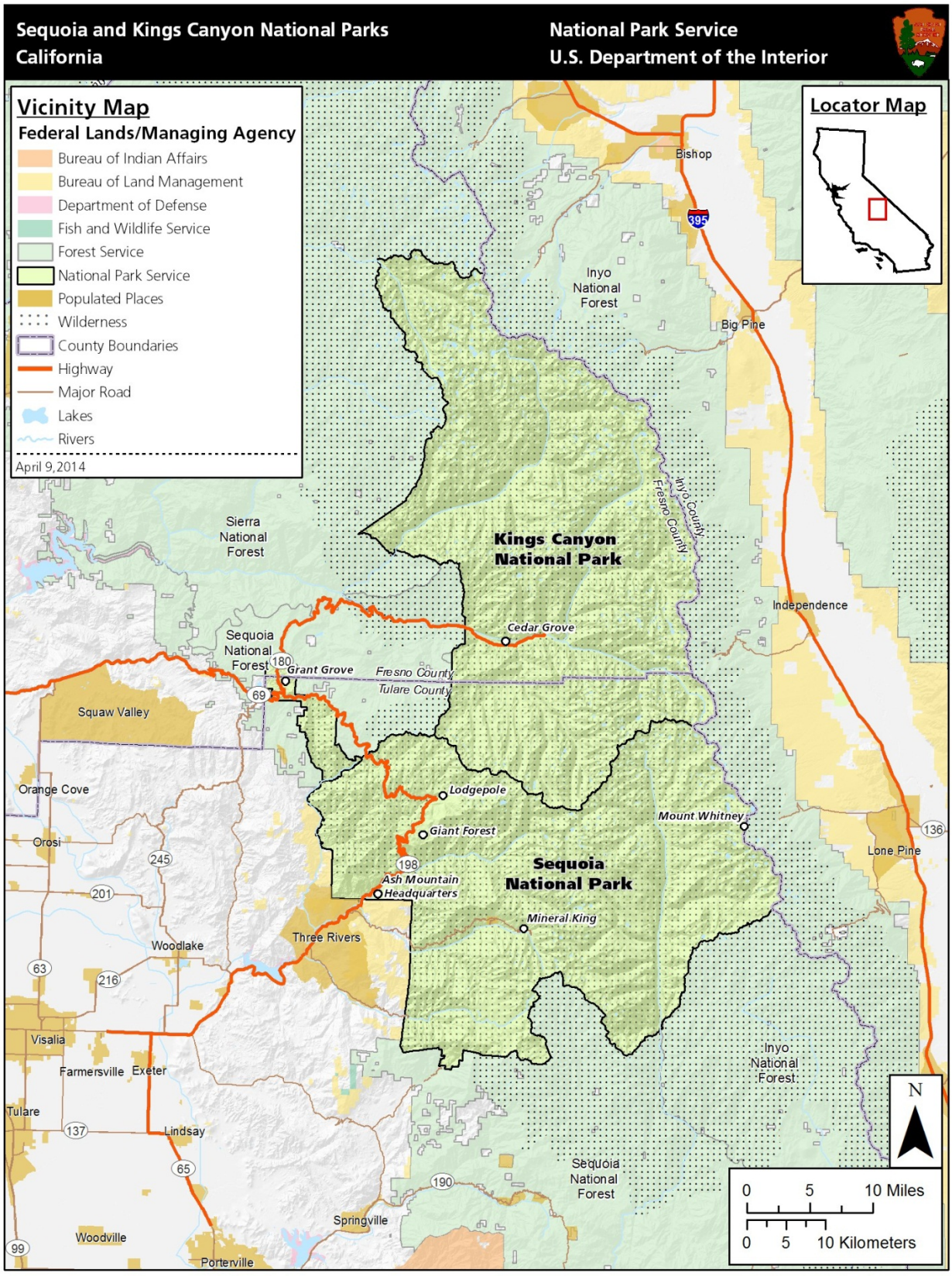



**Figure 1: Vicinity Map**

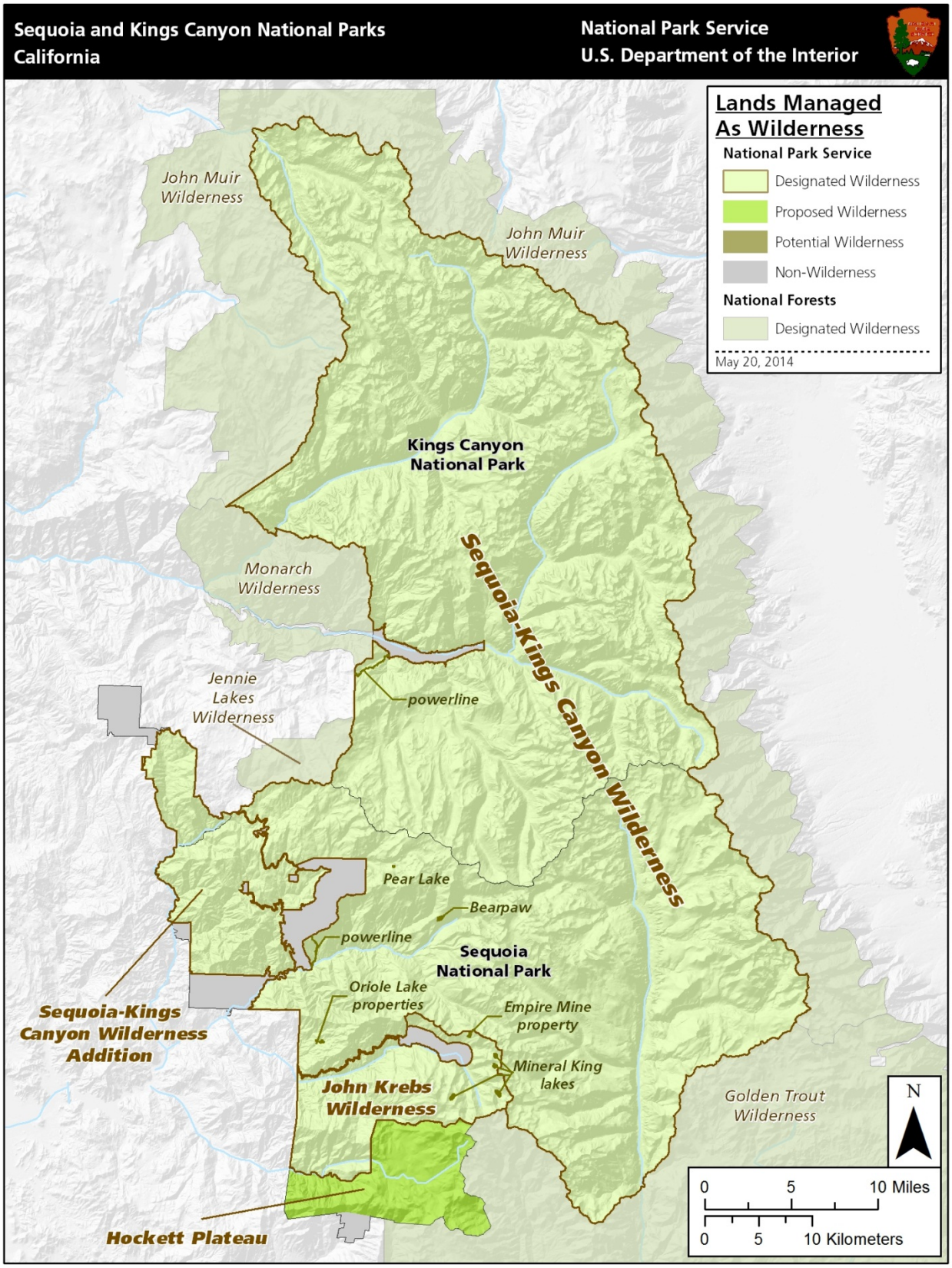



**Figure 2: Wilderness Boundaries of Sequoia and Kings Canyon National Parks**

# 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))."

To provide for use of wilderness that also leaves it unimpaired, both the park and its 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.

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* (EIS), 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 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

***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.*

***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.*

***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).*

***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.*

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 draft Environmental Impact Statement (DEIS) 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.

The Sequoia and Kings Canyon National Parks Backcountry Access Act (PL 112-128), enacted on June 15, 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/DEIS 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.

## 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.

In addition to these four qualities, there are other values identified in the enabling legislation of the park 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

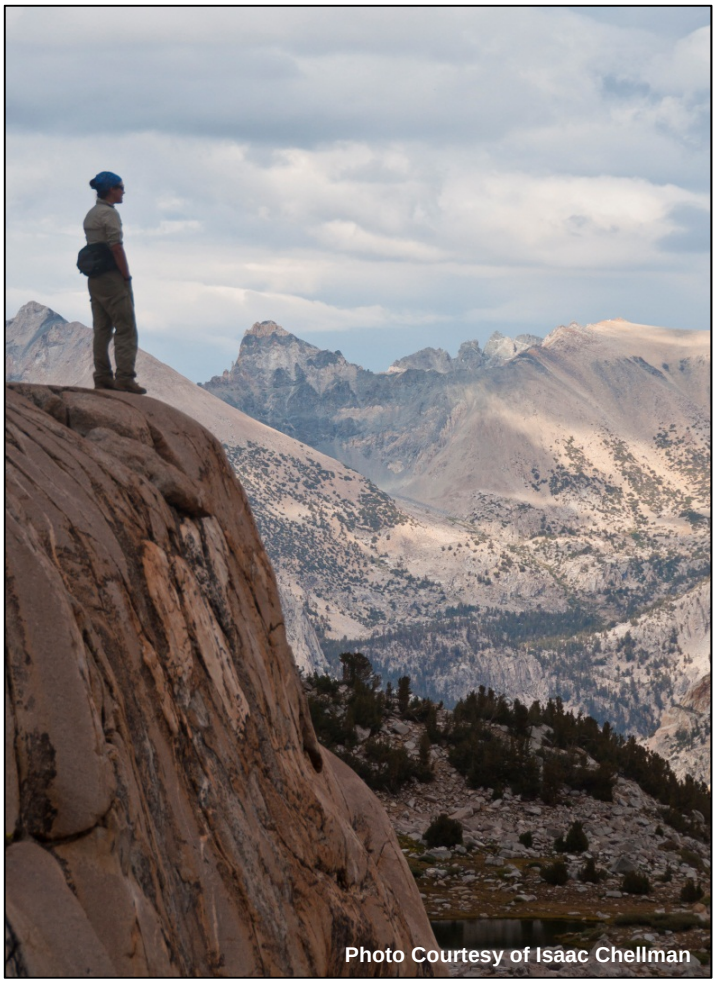
*Desired conditions* are the natural and cultural resource conditions that the NPS aspires to achieve and maintain over time, and the conditions necessary for visitors to understand, enjoy, and appreciate those resources. In the context of a wilderness stewardship plan, *desired conditions* qualitatively describe an ideal condition of wilderness character. Some desired conditions may not be fully attainable due to factors unrelated to visitor use or park 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.




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

- 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.

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 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/DEIS 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 a component of 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 appendixes 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 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/DEIS.

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.

## 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)).

***Definitions 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.*

**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/DEIS 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.

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

The private lands, non-conforming uses, and retained rights most relevant to this WSP/DEIS 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 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.

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

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; 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.

Rights-of-way for two utility-powerline corridors are authorized in potential wilderness per the California Wilderness Act (1984) (Sec. 101. (24)). The two rights-of-way are a 60-foot-wide corridor running from Moro Rock summit benchmark to near 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/DEIS.

**Aquatic/Water Resources Management Plan (1989)** — The Aquatic/Water Resources Management Plan describes the parks' 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 (ongoing)** — 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 park 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 park 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 progress)** — 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 2014 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/DEIS 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 (Clinton 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 Clinton 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 (ongoing)** — 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** — 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/DEIS, 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 early 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/DEIS 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 park purpose — 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 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.

## PARK 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 park – 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.


**Young and mature Sequoias.**

## PARK 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 park resources; rather, they describe the park's distinctiveness and help place the park within its regional, national, and international context. Defining park 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.

### PARK 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 WSP/DEIS was added to the parks' public website starting in late 2010 to inform the public of the upcoming plan. The park 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 concern, 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 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/DEIS, are described in the section "Elements or Topics Outside the Scope of the Plan."

## 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 park 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).

**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 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 plan, based on adaptation of 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** — Private and 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 stock use would continue. Private, recreational, and administrative 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 for many years. 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/DEIS 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/DEIS.

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/DEIS 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/DEIS 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 |
| 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* |

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

| Impact Topic or Issue | Reasons for Retaining Impact Topic | Relevant Laws, Regulations, and Policies |
|---|---|---|
| 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/DEIS 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 use 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* |
| 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* |

## 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 park 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 park 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 the 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 park 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 park has formed a partnership with the U.S. Environmental Protection Agency through the Climate-Friendly Parks Program. The park has 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 2008).

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/DEIS alternatives; therefore, air quality was dismissed as an impact topic.

**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. In the western United States, spring snowpacks are melting earlier, the percentage of precipitation falling as snow is declining, and the area burned in wildfires is increasing (Barnett et al. 2008, Knowles et al. 2006, Mote et

al. 2005, Stewart et al. 2005, Westerling et al. 2006). Changes specific to the southern Sierra Nevada include an increase in average annual temperature of 1°F to 2.5°F over the last 75 to 100 years (Safford et al. 2012), declining spring snowpacks below about 8,500 feet (Andrews 2012), melting glaciers (Basagic 2008), rising tree-death rates (van Mantgem and Stephenson 2007, van Mantgem et al. 2009), upward shifts in the elevation ranges of many small mammals (Moritz et al. 2008), and increases in fire frequency, size, total area burned, and severity (Safford et al. 2012). In Sequoia and Kings Canyon National Parks, the annual average temperature has warmed about 1°F from 1975 to 2010 (Das et al. 2013).

Over the next century in the Sierra Nevada, average temperature is predicted to continue increasing by 4°F to 8°F in the summer and 2°F to 4°F in the winter (Safford et al. 2012). How precipitation will change in the future is highly uncertain, with predictions spanning significant decreases, increases, or little change in the yearly average. Most models are in agreement that summers will be drier (Safford et al. 2012). Regardless of changes in precipitation, warming temperatures will increase the amount of rain relative to amount of snow, speed the onset of snowmelt, and increase the amount of water taken up by plants and then evaporated to the atmosphere. Increased wildfire activity is expected to persist and accelerate in most future scenarios, with the possibility of more frequent and more severe fires (Safford et al. 2012).

Changes in temperature, hydrology, and fire regime will have profound effects on the parks' wilderness, but the exact nature of these changes is impossible to predict. Potential changes include drying of meadows, streams, and ponds; increased flooding and soil erosion; altered incidence of forest insects and diseases; shifts in seasonality and ranges of plants and animals; altered wildlife behaviors; and die-off of species that cannot adapt to these changes, or increases in abundance of species for which new conditions are favorable. Cultural resources could be affected by shifting rates of weathering, erosion, and decomposition. Park visitation also could change, including the amount, distribution, seasonality, and type of wilderness recreation.

While accelerated climate change is a major concern for the future of the parks' wilderness, analysis of climate change is beyond the scope of this WSP. None of the management decisions addressed in the alternatives will have an effect on the magnitude or character of climate change. Furthermore, available information is not adequate to quantify the interaction of climate-change impacts on the consequences of the alternatives.

The parks are addressing the concern about future climate-change impacts in two main ways. First, the WSP is designed to be flexible 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, the parks will thoroughly analyze the potential effects of climate change and what these may mean to future management of park resources in the Resource Stewardship Strategy (in preparation). Therefore, climate change will not be analyzed in this WSP/DEIS.

**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). Park 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 park caves. 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/DEIS.

**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 park contains 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/DEIS.

*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 hiker and backpacker 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/DEIS, 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/DEIS.

*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 2008). 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/DEIS.

*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]? |
|---|---|---|
| Amphibian | | |
| American bullfrog | *Rana catesbeiana* | Yes |
| Birds | | |
| Brown-headed cowbird | *Molothrus ater* | Yes |
| 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/DEIS.

*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/DEIS.

*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/DEIS.

*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/DEIS.

*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/DEIS.

*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 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 park locations. 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 contribute to the extrinsic sounds audible. 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/DEIS 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 Rivers (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 the actions and alternatives in the WSP/DEIS 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) if 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/DEIS.

## ELEMENTS OR TOPICS OUTSIDE THE SCOPE OF THE PLAN

Many commenters brought forward issues that the WSP/DEIS 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 park 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 not allowed 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. | The Wild and Scenic Rivers Plan and decisions related to the management of designated wild and scenic rivers in the parks were included as part of the 2007 GMP. This topic will not be included in the WSP. |
| The use of the Ash Mountain pasture for administrative operations was a topic suggested for inclusion in the WSP/DEIS. | The frontcountry facilities discussed in the WSP/DEIS 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. |
| Regulating the type of food packaging that is brought into the park (e.g., foil and plastic wrappers) was brought forward as a comment. | The NPS has limited authority to restrict the types of food packaging brought into the parks. There are existing regulations in place for littering. Therefore, this subject will not be addressed in the WSP. |

**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 |
|---|---|
| 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. |
| Some visitors feel that electronics such as GPS, portable music devices, satellite phones, and cell phones bring modern civilization into wilderness and are thus inappropriate (NPS 2011a). | 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 technological devices most commonly used by wilderness visitors were cameras (39.4%), smartphones (29%), GPS devices (25.5%), smart phones or tablets (19.5%), and other cell or satellite phones (21%) (Martin and Blackwell 2013).<br><br>The visiting public may find that the use of hand-held and other electronic devices (such as personal locator beacons and satellite phones) impedes their ability to experience the solitude and self-reliance values of wilderness. The NPS is not considering any prohibitions of these small devices, but encourages visitors to go without the aid or support of modern technology to take full advantage of the wilderness experience. The Wilderness Act does not prohibit the uses of cell phones and other personal electronic devices. The NPS currently has no authority to restrict electronics in wilderness; however the NPS has regulations to manage noise. Appendix F, Wilderness Regulations and Permit Conditions, provides further information. |
| 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 (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 is in development that will address these topics. |