environmental assessment

comprehensive management plan

july 1980

SEQUOIA AND KINGS CANYON

MINERAL KING

NATIONAL PARKS / CALIFORNIA

ENVIRONMENTAL ASSESSMENT

COMPREHENSIVE MANAGEMENT PLAN

MINERAL KING

SEQUOIA-KINGS CANYON NATIONAL PARKS

United States Department of the Interior / National Park Service

CONTENTS

TABLES

MAPS

STATEMENT OF THE PROBLEM

INTRODUCTION

The area known as Mineral King was added to Sequoia National Park by passage of the National Parks and Recreation Act of 1978 (Public Law 95-625). The intent of Congress was to ensure the preservation of the outstanding natural and scenic features for present and future generations and to enhance public enjoyment of the area. One provision of that act required the National Park Service to develop and submit to Congress a comprehensive management plan for Mineral King.

The purpose of this Environmental Assessment is to compare and evaluate the environmental consequences of various alternative strategies that could be implemented to guide the management of Mineral King. As an addition to Sequoia National Park, Mineral King has been administered according to the management principles established for the park. It was not the intent of the planning effort to define a new management framework independent of Sequoia National Park but to principally address issues of appropriate types and levels of visitor activities. Consequently, the alternatives primarily reflect options for visitor use and associated facility development.

The alternatives presented were based on ideas and concerns generated by the public. They also reflect specific requirements of legislation for the area. Finally, the alternatives were developed to be consistent with National Park Service policy, the management objectives for Sequoia and Kings Canyon, and the management principles established for the two parks prior to the addition of Mineral King.

The preferred alternative was developed through an extensive public involvement program. The alternatives were offered as possible directions that could be taken by the National Park Service for the future management of Mineral King. Public reaction to the four alternatives was then analyzed and used as the basis for the recommendation detailed in this document.

INFLUENCES ON PLANNING

The following legislative intent and objectives have guided the management of Mineral King in the absence of an approved comprehensive management plan. The planning effort for Mineral King is directed towards achieving or maintaining these basic goals.

Legislative Intent

Mineral King was transferred from the administration of the U.S. Forest Service to National Park Service jurisdiction by passage of the National Parks and Recreation Act of 1978 (Public Law 95-625). This act added Mineral King to Sequoia National Park, to be administered as a district within that park. The intent of Congress was to ensure the preservation of the outstanding natural and scenic features of Mineral King for present and future generations and to enhance public enjoyment of the area.

Management Objectives

The principles of management for areas within Sequoia National Park have been extensively developed and defined as approved management objectives in the park's Statement for Management.*

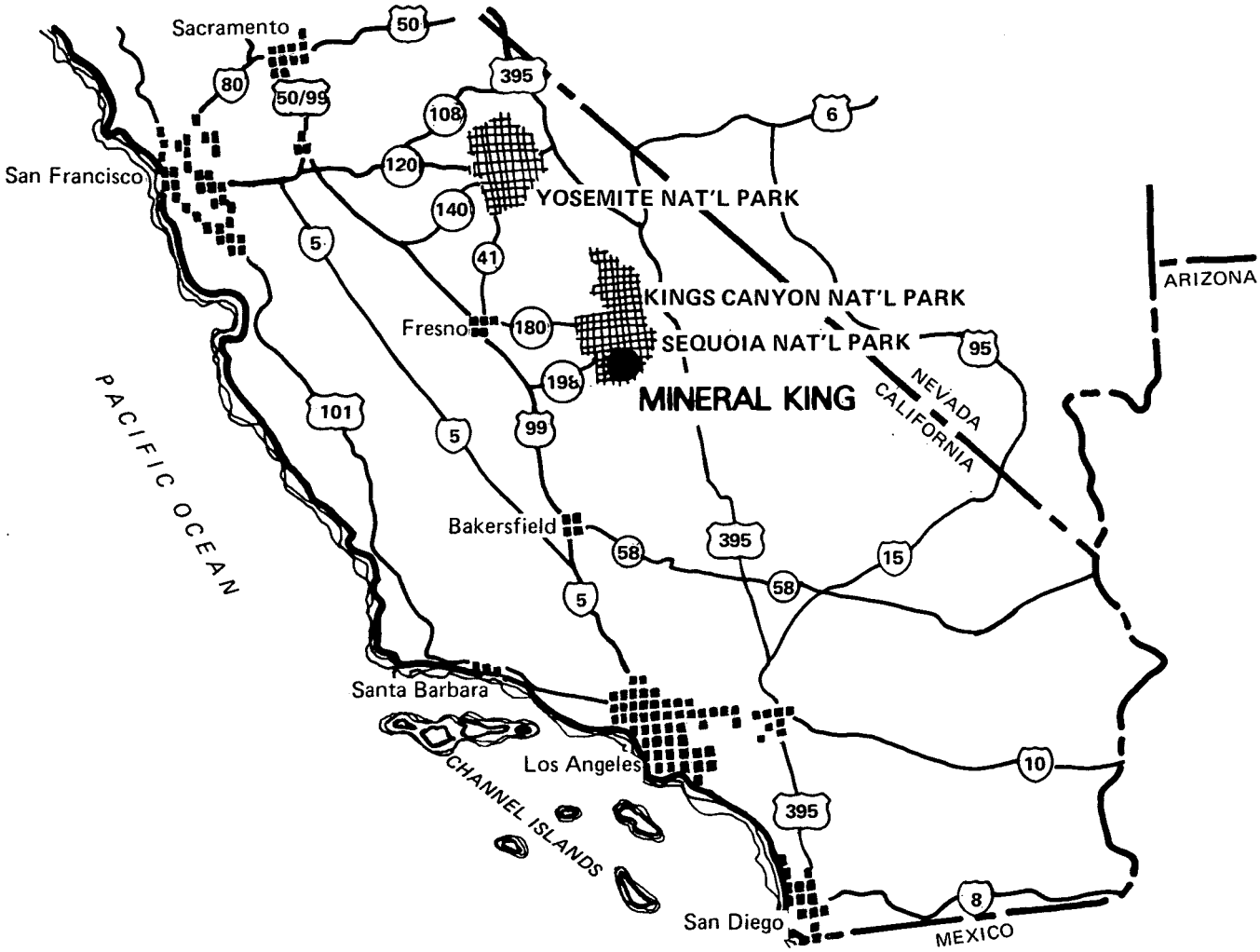
> Restore and/or maintain the natural ecosystems so that ecological processes may be perpetuated and may operate in a relatively undisturbed manner
> Provide quality opportunities for visitor understanding and enjoyment of the area's resources
>
> Eliminate all incompatible uses
>
> Cooperate with other agencies and outside interests in the development of plans and major management programs
>
> Maintain a high level of visitor and employee protection through effective programs in law enforcement, safety, and public health
>
> Limit National Park Service and concession development to that which is necessary and appropriate for the public use and enjoyment of this area, and eliminate or relocate facilities that intrude on the primary resources.

INTERRELATIONSHIP WITH OTHER PROJECTS

A master plan for Sequoia and Kings Canyon national parks was completed in 1971. Among other considerations, this plan

---

*Only selected management objectives are repeated here. For a complete list, consult the Statement for Management for Sequoia and Kings Canyon National Parks.



REGION

MINERAL KING

SEQUOIA/KINGS CANYON NATIONAL PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR /
NATIONAL PARK SERVICE

102	20019
DSC	APR 80

established a ceiling on the number of lodging units and campsites that should be provided in the two parks. The alternative proposals regarding overnight capacities in Mineral King are consistent with the limits set in the master plan. Additionally the master plan recognized the two great environments in the southern Sierra as being the sequoia forest and the alpine highcountry. The sequoia environment is adequately featured in both parks; however, the remote highcountry has been the exclusive domain of the backpacker. The addition of Mineral King has for the first time provided an easily accessible alpine environment for use by the general public.

Lands within Sequoia National Park have been studied for inclusion in the National Wilderness Preservation System. Legislation based on this evaluation is presently before Congress. Basically the wilderness recommendation surrounds Mineral King. As a consequence no actions were designated for the Mineral King backcountry that could prove detrimental to wilderness qualities.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

ENVIRONMENTAL SETTING

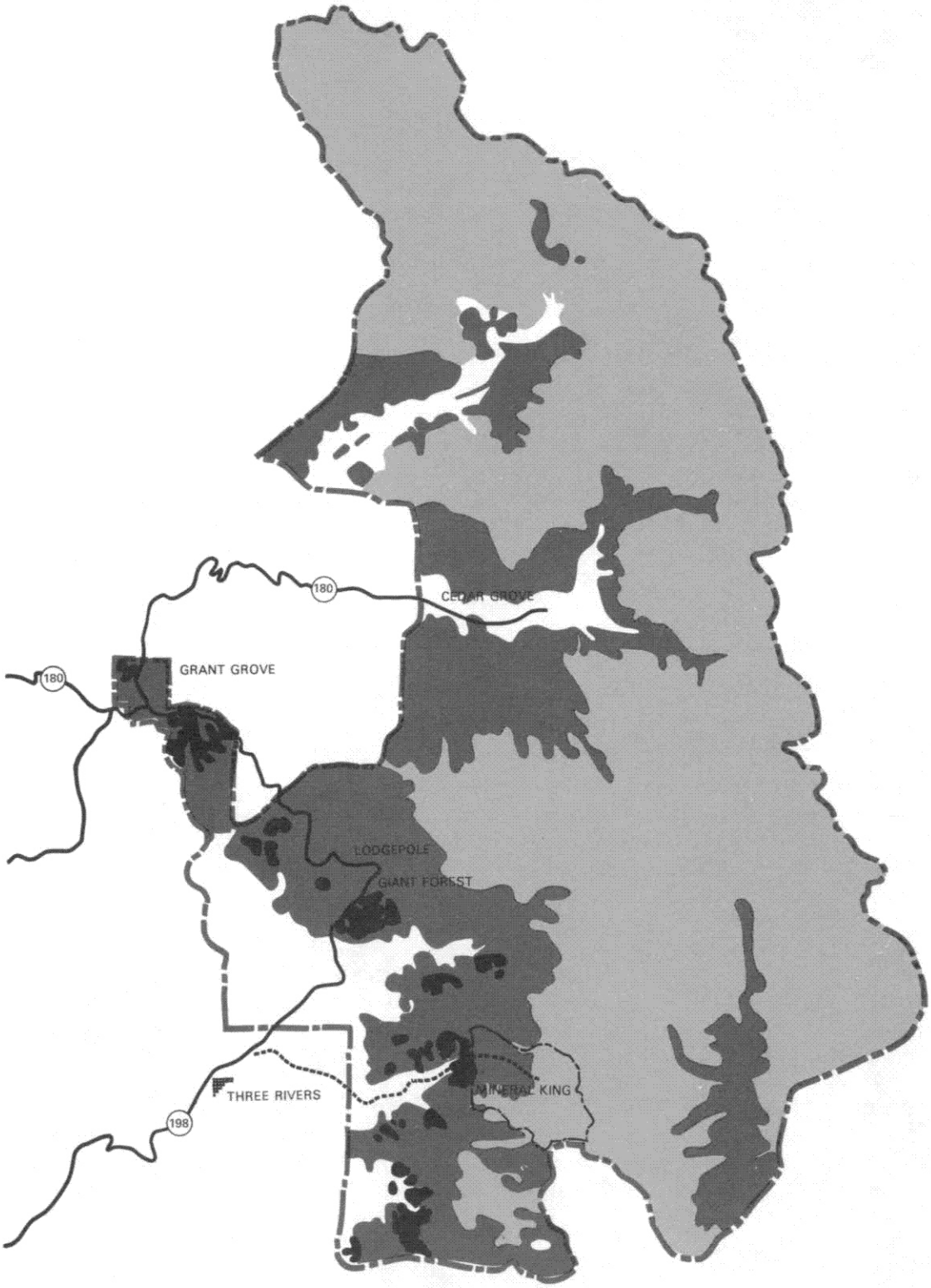
Mineral King Valley is located in Tulare County, California. It is at the headwaters of the East Fork of the Kaweah River on the west slope of the Sierra Nevada Range adjacent to the Great Central Valley of California. Elevations range from 7,800 feet on the valley floor to 12,400 feet at Florence Peak. Elevations along access road range from 1,100 feet at Hammond to 7,500 feet at Faculty Flat. This subalpine valley, approximately 16,000 acres, is typical of intermountain valleys of the Central Sierra. What makes it unique is its high scenic quality and its accessibility by automobile from the San Joaquin Valley. Because of its accessibility and its central location in surrounding federally owned lands which are administered for multiple use and recreation, Mineral King is important as a recreational retreat and "jumping off" point into the backcountry.

GEOLOGIC AND TOPOGRAPHIC FEATURES

Geologic Overview

The terrain of Mineral King is characterized by bare granitic and metamorphic rock at higher elevations, colluvial deposits from rockfalls and avalanches below, and alluvial deposits on the valley floor. It began to evolve as igneous (volcanic) and sedimentary rocks were folded and metamorphosed and later intruded by a granitic batholith. A series of four uplifts then tilted these rocks to the west as the Sierra Nevada range was formed. Later, glacial and stream erosion modified the landscape, as evidenced by the many alpine lakes formed in cirques, the moraines and glacial debris that line the valley and the access corridor, and the characteristic U-shape of the valley.

Unique to Mineral King are the metamorphic rock walls, which as a result of glacial activity have crumbled to form loose talus slopes with 30 to 60 percent grades that are highly susceptible to avalanches. These avalanches have created a lightly timbered, open vista environment. In contrast, valley walls in the rest of the Sierra tend to be granitic cliffs, and the valleys are heavily timbered. Another unique feature of Mineral King is the highest limestone cave formation in California, occurring at elevations between 10,000 and 11,000 feet. Cirque and White Chief caves comprise a network of interconnected stream channels cut through soft deposits of marble. Other minor areas of alpine karst topography, and possibly undiscovered cave networks, also exist in the valley (Personal communication, Lengasta, Chairman of the



ALPINE
CONIFER
SEQUOIA GROVE
OAK WOODLAND / CHAPARRAL

ENVIRONMENT

MINERAL KING

SEQUOIA / KINGS CANYON NATIONAL PARKS / CALIFORNIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

102 | 20022
DSC | APR 80

NORTH

Mineral King Task Force for the National Speleological Society, July 1979).

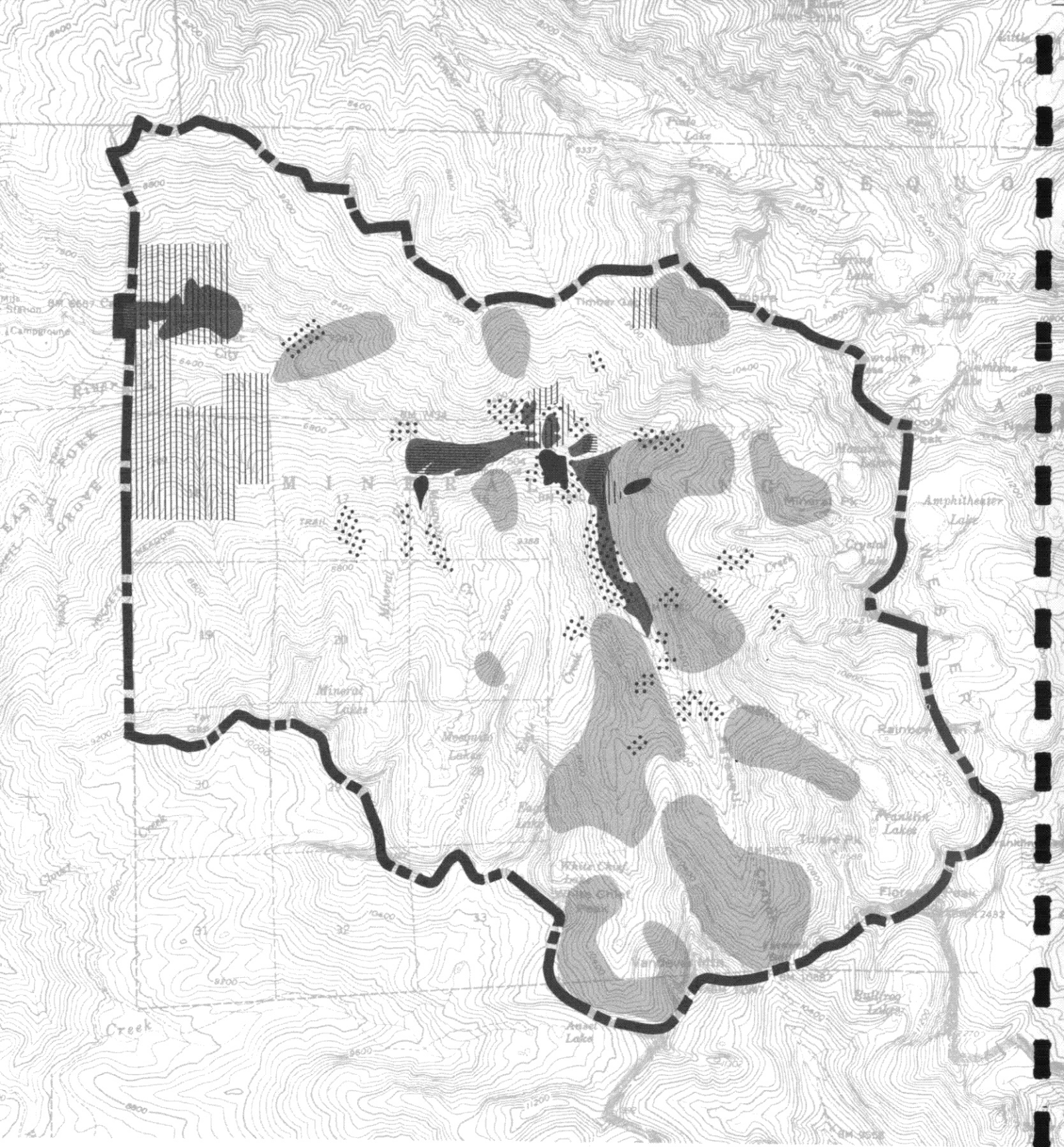
Geologic Hazards

Avalanche Activity: Evidence of significant avalanche activity is prevalent throughout most of Mineral King (see Planning Considerations map). Due to the steep valley walls and frequent winter storms, avalanches can be expected each winter. Steep gullies and open slopes are natural avalanche paths. Large avalanches are most probable on slopes of 30-55 degrees, but where snow is abundant, any slope over 22 degrees is subject to snowslides when the temperature and wind conditions favor them (LaChapelle 1970). Vegetation has little influence on the occurrence of snowslides; however, forested areas are less prone than open slopes. Unstable snow conditions resulting from heavy accumulations, steep angle of repose, poor internal cohesion of snow particles, little anchorage to the mountainside, wind, changing temperatures, or other stresses or combinations of these factors need only a trigger to release an avalanche. Natural triggers include seismic activity, falling cornices, snow falling from trees, icicles, rock falls, and small slides. Avalanches are most significant in terms of hazard to people. Historically, a number of lives have been lost and property damaged as a result of avalanches in Mineral King.

Rockfalls: Colluvial and talus slopes are evidence of rockfall activity from unstable slopes usually greater than 50 degrees. These type slopes are predominant in Mineral King along the eastern wall and at higher elevations throughout the valley.

Three obvious rockfall areas exist near the entrance to the valley from the access corridor (see Planning Considerations map). The corridor itself is relatively safe because the walls there are primarily solid granite. Seismic and avalanche activity, differential settling of rock, weathering along joints and fractures, and intrusion of moisture are all natural triggers for rockfalls in Mineral King.

Seismic Activity: The concensus of a number of reports for Mineral King put the valley in a low to moderate seismic activity zone. The Kern Canyon fault is located about 10 miles to the east, and its activity is felt in Mineral King, but there are no known faults in the valley itself. Although seismic activity is a natural trigger for rockfalls and avalanches, these secondary hazards are rated from minimal to moderate in the Tulare County Area General Plan (USFS 1976).



RECURRENT AVALANCHE AREA

0-10% SLOPE

ROCKFALL AREA

PRIVATE LAND

PERMIT CABINS

FAWNING AREA

SHALLOW CREEP AND MORAINAL SLUMP

PLANNING CONSIDERATIONS

MINERAL KING

SEQUOIA / KINGS CANYON NATIONAL PARKS / CALIFORNIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

102	20020
DSC	APR 80

NORTH

0 1 Kilometer

0 1 Mile

Soils

Most of the Mineral King area is occupied by miscellaneous land types, such as rock outcroppings and colluvial material, particularly the steep upper slopes. Areas with significant soil development are primarily located along the access corridor and on lower and mid-level slopes of the valley. The soils are developed from granitic and metamorphic rock, glacial debris, and alluvium. Where soils exist they are moderately deep with coarse to medium textures; however, little profile development occurs. The general lack of binding clay-sized particles in the soils combined with the steep slopes result in widespread distribution of areas highly susceptible to sheet and gully erosion. All of the soils in the Mineral King area have surface layers that resist wetting. As a result, there is some runoff until the surface soil has become sufficiently moistened (USFS 1970).

WATER RESOURCES

Surface and Groundwater Hydrology

Mineral King valley contains the headwaters of the 85.8-square-mile East Fork Kaweah River watershed (NPS 1977). Eight perennial streams--Monarch, Crystal, Franklin, White Chief, Eagle, Mosquito, Mineral, and Spring creeks--drain into the river. All but Spring Creek originate from cirque lakes of the same names. The East Fork begins near Farewell Gap and joins the main stem of the Kaweah River about 4 miles upstream from the town of Three Rivers. Most of the runoff is contained behind Terminus Dam upstream from Lemon Cove, California, and used for irrigation purposes. Four of the cirque lakes--Upper Monarch, Lower Crystal, Lower Franklin, and Eagle lakes--were dammed using native materials by the Mt. Whitney Power Co. in 1903 to regulate flow for power generating purposes under Federal Power Commission licensing. The small size of these dams make them relatively ineffective for flow regulation. In the access corridor west of the park boundary water is diverted in a flume to a hydroelectric plant near Three Rivers.

Most of the annual precipitation in the area falls as snow in the winter, creating a peak spring runoff pattern typical of high altitude Sierran streams. The mean annual discharge measured near Mosquito Creek averages 35 cubic feet per second (cfs), but mean annual rates as high as 77 cfs have been recorded during years of heavy snow accumulation. Maximum rates in May and June during snow melt average 155 cfs, and low flow rates in October and November average 8 cfs (USGS 1971). A Forest Service study conducted over a 7-year period reports an average flow on August 15 (the peak of the visitor season) of 21.3 cfs (USFS 1976).

Normal spring peak flows associated with snowmelt are seldom destructive; however, winter peak flows associated with warm winter rains falling on the snow pack are chacterized by a large volume of runoff occurring in a relatively short time, usually a matter of days, depending on the conditions, and they may be destructive. Water temperatures range from lows of 32 to 34 degrees Fahrenheit in the winter to highs of 50 degrees in late summer (USFS 1973).

Little research is available documenting groundwater resources in Mineral King. Infiltration rates tend to be high due to soil compositions, and streams and bank storage may contribute locally to groundwater aquifers. Also, underground stream channels exist in the network of limestone caves at higher elevations.

Floodplain and Flood Hazard

All government agencies must comply with Executive Order 11988, Floodplain Management, which directs them to "take action to reduce the risk of loss, to minimize the impact of floods on human safety, health and welfare." To comply with this mandate a study was undertaken to map the 100 and 500 year floodplains on the East Fork of the Kaweah River within Mineral King Valley. This study also evaluated the hazards associated with the velocity and volumes of flow projected for 100 and 500 year floods.

The results of that study indicate that the only NPS facility located within the 100 year floodplain is a small segment of the lower end of the Coldspring campground; a larger segment of this campground is located within the 500 year floodplain. Flood hazards to visitors as a result of the flows from 100 year and 500 year floods are small due to two factors. First, the river experiences low flows during the peak visitor season (see Hydrology section). Second, the probability of a large flash flood is remote due to the size and nature of the drainage basin. Flows for the 100 year flood in the vicinity of the campground would be approximately 1,000 cfs and 6 feet above the existing river bottom.

Water Quality

The U.S. Forest Service and U.S. Geological Survey have been collecting water quality data for the Mineral King area over the past decade. Their data indicate that the water quality is excellent. None of the studies indicates that there has been any period when serious degradation has occurred. However, coliform bacteria have been found in the East Fork of the Kaweah River during periods of low flow and high visitor use. The numbers of bacteria are well below levels that represent a health hazard, but they do indicate

that human activity in the area has the potential to become more of a problem as far as water quality is concerned. Up until now, the effects of human activity on water quality have been minimal and of a short-term nature. The benthic organisms found in the river are those which are particularly sensitive to organic enrichment, and the benthic community structure would be expected to be quite different if any serious water quality degradation had occurred.

During the summer of 1979 the USGS monitored several sites in the Mineral King area, including a site on the East Fork of the Kaweah River near Cabin Cove, one on Eagle Creek near Mineral King, and another on the East Fork of the Kaweah below the confluence of Mosquito Creek. This last site is the location where bacterial contamination has been found in previous studies. When 1979 data collected from the site become available, they will indicate the most recent effects of visitor activities on water quality. If the data indicate that water quality problems are developing, then the causative factors may be identified and corrective action taken before any significant damage occurs to the system.

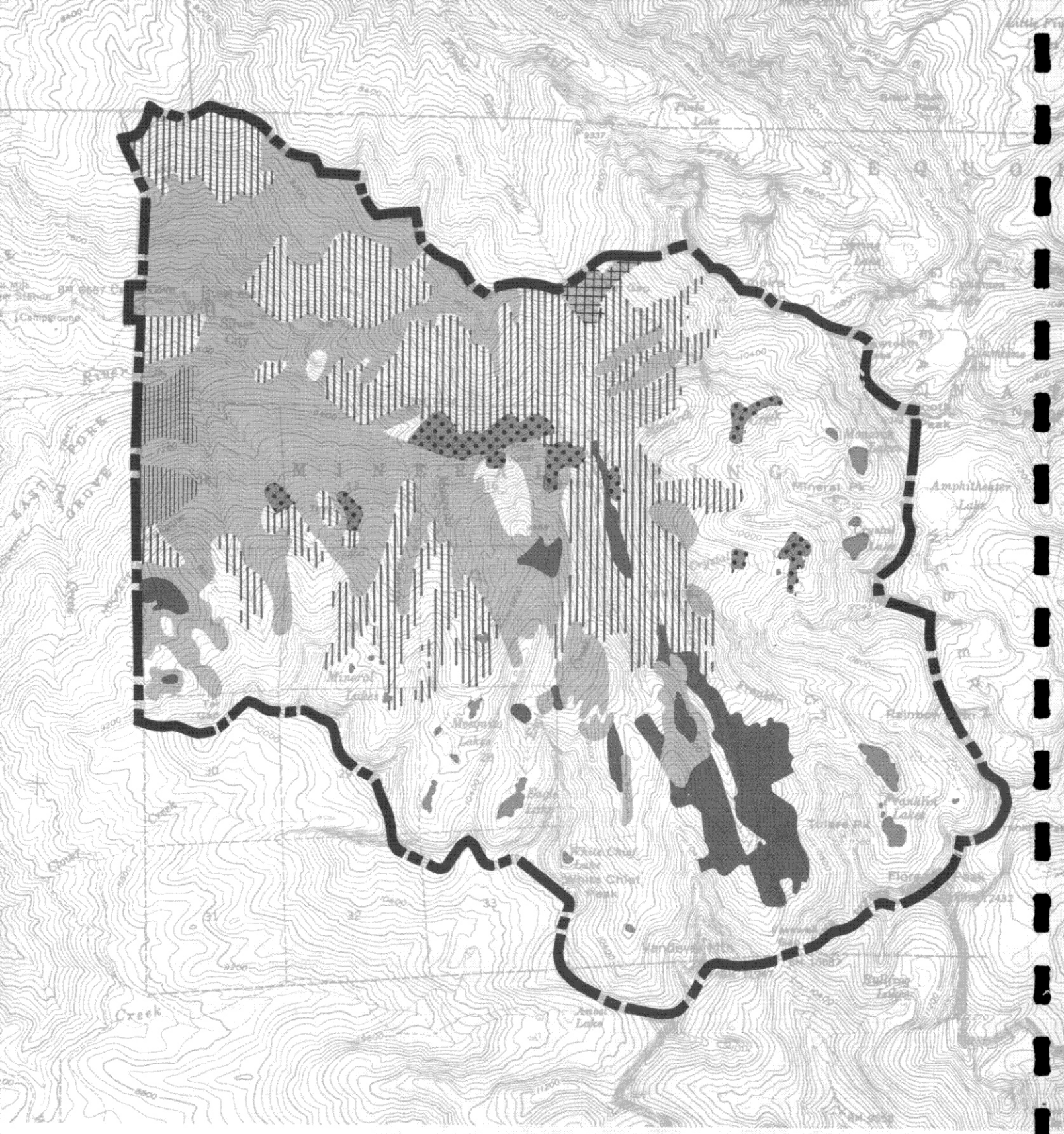
A California Department of Water Resources report (1970) indicated higher than expected levels of arsenic and copper in two areas of the Kaweah. Again, these constituents were not found in concentrations that represent a significant health hazard. The sources of these metals is unknown.

CLIMATE

The climate of Mineral King is primarily influenced by surrounding mountain topography and by elevation. Summer temperatures average in the high 60s to mid 70s and cool off at night to near 40 degrees Fahrenheit. Freezing temperatures may occur during any month of the year. Summers are mostly sunny; however, brief intense thunderstorms may occasionally develop, usually in the afternoon (USFS 1976a).

Winter temperatures average in the mid 30s although temperatures between 0 and 10 degrees can be expected. Winter frontal systems may cause cloudy conditions to persist for days. When these clouds drop below the mountain peaks, a dense fog with minimum visibility (white out) commonly lasts for several hours (USFS 1976a).

Mineral King receives most of its annual precipitation during the snow season, which lasts from November through early June. Snow depths on the valley floor average 60 inches, while in the upper bowls above 8,000 feet they average 70 inches, and above 10,000 feet they average more than 90 inches. The snow line crosses the access road to Mineral King at an average elevation of 5,700 feet for most of the winter, although it may drop below 5,000 feet for several days following storms (USFS 1976a).



SEQUOIA GROVE
FOXTAIL PINE
CONIFER
RIPARIAN
LAKE
BRUSH
MEADOW
LIMITED VEGETATION (BARE ROCK)

VEGETATION

MINERAL KING

SEQUOIA / KINGS CANYON NATIONAL PARKS / CALIFORNIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

102	20021
DSC	APR 80

NORTH

0 1 Kilometer
0 1 Mile

The most significant and typical air movements through the upper and lower valley are up-canyon flows during the day and down-canyon flows at night. These usually light winds reverse directions abruptly, causing strong mixing of valley air. The reversals occur predictably between 8 and 9 a.m. and 5:30 and 6:30 p.m. Winds in excess of 30 miles per hour occasionally occur in the valley, while the high open ridges frequently experience winds of 50 to 100 miles per hour. Winds from the south to west that blow during or immediately after snowstorms form the most severe cornicing of snow on the ridges above north to east facing slopes (USFS, 1976a).

AIR QUALITY

Air quality in Mineral King is excellent and is not threatened by any outside sources.

Both Sequoia and Kings Canyon national parks were automatically designated as class I areas under the 1977 Clean Air Act Amendments. However, Mineral King, which did not become a part of Sequoia National Park until November 10, 1978, was designated as a class II floor area, as defined by section 64(a) of the act, and it may only be redesignated as a class I area if the state initiates and approves the action. Compared to class I designation, class II designation allows for a greater increment in sulfur dioxide and particulate levels over baseline concentrations. However, the surrounding class I areas constitute a protective buffer for air quality in Mineral King.

VEGETATION AND WILDLIFE

Vegetation

The vegetation of the Mineral King area is primarily mixed conifer forest interspersed with brushland in areas shaved by avalanches, scattered meadow and riparian areas, and alpine areas (see Vegetation map). From the Atwell Mill area east, white fir is the dominant species, although pure or nearly pure stands of sugar pine, Ponderosa pine, Jeffrey pine, incense cedar, red fir, and giant sequoia exist. Two sequoia groves, East Fork and Atwell, exist in the access corridor; however, no sequoias are known to occur naturally in the valley itself. Groves appear to be restricted to sites where soil moisture is available throughout the dry summer months. The groves represent a fire climax community. The white fir community gives way to a red fir community through a short transition zone near Faculty Flat. The valley contains pure dense stands of red fir and scattered small areas dominated by lodgepole pine. As elevation increases to treeline, the forest communities

become more open, and trees become shorter. The most typical treeline conifers are whitebark and foxtail pines. The three largest recorded foxtail pines in the United States are located near the top of Timber Gap. Above treeline, colonization is primarily by lichens and bryophytes (Barbour and Major 1977)

The heavy avalanche activity in the valley results in many open areas, which would normally be forested at this elevation in the Sierra. These areas are vegetated primarily with associations of greenleaf manzanita, chiquapin, ceanothus, and sage. Riparian vegetation comprised of willows, cottonwoods, maples, alders, and elderberries is common adjacent to water courses, and aspen groves are common along the peripheries of wet areas. Because of the dense canopy and deep litter in the red fir forest little understory exists, but in the white fir forest there is a dense understory, fostered by the lack of recent fires. A variety of wildflowers adorn the valley floor and open forested slopes during the entire summer, including western wallflower, Sierra forget-me-not, mountain violet, Indian paintbrush, lupine, blue lips, shooting star, and phlox.

Wildlife

General: Natural habitat within Mineral King can be depicted by the major vegetation types, each of which hosts a variety of wildlife. Some species are limited to one such habitat, while others range over a number of them. Forested areas host a variety of commonly occurring mammals and birds, including chipmunks, squirrels, striped skunks, flycatchers, red-breasted nuthatches, juncos, western tanangers, chickadees, mountain quail, and great-horned owls. Riparian or open wet meadows host raccoons, moles, voles, porcupines, frogs, salamanders, dippers, red-winged blackbirds, swallows, hummingbirds, garter snakes, rubber boas, and alligator lizards. In alpine zones, where vegetation becomes more sparse, there are fewer animal species represented. Pikas, marmots, Clark's nutcrackers, and gray-crowned rosy finches are common, and golden eagles are occasional residents. Large furbearers range throughout the area in response to seasonal conditions and food availability. Coyotes, gray foxes, mountain lions, and bobcats are usually secretive, while black bears are often seen in populated areas searching for food.

The lakes and streams of Mineral King are typical of the Sierras, with naturally low biological productivity incapable of supporting large fish populations. The California Department of Fish and Game stocked Mineral King waters, particularly the lakes, with rainbow and eastern brook trout on a regular basis for a number of years. That program was recently discontinued. Cooperative studies are presently being undertaken by the National Park Service and the

Department of Fish and Game to identify the population status and exploitation rates of trout in the East Fork Kaweah River. These studies are intended to evaluate the need for more stringent angling regulations in order to sustain fish stocks in the absence of a hatchery stocking program. The study results will provide the basis for management of this fishery. The status, reproductive capability and species composition of trout in Mineral King lakes varies greatly between different lakes. These lakes contain different species of trout and receive varying amounts of nutrients and angling pressure. Without supplemental stocking of fish, populations will undoubtedly drop to their normal sparse levels in some of the lakes.

Mineral King Deer Herd: As stated in Alternatives for the Comprehensive Management Plan for Mineral King (October 1979), management of the Mineral King deer herd will be given special consideration. The herd, part of the Kaweah River drainage herd, was a primary reason for the establishment of the Mineral King Game Refuge in 1926. At that time, uncontrolled hunting had put the herd in danger of extinction. The protected herd grew in population until the 1940s, when their numbers exceeded the capacity of the habitat to support them. In 1950 a special hunt was authorized, and in the following 20 years approximately 2,000 deer were harvested to thin the herd and protect the range. Since 1970 the herd population has fluctuated between an estimated 350 and 1,000 animals, and it has been monitored to guide establishment of special hunt quotas. The California Department of Fish and Game suggests the herd be managed to maintain a population of 350 animals (Schneegas and Franklin 1972). Since NPS policy prohibits public hunting as a management tool, in 1979 the National Park Service began intensifying the monitoring program, as suggested by the California Department of Fish and Game, to allow better observation of habitat and herd trends. Monitoring and consultation with the California Department of Fish and Game will continue, and if the herd or range begin to deteriorate, several alternative management strategies will be considered. Possible alternatives include a special hunt by NPS personnel to thin the herd and alleviate the strain on the range; range management of summer, migratory, and winter ranges; and/or special hunts on the winter range, (under Bureau of Land Management jurisdiction). If the later is chosen, access across private lands will have to be improved.

The herd, composed of California mule deer (Odocolleous hemionus californieus), summers in Mineral King Valley at the 6,000 to 10,000 foot elevation and winters near Three Rivers, California, at the 1,500 to 3,000 foot elevation. It follows a 10 to 18 mile migration route along Paradise Ridge. The summer migration begins in April or May, and the herd reaches Mineral King Valley in early June. At this time, the does seek out suitable fawning areas (see Planning

Considerations map) and begin to drop their fawns. The survival rate of fawns is high compared to other Sierran herds, indicating a strong, productive herd. By the end of June, when visitors begin to arrive, the does have a range of as little as one-half mile while antagonistically protecting their young. In September the fawns are mobile enough to move to the higher country with the does to range with the bucks before the migration to winter range begins in October.

Longhurst and others conducted a deer disturbance study in 1977 in Mineral King Valley and observed that pack trains and unleashed dogs elicit the strongest response from the deer, causing fast retreats 100 percent and 86 percent of the time, respectively. Offtrail hikers cause a fast to slow retreat by deer 83 percent of the time, while ontrail hikers and vehicles cause considerably less response. The conclusion is that the deer have become accustomed to predictable human activities and tolerate them more readily than out-of-the ordinary activities (Longhurst 1978).

Endangered Species

A survey contracted by the National Park Service conducted in the summer of 1979 identified seven plant taxa in the Mineral King area that are recognized by the California Native Plant Society (1974, 1976, 1979) as rare or endangered. A status history of these plants is presented in table 1. The 1980 draft Federal Register "Notice of Review of Candidate Plant Species," prepared by the U.S. Fish and Wildlife Service, replaces House Document 94-51 (1975), the U.S. Fish and Wildlife Service Endangered Species List (1976), and the Ayensu and DePhilips (Smithsonian) list (1978).

The 1980 notice of review lists *Draba cruciata* and *Phacelia orogenes* as candidates of concern for California. *Brodiaea insignis* is a candidate endangered species. This species has a very limited distribution and is in danger of extinction through alterations of its habitat by man. The only known location in the project area was identified in the 1979 survey as being along the Mineral King Road near Lake Canyon and Squirrel creeks. None of the alternatives will directly affect its population.

None of the seven species listed in table 1 is on the U.S. Fish and Wildlife Service "Final List of Endangered and Threatened Plant Species" (Federal Register, January 17, 1979).

No known threatened or endangered fauna listed on the U.S. Fish and Wildlife Service "Final List of Endangered and Threatened Wildlife" (Federal Register, January 17, 1979) permanently inhabit or breed in the Mineral King area. There are occasional flyovers of the bald eagle, California condor, and peregrine falcon, but no nesting sites are in the project area (USFS 1976a).

TABLE 1
Status History of Rare or Uncommon Plants Inhabiting Mineral King

Species Scientific Name "Common Name"	California Native Plant Society (CNPS) (1974)*	House Document 94-51 (1975)	CNPS Addendum (1976)	U.S. Fish & Wildlife (Endangered Only) (1976)	Ayensu & DeFillips (Smithsonian) (1978)	California Fish & Game (1979)	CNPS Addendum (Nov. 1979)	U.S. Fish & Wildlife (Draft Notice) (March 1980)
Draba cruciata var. cruciata "Mineral King draba"	VR&R&EP (2-1-?-1)	Threatened	VR&R&EP (2-1-?-1)		Threatened		VR&R&EP (2-1-?-1)	Candidate of Concern for California
Eriogonum polypodum "foxtail buckwheat"	R&NEP (1---)		R&NEP (1---)				R&NEP (1---)	
Dicentra formosa ssp. nevadenis "Sierra bleeding heart"	VR&R&EP (3-1-1-3)	Threatened	VR&R&EP (3-1-1-3)		Threatened		VR&R&EP (3-1-1-3)	
Castilleja culbertsonii "Culbertson's paintbrush"	VR&R&EP (2-1-1-3)		Moved to R&NEP (1-1-1-3)		Threatened		R&NEP (1-1-1-3)	
Phacelia orogenes "wild heliotrope"	VR&R&EP (2-1-1-3)	Threatened	VR&R&EP (2-1-1-3)		Threatened		VR&R&EP (2-1-1-3)	Candidate of Concern for California
Brodiaea insignis "Kaweah brodiaea"	R&NEP (1-1-1-3)		Moved to VR&R&EP (3-3-2-3)			Endangered	VR&R&EP (3-3-2-3)	Candidate Endangered
Angelica callii "Call's angelica"	VR&R&EP (3-2-2-3)		VR&R&EP (3-2-2-3)	Endangered	Endangered		VR&R&EP (3-2-2-3)	

*CALIFORNIA NATIVE PLANT SOCIETY CODE

VR&R&EP = very rare and rare and endangered plants
R&NEP = rare and not endangered palnts

CALIFORNIA NATIVE PLANT SOCIETY NUMERICAL CODE

Rarity
1. Rare, of limited distribution, but distributed widely enough that potential for extinction or extirpation is apparently low at present.
2. Occurrence confined to several populations or one extended population.
3. Occurs in such small numbers that it is seldom reported; or occurs in one or very few highly restricted populations.

Endangerment (E)
1. Not endangered.
2. Endangered in part.
3. Totally endangered.

Vigor (V)
1. Stable or increasing.
2. Declining.
3. Approaching extinction or extirpation.

General Distribution (D)
1. Not rare outside California.
2. Rare outside California.
3. Endemic to California.

The spotted owl (unique, USFS 1976a) is known to inhabit the area above Silver City but it will not be affected by any of the alternatives. In 1975, an undescribed species of spider (Taracus sp.) was found to inhabit and be restricted to certain high elevation limestone caves in Mineral King. None of the alternatives will directly affect its population.

CULTURAL RESOURCES

Prehistory

The prehistory of the Sierra Nevada is not yet well known, particularly of the Sequoia and Kings Canyon areas. Adequate surveys have not been undertaken, few sites have been excavated, and secure dating sequences have not been formulated. In addition to numerous small surveys conducted as a result of development projects in Sequoia and Kings Canyon National Parks, Elsasser (1959) conducted a two-week reconnaissance survey of the two parks and Werlhof (1961) conducted a survey of the aboriginal trails between Hammond and Hospital Rock. From the completed surveys, it appears that the occupation of much of the Sierra Nevada occurred rather late.

No occupation of the Kaweah River drainage system before AD 900 to AD 1000 is documented (USNPS 1971). It is hypothesized (Bennyhoff 1953 and Elsasser 1960) that hunting and gathering groups prehistorically used the lower elevations during the winter, subsisting chiefly on acorns. During the summer months, they visited the higher elevations to hunt, trade, and collect pine nuts and other high altitude food sources.

Three archeological surveys have been conducted by NPS archeologists in the Mineral King area: Jennings and Kisling 1971, Morehead 1975, and Kamp and Whittaker 1979. These surveys have indicated a light prehistoric occupation, possibly sporadic summer use for hunting and trans-Sierra travel. The surveys identify 14 prehistoric sites, including one that appears to quality for the National Register of Historic Places (see table 2). Most of the sites are small bedrock mortar sites with at most a few artifacts. They are all in the main valley near the East Fork Kaweah River, on relatively flat land with good bedrock outcrops.

Ethnohistory of Historical Indian Occupants

For purposes of ascertaining and fulfilling responsibilities to Indians based on any traditional economic use rights or religious use rights, as required by Public Law 95-341, it is recognized that two groups of people originally occupied the area, Monache and

Tubatulabal, and that two other groups seasonally made use of park lands, Owens Valley Paiute and Yokuts.

Historically, the Sierra Nevadas drained by the Kaweah River and its tributaries were populated by the Monache. Three tribes of Monaches occupied the northwest three-quarters of Sequoia and Kings Canyon: the Waksachi, the Wobonuch, and the Potwisha. To the south, the Tubatulabal occupied the portions of Mineral King drained by the Kern River and its tributaries. Yokuts tribes lived west of the parks in the San Joaquin Valley. Owens Valley Paiute were east of the Sierra crest (Gayton 1948).

Linguistically, the Monache, the Tubatulabal, and the Owens Valley Pauite were Shoshonean speakers. The Yokuts spoke a California Penutian language. All groups subsisted by hunting, fishing, and collecting. Acorns were the staple food west of the Sierra crest, and pinon nuts were the staple east of the crest. A variety of seeds, berries, and roots were also collected. Winters were spent in the lower elevations, while summers included trips to the higher elevations such as Mineral King. Trade with the Owens Valley Paiute was one of the major reasons for these excursions. Although hunting and collecting occurred during these trips, the trips were often hurried; possibly in part due to the necessity of carrying additional food supplies along the route (Steward 1935).

Many of the descendants of these four groups are still in the parks' vicinity, residing throughout Fresno, Inyo, and Tulare counties and on the following nine reservations and rancherias in those counties (though not all such descendants are necessarily affiliated with any reservation or rancheria): Big Pine Reservation, Big Sandy Rancheria, Bishop Reservation, Cold Springs Rancheria, Fort Independence Reservation, Lone Pine Reservation, Santa Rosa Rancheria, Table Mountain Rancheria, and Tule River Reservation.

History

The Mineral King area was first reported in 1864 by Harry O'Farrell, a provisioner for government crews building the Hockett Trail. The major early use was for mining and related activities. The mining period in Mineral King (ca 1873-1882) has been described by Samuel Thomas Porter (1966). The following account has been abstracted from that work.

The first mining claim was filed in 1873 on the White Chief Mine by Crabtree and Beldon. Crabtree, Beldon, and four other Porterville men--Loop, Sinn, Goodhue and Ford--then organized Mineral King as an official mining district. During the fall of 1873, a total of 65 claims were filed, mainly by residents of Porterville and Visalia.

By 1874 a town was under construction at Mineral King. Among the first buildings constructed were a mill, a saloon, and a general store. The new settlement was named Beulah, meaning "land of promise." Beulah was later renamed Mineral King. Although progress on most of the mines was extremely slow, due chiefly to a lack of proper tools and sufficient capital, assay reports for the area were extremely encouraging and the rush continued. During 1874, claims were filed for 166 mines and 36 mill sites.

The year 1875 marked the beginning of the New England Tunnel and Smelting Company's involvement in Mineral King mining activities. In addition to acquiring as many mine claims as possible, the company proposed to bring in modern drilling equipment and to construct a sawmill, smelter, and assay office. The boom was still in progress, with 141 mining claims filed.

By 1876 the New England Tunnel and Smelting Company was in serious financial and legal difficulties. Nevertheless, they brought in Chinese laborers to accelerate work on a road from the valley to Mineral King, finished the sawmill, and built a smelter.

The following year, 1877, the smelter was used for roasting ores, but no suitable flux could be found for smelting. Mining activity continued at Mineral King, new claims were filed and old ones, including those at White Chief and Lady Franklin, were expanded. Nevertheless, the New England Tunnel and Smelting Company was in serious financial trouble. By September the Company had filed for bankruptcy.

In the spring of 1878, an avalanche destroyed several cabins at the Empire Mine, and the area seemed to be on the decline. However, in the fall of 1878 the Empire Mine was purchsed by Thomas Fowler, the California State Senator from Visalia, and interest in Mineral King was revived.

Under the influence of this new spurt of enthusiasm, the Mineral King Wagon and Toll Road Company was formed in 1879. The road was completed later that year, and is still in use today. In 1879, Mineral King was at the height of its prosperity. One hundred seventy-six new claims were filed.

By 1880, Thomas Fowler was in serious financial difficulty. Mining activity continued, but it was apparent the operations were declining. The Empire Mine was opened for the last time in 1882. Although small mining operations continued until 1929, closure of the Empire Mine signaled the end of the mining period in Mineral King.

After the mining era, Mineral King was used primarily as a recreational area. In the early 1900s the Mt. Whitney Power

Company dammed four of the high altitude lakes--Eagle, Crystal, Monarch and Franklin--to supplement their electrical generating system during the dry summer months. In 1890, Sequoia National Park was created, and the lands adjacent to Mineral King were annexed in 1926. Mineral King itself was excluded from the park and established as a game refuge, Sequoia National Game Refuge, because some mining activities were still taking place in Mineral King. As a game refuge, under the jurisdiction of the U.S. Forest Service, Mineral King was used chiefly for recreation, including hiking, summer cabin residence, and a small pack station operation. Among the summer homes in Mineral King is Kaweah Han, an exceptionally fine example of rustic architecture built in 1939 by the Wells family.

National Register Properties

Pursuant to Executive Order 11593, Protection and Enhancement of the Cultural Environment, Mineral King was surveyed for archeological, architectural, and historical resources. Those properties determined to merit nomination to the National Register of Historic Places are displayed in table 2.

SOCIOECONOMIC FACTORS

Regional Population and Economy

Mineral King is located in Tulare County. The population of Tulare County is estimated to be 200,400 people; population concentrations are centered in the western half of the county in the cities of Porterville (13,050), Tulare (17,100), and Visalia (31,800) (California Department of Finance 1973). In 1970 the county population distribution was 54 percent urban and 46 percent rural (Tulare County Chamber of Commerce 1974). Currently the economic base of the area is fairly diversified. Major employment sectors are agriculture (37 percent), government (15 percent), and the transportation, communications, and utilities fields (17 percent) (Security Pacific Bank 1973). Employment opportunities in recreation-related fields are increasing as more people take advantage of the natural qualities of the eastern section of Tulare County. Unemployment in 1972 was estimated to be approximately 6.1 percent (Security Pacific Bank 1973). The 1972 overall per capita income was $4,394. This per capita income figure is below that of the State of California ($5,405 in 1973), and the nation as a whole ($4,911 in 1973) (Tulare County Chamber of Commerce 1974).

The community of Three Rivers lies along California Highway 198 approximately 30 miles east of Visalia. The Three Rivers area has a population of about 2,000 people. This area functions as the

TABLE 2

Status of Cultural Resources

	Requires Preparation of National Register Forms	Nominated to the National Register	Level of Significance	Area of Significance	Period
Atwell Mill		X	L	I	1800 - 1899
Kaweah Han	X		L	AR	1900
Empire Mine	X		L	I	1800 - 1899
White Chief Mine	X		L	I	1800 - 1899
Crabtree Cabin	X		L	I-ES	1800 - 1899
New England Tunnel and Smelter Site	X		L	I	1800 - 1899
Mineral King Road	X		L	I-T	1800 - 1899
Archeological Site (Atwell Mill)	X		L	A	Prehistoric

Legend: NRHP= National Register of Historic Places
L = Local
I = Industry
AR = Architecture/Art
ES = Exploration/Settlement
T = Transportation
A = Archeology

gateway community for Mineral King by providing a full range of visitor services and accommodations.

Land Use

At the present time 745.11 acres of Mineral King are privately owned. Of that total 512.63 acres are developed for summer residential use and the remaining 232.48 acres are undeveloped. Development includes 28 residences and one commercial complex providing rustic overnight accommodations and food services. Additionally, Mineral King supports 67 summer residences under special use permits. The permittee residences are located in Cabin Cove (7 houses), Faculty Flat (38 houses), and the valley proper (22 houses).

Mineral King Access Road

The 25-mile access road was originally constructed in 1879 for wagon trains serving mines in the Mineral King area. It is presently owned and maintained by Tulare County and the lower 9.3 miles are outside the park. The entire road lies along a narrow two-lane alignment with numerous short-radius curves, very limited sight distance, few turnouts, and practically no straight sections. There are 698 curves within the 25-mile route; an average of 28 curves per mile. Many of the narrow areas are supported with rock walls, and the drop often ranges from 50 to over 400 feet, sometimes nearly vertical. Total elevation change along the route is approximately 6,500 feet; the maximum roadway grade ranges between 15 and 18 percent, with much of the grade around 7 to 9 percent. The first 17 miles are paved; the final 8 miles include 3 unpaved sections that total approximately 3-3½ miles.

At present the maximum speed in either direction is about 15 miles per hour. It takes approximately 1¼ to 1½ hours to make the one-way trip in a standard vehicle, and it takes a loaded truck 2 hours or more to make the climb. There are at least a dozen areas where passing is not permitted.

Utilities

At the present time, the only public utility serving the Mineral King area is Pacific Telephone and Telegraph. Water is captured from surface sources, either on an individual or a cooperative basis. Sewage is disposed by individual septic systems.

Visitation and Use

Traditionally, the activities engaged in at Mineral King have been camping, hiking, fishing, packtrips, and summer cabin use. Public facilities currently available include the Atwell Mill campground (23 sites), the Cold Spring campground (32 sites), Silver City store and cabins (34 pillows and food services), the Bedell pack station, three long-term parking areas (approximate capacity 175 vehicles), and a trail network (approximately 39 miles). Use of recreational facilities in Mineral King is frequently at capacity or near capacity during the summer. Visitation statistics gathered for the past ten years are presented in table 3. As can be seen from the table, annual visitation has fluctuated greatly. However, mean visitation for the past decade was almost 50,000 visitors per year. Approximately 75 percent of total annual visitation occurs during the months of June through September.

TABLE 3
Mineral King Visitation

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
January	550	248	150	220	515	424	784	669	290	392
February	532	224	200	476	315	469	1,036	672	448	322
March	973	203	399	438	193	714	599	707	644	441
April	767	1,095	427	882	382	749	536	1,684	613	1,166
May	6,836	1,827	2,740	1,736	2,265	2,075	5,026	2,254	2,989	2,594
June	6,395	6,342	2,149	4,988	5,758	3,402	10,542	5,509	6,948	4,519
July	13,262	8,736	19,215	10,059	6,269	9,608	12,898	5,474	11,879	8,106
August	9,209	9,051	26,117	5,768	8,656	12,082	10,507	2,884	12,779	5,635
September	7,168	6,916	10,388	4,134	7,329	6,986	8,085	5,887	8,316	2,749
October	3,805	3,633	6,066	2,121	3,696	1,645	3,049	3,321	4,550	3,255
November	1,407	739	2,646	641	844	2,863	1,005	1,673	1,880	1,141
December	47	0	560	336	900	1,110	2,993	884	917	
Total	50,078	30,015	71,057	31,798	37,121	42,126	57,057	31,577	52,252	

ALTERNATIVES AND THEIR ENVIRONMENTAL CONSEQUENCES

Four alternatives are presented for consideration and review. They were developed within the framework of legal and policy constraints for Sequoia and Kings Canyon National Parks, as well as the specific legislation for Mineral King. Additionally, an intensive public involvement program was conducted throughout the planning effort, and many of the actions reflect the recommendations of the public. Alternative A, which is the preferred alternative, directs development of the area to insure the retention of traditional use and rustic character of Mineral King. Alternative B, "no action," reflects only those changes necessary to meet health and safety standards. Alternative C suggests removal or relocation of many of the existing developments and the return of much of the area to natural conditions. Alternative D makes Mineral King a major attraction for national visitors similar in scale of development to such areas as Giant Forest and Grant Grove.

While the four alternatives suggest differing scales of development necessary to accommodate various types and levels of public use, certain conclusions and compliance actions are common to all the alternatives, and these are described in the remainder of this section.

Since the Mineral King Valley is the only easily accessible subalpine/alpine environment in Sequoia and Kings Canyon, it is considered to be the outstanding natural feature of the study area. Consequently, in all alternatives the valley has been kept free from development of new facilities. Generally, all lands above 8,000 feet in elevation could be recommended for wilderness designation. A map showing the areas proposed for wilderness designation is included in appendix A. Following completion of the comprehensive management plan, the steps necessary to seek formal designation will be initiated. Wilderness designation will restrict management prerogatives and will limit development of NPS facilities to nonwilderness areas in the Mineral King area. The action will provide increased protection from encroachment by man, and will have no major adverse effect upon the natural, archeological, or historic resources of the area. Since the areas proposed for wilderness designation are presently used as wilderness, visitor opportunities will remain unchanged.

Preliminary inventories of cultural resources have been completed, as described in the description of the environment. Any action that would affect cultural resources will be subject to compliance under section 106 of the National Historic Preservation Act of 1966. An ethnohistoric overview has also been completed as a part of the current planning effort. Consultations with Native Americans have been initiated in accordance with the Native American Religious

Freedom Act (42 USC 1978). All development proposals will be preceded by the appropriate consultations, clearance procedures, and, if necessary, preservation efforts.

All actions in each alternative avoid occupancy and modification of wetland areas in compliance with executive order 11990, Protection of Wetlands. Similarly, all actions were developed with the intent to minimize the impact of floods on human safety, health, and welfare as directed by executive order 11988, Floodplain Management.

Finally, the alternatives are consistent with the regulations regarding mining properties within units of the National Park System. Parties are free to exercise valid existing rights on mining claims governed by provisions in the Code of Federal Regulations (36 CFR 9, subpart A).

ALTERNATIVE A - THE PREFERRED ALTERNATIVE

A major feature of this alternative is that permitee cabins and private properties will be governed by the enabling legislation (P.L. 95-625). The immediate action plan that follows is intended to guide management for the next 10 to 15 years. Following this is a proposal to guide development in the more distant future, based on the eventual disposition of private and permit properties.

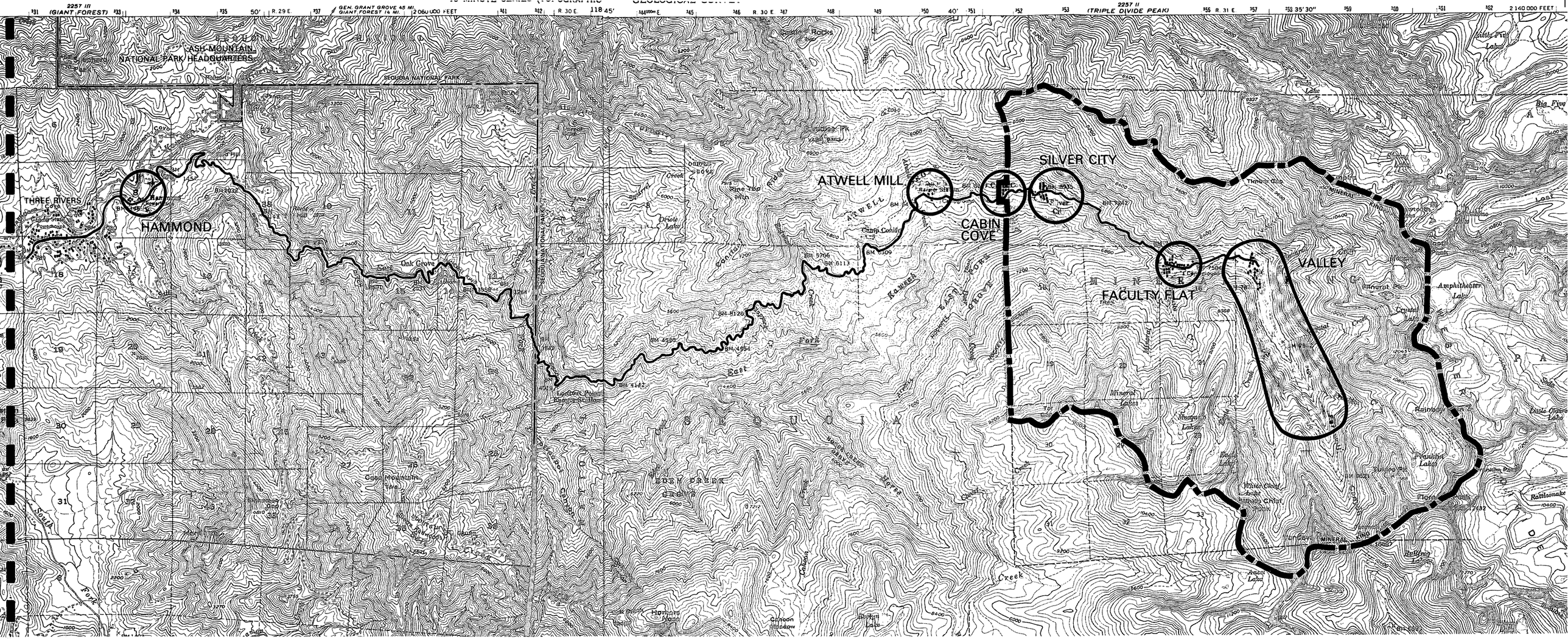
Immediate Action Plan

Objective: To provide an alternative experience to park visitors, in contrast to the experience offered at the more highly developed areas in Sequoia and Kings Canyon, by retaining the present character and pattern of use.

Strategy: This alternative proposes to maintain the current pattern, density, character, and level of public use in Mineral King by upgrading and redesigning existing development in its present locations. This alternative assumes the activities that have developed over time are the appropriate ones for Mineral King. Summer and winter use would continue as they have traditionally. The study area has been divided into several units for the presentation of specific actions. Reference can be made to the Planning Units map for clarification of these areas.

Valley: Allow permitee cabins to remain for the lifetime of the owner of record

Establish a backcountry quota based on trail size and lakeshore capacities



PLANNING UNITS

MINERAL KING

SEQUOIA / KINGS CANYON NATIONAL PARKS / CALIFORNIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

102	40079A
DSC	APR 80

NORTH

0 1 Kilometer

0 1 Mile

	Reroute Sawtooth Trail
	Redesign parking areas
	Institute a long-term parking capacity of 200 cars
	Establish a loop trail from Faculty Flat to points of interest
Faculty Flat:	Replace the ranger station in its same location.
	Provide additional space for display of artifacts relating to the historical periods of Mineral King
	Rehabilitate the Cold Spring campground, including campsite definition, drainage improvement, and roadway surface improvement
	Expand campground by 12 sites in vicinity of Mosquito Creek
	Allow permitee cabins to remain for the lifetime of the owner of record
Silver City:	Maintain the existing level of accommodations and services and retain present character
	Define vehicle and pedestrian circulation routes and initiate a revegetation program
	Replace National Park Service trailers with structures that are architecturally compatible with the setting
	Acquire private lands, granting options of life tenancy or 25-year estates if desired
Cabin Cove:	Allow permitee cabins to remain for the lifetime of the owner of record
Atwell Mill:	Retain campground
Hammond:	Construct a visitor contact station and provide improved information about availability of campsites, backcountry permits, and services
Road:	Pave the unpaved portion to reduce dust problems

Future Action Plan

Objective: To continue to provide an alternative experience to park visitors in contrast to the more highly developed areas in Sequoia and Kings Canyon by enhancing visitors perception of a pristine alpine valley.

Strategy: The actions for the future provide for the eventual removal of all facilities from the valley proper. The activities currently provided for in the valley would be absorbed in other developed areas.

Valley:	As permits expire and cabins are removed, return areas to natural conditions
	Relocate pack station to Faculty Flat when space becomes available
	Terminate road at Faculty Flat and remove from the valley
Faculty Flat:	Develop as major trailhead and public contact area
	Develop pack station to replace facilities removed from the valley
	Develop day-use and long-term parking area
	Expand campground
	As permits expire, remove cabins
Silver City:	Continue to provide visitor services and accommodations as appropriate
	Examine adaptive use of private properties for housing once structures are no longer occupied
Cabin Cove:	As permits expire, remove cabins and return sites to natural conditions
Atwell Mill:	As replacement campsites are provided at Cold Spring, remove campground and return area to natural conditions

Matters Requiring Additional Investigation

Transportation and Access: The National Park Service is committed to reducing the use of fossil fuels as an energy source. One

method of achieving this basic goal would be to introduce shuttle systems wherever feasible. At this time, it does not appear feasible to introduce a transportation system as an element of the plan due to a preponderance of private uses requiring access on the existing road. However, in the future it may prove feasible to provide for visitor access via a public shuttle. This issue will require further examination. It is recommended that the system serving Devils Postpile National Monument be used as a prototype to gauge the feasibility at Mineral King.

Campground Reservations: Because of environmental constraints, a significant expansion of camping opportunities is not feasible in Mineral King. If demand for camping in Mineral King exceeds the capacity of camping facilities, it may prove necessary to put the Cold Spring and Atwell Mill campgrounds on a reservation system like the ones in operation at the Lodgepole campground in Sequoia National Park and at other parks in the vicinity. This would avoid potential visitor disappointment once the system was instituted. A decision on the merits of a campground reservation system for Mineral King will be held in abeyance until that time.

Architectural Inventory of Privately Owned Structures: As leases expire on permit cabins, and when the National Park Service acquires private property, the structures will be thoroughly evaluated by a historical architect to determine their architectural significance, if any. No action regarding these properties will be implemented until the survey is completed and compliance requirements are met.

Impacts

Natural Environment: In the valley, environmental quality would be protected by confining the impacts of visitors to designated trails and parking areas and by limiting access to the backcountry. Eventually, all development except trails would be removed from the valley and it would be restored to natural conditions.

> Impacts of immediate actions: Developing a valley loop trail and rerouting Sawtooth Trail would affect less than 1 acre of land. The trail system would be developed utilizing existing trails wherever possible. Soil would be compacted and susceptible to erosion and some vegetation would be removed. Some habitat would be lost due to construction. By confining visitor use to the more narrow corridor of these trails, disturbance of wildlife in sensitive fawning areas would be reduced. Also, unstable soils on the present Sawtooth Trail would be avoided. Better confinement of vehicles in redesigned parking areas would promote plant growth through improved soil conditions and reduce mechanical damage to

existing plants. Also, the visual quality of the valley would be improved. The 200-car capacity would limit the number of visitors to the area and allow better management of backcountry quotas. Establishment of backcountry quotas would prevent further environmental deterioration in visitor use areas such as trails, lakeshores, and access points and allow environmental restoration to begin.

Impacts of future actions: The eventual restoration of abandoned development sites in the valley might result in temporary denuding of vegetation and consequential soil erosion and increased stream sedimentation. Revegetation by natural or mechanical means would soon stabilize the affected areas, and wildlife associated with early stages of succession would move into those areas.

In Faculty Flat, replacing the ranger station with a new facility would have no new effects since the same location is proposed. However, expanding the Cold Spring campground would affect approximately 2 acres of unimpacted land. Some habitat would be lost with the removal of vegetation, and soils would be disturbed. Improvements would confine vehicles and visitors with the same results as in the valley. Faculty Flat would eventually receive most of the facilities relocated from the valley. Parking and picnic areas, the pack station, and the major trailhead would be placed in areas already impacted by cabins. Some additional soil and vegetation might be impacted if available space would not accommodate all facilities. There would be no more loss of wildlife habitat than presently exists. All camping would be in the Cold Spring campground. Although the total area affected by development would be the same as exists today, the increased density of development would increase the severity of impacts on soils and vegetation. Soil compaction would inhibit new vegetative growth in areas where existing vegetation was damaged.

In Silver City, defining circulation patterns would reduce visitor impacts and allow environmental recovery to occur. This would increase the habitat of the spotted owl known to inhabit the area and reduce disturbance. The construction of new NPS housing would be done on previously impacted land.

The Hammond contact station would also be constructed on previously impacted land acquired outside park boundaries.

So long as the Atwell Mill campground was retained, visitors would continue to have an effect on the sequoia grove. The long-range effects of visitor use on sequoia groves is unknown. However, soil compaction from visitor use would continue to occur. This may affect the flow of groundwater vital to sequoia trees. Retention of the campground would also preclude the use of fire as a

management tool to promote regeneration of the sequoia. The eventual relocation of the campground would eliminate these impacts on the sequoia grove.

Paving the unpaved portions of the road would reduce the dust problem, thus improving visual quality. It would also affect runoff and infiltration patterns and introduce very small amounts of petroleum based contaminants.

No known rare or endangered species of plants or animals would be affected by any part of this alternative. Monitoring of the Mineral King deer herd would be continued so steps to mitigate any adverse effects associated with the herd could be initiated early. This program would be conducted with the cooperation of the California Department of Fish and Game.

Regional Economy: An input/output table was used to identify the economic impact associated with implementing the actions of the alternatives. This method allows for the quantification of person-years of employment and dollars of income that would be generated if the alternatives were implemented. For Mineral King the economic region has been defined as Tulare and Fresno counties; however, most of the benefits are expected to accrue in Tulare County.

For the preferred alternative, proposed construction costs of the immediate action plan are estimated to total $650,000. If this alternative was implemented, it would generate approximately 35 person-years of employment and $436,000 of income to the local economy over a 10 to 15 year period. The annual impact on the local economy would be very small in terms of employment and income.

The future action plan is not expected to be implemented for several years; therefore a legitimate estimate of the cost cannot be made. It is expected that the economic impact associated with these proposals would not be significant, especially if adaptive use of existing structures proved feasible in lieu of new construction.

Visitor Use: Sentiment expressed in public workshops indicated that a majority of the public supported a continuation of traditional use for the area. Generally, the immediate action plan suggests only limited change to existing patterns and levels of use. Consequently, it is not expected that return visitors would experience much disappointment in the immediate future. The upgrading and rehabilitation of existing developments would enhance opportunities for both return visitors and first-time visitors to enjoy the area. Specific actions directed toward improving the visitor experience include rehabilitating and expanding the Cold Spring campground (an addition of 12 sites), developing a valley

loop trail for interpretive purposes, rerouting Sawtooth Trail, providing display space at the ranger station for collection of historical artifacts, and improving informational services at both Hammond and Faculty Flat. As discussed in the description of the environment, even though the Cold Spring campground is located within the 100- and 500-year floodplains, danger to visitors from flash floods is minimal, particularly during the high use season. Expansion was proposed in this location because few other suitable areas exist (see Planning Considerations map) and it was the best alternative for efficient management.

Actions designed to maintain the present wilderness experience for backcountry users might inconvenience some visitors. When the trailhead quotas and parking capacity of 200 cars were achieved, additional visitors would be precluded from entering the backcountry at Mineral King. An analysis of previous visitation trends indicates that trailheads and parking capacities have been exceeded only on one or two peak weekends per year. Information services provided at Hammond would ensure that visitors were informed of backcountry conditions prior to their traveling the full 25-mile length of the winding Mineral King Road and then discovering that facilities were full.

The proposals for the future would change the character of Mineral King by returning certain areas to natural conditions. The principal change would be the relocation of visitor facilities from the valley, leaving an accessible pristine highcountry environment and enhancing the experience for those visitors seeking such a natural area. Relocating and upgrading developments in Silver City and Faculty Flat would enhance visitors' experiences to some degree. Some long-term users of Mineral King might experience some disappointment due to the modified character of the area. The number of visitors that would be accommodated would not change.

Under this alternative winter use would continue as it traditionally has. In other words, no services would be provided to those visitors seeking winter recreation opportunities in Mineral King. For those visitors desiring winter recreation and a full range of services and accommodations, such areas as Wolverton, Grant Grove, and adjacent Forest Service areas are expected to fulfill that demand.

Private Lands and Permittee Cabins: The immediate action plan does not suggest any use for private properties. Consequently, the disposition of these properties would be governed by the enabling legislation, which directs that private property be acquired as monies are available. Since no immediate use of these properties is identified, life tenancy or 25-year estates would be granted. The legislation allows for continued use of permittee properties for the lifetime of the owners of record.

Cultural Environment: The long-range option to examine adaptive use at Silver City could result in a proposal affecting Kaweah Han. A historic structure report would be required prior to any undertaking affecting this property. Structural evaluations of all cabins to determine their architectural significance, if any, would be required prior to implementation of actions affecting these properties.

ALTERNATIVE B - NO ACTION

Description

Objective: To modify existing conditions only as required to meet minimum health, safety, or welfare standards

Strategy: This alternative incudes only those actions that must be undertaken for compliance with required codes. These actions could be implemented in a short period of time and with minimal investment. The primary emphasis would be on upgrading existing utility systems to mitigate potential health problems. However, if upgrading required substantial investment, the facility would be removed rather than rehabilitated.

Valley Proper: Allow permitee cabins to remain for the lifetime of the owner of record

Retain parking areas and pack station in present locations

Faculty Flat: Upgrade utility systems serving the ranger station and the Cold Spring campground

Allow permitee cabins to remain for the lifetime of the owner of record

Silver City: Upgrade utility system serving Silver City as necessary

Acquire private lands, granting options of life tenancy or 25-year estates if desired

Cabin Cove: Allow permitee cabins to remain for the lifetime of the owner of record

Atwell Mill: Retain the campground

Hammond: Continue present signing

Road: Oil the unpaved portion to reduce dust problems

Impacts

Natural Environment: With no restrictions on vehicles or visitors, the gradual deterioration of the environment in the vicinity of visitor use areas would continue to occur. Unrestricted use would continue to inhibit new vegetative growth, promote loss of soil, and continue disturbance of wildlife in the backcountry, the valley parking areas, the Sawtooth Trail corridor, the Cold Spring and Atwell Mill campgrounds, and the Silver City area.

Improvements to the ranger station, Cold Spring campground, and Silver City utility systems would bring them up to standards that ensure human safety and protect the environment. Oiling the unpaved portion of the road would reduce the dust problem, thus improving visual quality.

Regional Economy: Development costs of this alternative would be approximately $25,000. Based on the input/output analysis, the net benefit expected to accrue to the local economy would be slightly more than one person-year of employment and approximately $16,000 of income.

Visitor Use: No change in traditional use patterns would occur. Unlike the impacts of alternative A, the visitor experience would not be enhanced by expanding the Cold Spring campground, instituting parking and trailhead capacities, and improving informational services.

Private Lands and Permittee Cabins: The impacts on private property owners and permittees would be the same as those discussed for alternative A.

Cultural Environment: Kaweah Han would be considered for adaptive use. A historic structure report would be required prior to any undertaking affecting this property.

ALTERNATIVE C

Description

Objective: To enhance visitors' perceptions of a pristine alpine valley by restoring the valley proper to natural conditions

Strategy: This alternative provides for the removal of all facilities from Mineral King Valley and the restoration of the valley proper to pristine conditions. The functions removed would be absorbed in other areas within Mineral King. As in alternative A, the existing density, character, and level of public use would be maintained, and there would be major rehabilitation and reorganization of

existing facilities and use patterns to enhance visitor experiences, improve circulation, and restore certain select developed areas to natural conditions. The difference between the alternatives would be the timeframe for implementation: actions involving private property and permittee cabins, which would be postponed under alternative A, would be carried out more immediately under alternative C.

Valley Proper: Establish a backcountry quota based on existing trail size and lakeshore capacities

Reroute Sawtooth Trail

Do not renew short-term permittee cabin leases as they expire; restore sites to natural conditions

Terminate road at Faculty Flat

Remove and relocate parking areas and pack station

Develop a major trail from Faculty Flat to Vista Point at the edge of the valley proper

Establish loop trails to points of interest

Faculty Flat: Develop as a major trailhead and public contact area

Phase out permittee cabins as necessary to provide space for functions relocated from the valley proper

Replace the ranger station

Develop day-use and long-term parking areas

Develop pack station

Develop daytime picnic areas

Rehabilitate the Cold Spring campground, including campsite definition, drainage improvement, and roadway surface improvement

Establish walk-in campsites for use by backpackers going into or coming out of the backcountry

Silver City: Continue existing level of accommodations and services and retain present character with minor upgrading of existing facilities

Reorganize development to improve circulation and foster vegetation growth

Acquire private land; adaptively use selected cabins for housing, lodging, hostels, or programs, and restore other sites to natural conditions or convert to camping areas

Develop an NPS housing and maintenance area

Cabin Cove: Allow permitee cabins to remain for the lifetime of the owner of record

Atwell Mill: Phase out camping as sites become available in the Silver City area

Provide interpretation of history and the regenerating sequoia grove

Hammond: Construct a visitor contact station and provide improved information about availability of campsites, backcountry permits, and services

Road: Pave the unpaved portion to reduce dust problems

Impacts

Natural Environment: Impacts on the natural environment would be the same as the long-term impacts of alternative A with the following exceptions. The restoration of development sites in the valley and Atwell Mill would occur more quickly, avoiding the potential for interim adverse effects on the Atwell sequoia grove. Reorganization of development at Silver City would impact new areas as buildings were moved. It is not known at this time how much previously unimpacted land would be affected by reorganization and new construction, but care would be taken in planning to avoid unimpacted areas wherever possible.

Regional Economy: A cost estimate for this alternative is projected at $1,266,000. Based on the input/output analysis, this would generate 68 person-years of employment and $827,000 of income to the local economy. Implementation would extend over a 10 to 15 year period, so the annual economic impact would be relatively small.

Visitor Use: All of the long-term impacts of alternative A would also be realized under alternative C. In addition, adaptive use of cabins in Silver City to provide low-cost hostel accommodations and interpretive programs and displays would create additional opportunities for visitor use.

Private Lands and Permittee Cabins: To allow for the prompt relocation of facilities out of the valley, cabin owners in both the valley and Faculty Flat would be denied renewals on their permits and lose the use of these properties. Because no actions are proposed for Cabin Cove, the seven permittee cabins located there would remain for the lifetime of the owners of record. When private property in Silver City was acquired, estates would not be granted, and property owners would lose the use of these sites and improvements, also. All applicable provisions of Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, would be honored, and affected county governments would be compensated with payments in lieu of taxes, in accordance with Public Law 94-565.

Cultural Environment: Impacts and mitigation would be the same as the long-term effects of alternative A.

ALTERNATIVE D

Description

Objective: To expand public use oportunities by developing Mineral King as a major year-round attraction of Sequoia and Kings Canyon national parks.

Strategy: This alternative suggests major modification of the existing pattern and character of development. It would direct major development to accommodate a larger and more diverse visitor population by increasing the capacity of the access road and offering more extensive visitor services and accommodations than presently are offered.

Valley Proper: Terminate the road and provide a small day parking area at the edge of the valley proper (Vista Point)

Do not renew permittee cabin leases as they expire; adaptively use cabins or restore sites to natural conditions

Establish day-use loop trails originating from Vista Point

Remove roads, parking areas, and pack station

Increase backcountry trail quotas and intensively manage the backcountry

Develop cross-country ski trails

Faculty Flat: Develop as major backcountry trailhead and public contact area

Phase out permittee cabins as necessary to provide space for functions relocated from the valley proper

Replace the ranger station and expand its function to include interpretation

Develop a long-term parking area

Develop a pack station

Develop picnic areas with associated parking

Rehabilitate the Cold Spring campground, including higher density campsite definition, drainage improvements, and roadway surface improvements

Expand camping in the vicinity of Mosquito Creek

Establish walk-in campsites for use by backpackers going into or coming out of the backcountry

Develop cross-country ski trails

Silver City: Provide a full range of accommodations and services

Provide a range of year-round accommodations and services to facilitate winter use of the area

Redevelop existing lodge site as a village center, providing higher density lodging, expanded market and food service, and programs

Acquire private land; adaptively use cabins for housing, lodging, hostels, or programs

Develop an NPS/concessioner housing and maintenance area

Cabin Cove: Phase out permittee cabins

Provide a rest stop and picnicking area and enhance views to the southeast with selective cutting

Develop cross-country ski trails

Atwell Mill:	Remove camping from the sequoia grove
	Interpret history and regeneration of sequoia grove
	Develop cross-country ski trails
Hammond:	Develop a contact station for information and fee collection
Road:	Improve access to accommodate a larger volume of visitors
	Examine options for winter access, including plowing the road and allowing oversnow transportation

Impacts

Natural Environment: The impacts of confining visitors to trail corridors, relocating parking and the pack station from the valley to Faculty Flat, and removing camping from the Atwell sequoia grove would be the same as discussed for alternatives A and C. However, development of areas for greater visitor use would generate significant new impacts.

In the valley, larger backcountry quotas would increase visitor use effects on the resources. More use would proportionately disturb more soil, vegetation, and wildlife. Water quality of the alpine lakes and streams would deteriorate with increased human use. Sensitive geologic features, such as the limestone caves, could be adversely affected by increased use if too many visitors learned of their locations. Increased use could also have an adverse effect on an uncommon species of spider found in the caves. As with all proposed cross-country ski trails, but more so for those in the valley, avalanche danger to visitors would increase because greater numbers of visitors would be in the area. Unless existing trails were used for cross-country skiing, some vegetation would be removed to create new trail corridors. Skiers would not affect soils and vegetation, but if hikers used these trails in summer, they would compact soils and trample vegetation. If permittee cabins were used adaptively, some visual intrusion would continue to exist, and soil and vegetation would be disturbed along necessary access routes.

In Faculty Flat, the greater density of the campground (possibly 150 sites) would have proportionately greater impacts on soil, vegetation, and wildlife. Larger utility systems would be necessary to accommodate increased use. The effects of expanding these facilities would include removal of vegetation and disturbance of soil.

The major development proposed for Silver City would have long-term effects. More construction and rehabilitation of buildings and systems than already mentioned in previous alternatives would require commitment of more already impacted land. Related construction impacts to soils and vegetation would increase. Winter use of fireplaces and increased automobile traffic would affect the air quality in the area. A complete analysis of the effects of increased traffic on air quality is included in appendix B. More energy would be consumed to allow winter use. Greater demands for water and increased paving around buildings would affect the hydrology of the area. The addition of concessioner housing as well as NPS housing would require more land to be impacted unless adaptive use of acquired private cabins can accommodate the needs.

Phasing out cabins from Cabin Cove would allow revegetation to occur as described for the valley. The rest stop and picnic area would use already impacted land from the cabins. Selective cutting for view enhancement would require removal of a small amount of vegetation.

Actions at Atwell Mill and Hammond would be the same as those in alternatives A and C.

Improving the Mineral King road would be a major action that would affect soils, vegetation, and air and water quality. Examples of impacts include removal of soil and vegetation from cut and fill operations, disturbance and additional road kill of wildlife, disruption of groundwater flows from cuts and associated impacts to vegetation, introduction of sediment and chemical pollutants to water supplies, and increased auto emissions pollutants in the air (see appendix B). The candidate endangered species Brodiaea insignis, which is located along the road corridor, would be affected. A detailed study of these impacts is presented in the Final Environmental Statement for Mineral King Recreation Development done by the Forest Service in 1976. Another report by the NPS Branch of Roads, Denver Service Center (unpublished), refers to major environmental consequences of the realignments that would be required to improve the road.

Regional Economy: The cost of implementing this alternative is conservatively projected to be $51,322,000, with reconstruction of the access road constituting the major expense. The input/output analysis indicates that this alternative would generate 2,526 man-years of employment and $33,505,200 of income to the regional economy. Assuming a 15-year period for implementation, this would result in an annual gain of 168 man-years of employment and $2,233,680 of income.

The dispersion of impacts within the region is difficult to project. If the construction employees lived on site and did not bring their families with them, impacts on surrounding communities, such as

Three Rivers, would be small. However, if a large number of construction workers and their families decided to live in Three Rivers for the duration of the project, the impact on that small community could be substantial.

Visitor Use: The objective of this alternative is to make Mineral King a major developed area complementing such areas as Grant Grove and Giant Forest/Lodgepole. If this was accomplished, Mineral King would attract a significantly larger number of visitors than is presently drawn and accommodate a national visitor population. Generally, the development contemplated in this alternative would provide for additional visitors by increasing the density of campgrounds and lodging units and also increasing the trailhead quotas. Although a greater number of visitors could experience Mineral King, this would result in a reduction in the wilderness qualities of the area.

The other major feature of this alternative is to provide for winter use by offering a full range of year-round accommodations and services and by developing a network of cross-country ski trails. This would greatly expand opportunities available to winter recreationists; however it would also subject more people to the danger of avalanche, which is more prevalent in the Mineral King Valley than other areas in the Sierra.

Private Land and Permittee Cabins: Impacts on property owners would be generally the same as those discussed for alternative C. Unlike alternative C, actions are proposed for Cabin Cove that would require denial of permit renewals for those owners, also.

Cultural Environment: The Mineral King Road would be significantly altered to improve access. The historic character of the road would be compromised and possibly eliminated. All other impacts and mitigation would be the same as described for alternatives A and C.

TABLE 4

SUMMARY OF IMPACTS

SUMMARY OF IMPACTS TO NATURAL ENVIRONMENT

	Alternative A	Alternative B	Alternative C	Alternative D
Valley Proper	Sawtooth and valley loop trails--less than 1 acre affected; some loss of soils, vegetation, and habitat; visitor use impacts confined and sensitive areas avoided Redefine parking areas--impacts confined; vegetation growth and soil conditions improved; backcountry quotas made more manageable Backcountry quotas--impacts to lakeshores, rivers, and general backcountry limited to that which resources can sustain without deterioration Future Actions Remove cabins/restore natural conditions/terminate road/relocate parking and pack station--some temporary scars; soils, vegetation, and visual quality improved; habitats increased, disturbance decreased; visitor use impacts confined	Continued deterioration of soils, vegetation, and habitat near visitor use areas from lack of confinement of vehicles and visitors Continued deterioration of lakeshores, rivers, and general backcountry by more users than the resources can accommodate	Sawtooth and valley loop trails/backcountry quota--same as A Remove cabins/restore natural conditions/terminate road/relocate parking and pack station--same as A (future actions) Major trail to vista point--use old road bed, already affected	Remove cabins/restore natural conditions/terminate road/relocate parking and pack station/valley loop trails--same as A Adaptive use of cabins--continued visual impact; soils and vegetation disturbed along access routes Increase backcountry quota--proportionately more effect on resources with higher density use (more deterioration of water, soils, vegetation, wildlife, and sensitive features) Cross-country ski trails--no impacts if existing trails used; some effects on soil and vegetation if new trails constructed

	Alternative A	Alternative B	Alternative C	Alternative D
Faculty Flat	Replace ranger station--new building on same previously affected site Rehabilitate Cold Spring campground--vehicle and visitor impacts confined; new vegetative growth and improved soil conditions Expand Cold Spring campground--about 2 acres of previously unimpacted land affected; some vegetation removed; some short-term soil erosion; reduced habitat Future Actions Remove cabins--availability of scarce buildable land for relocation of facilities from valley proper; major trailhead/contact area/pack station/parking area/day-use area all provided on previously impacted land	Upgrade utilities for ranger station and Cold Spring campground--done on previously impacted land; needed to meet health codes	Replace ranger station/ rehabilitate and expand Cold Spring campground--same as A Remove cabins/major trailhead/contact area/pack station/parking areas/day-use area--same as A (future actions)	Replace ranger station--same as A Rehabilitate and expand Cold Spring campground--same as A but development more dense with proportionately greater effects Remove cabins/major trailhead/contact area/pack station/parking areas/day-use areas--same as A (future actions) but development more dense with some additional unimpacted land affected. Cross-country ski trails--same as valley proper

	Alternative A	Alternative B	Alternative C	Alternative D
Silver City	Define circulation--visitor impacts confined; new vegetative growth and improved soil conditions; improved habitat for rare spotted owl known to inhabit the area NPS housing--trailers replaced on previously impacted land Future Actions Adaptive use of private property--reduced need to disturb unimpacted land	Upgrade utilities--area previously affected; needed to meet health codes	Define circulation--same as A Reorganize development--some short-term construction effects, generally confined to areas previously impacted; some areas restored to natural conditions Adaptive use of private property--same as A (future actions) Convert to camping--reduced density at Cold Spring campground; camping eliminated from sequoia grove at Atwell Mill	Full range of year-round accommodations--overall greater commitment of resources than other alternatives; additional land affected and energy consumed; decreased air and water quality; habitat decreased NPS and concessioner housing--more land affected by higher density use of area Adaptive use of private property--same as A (future actions)
Cabin Cove	No immediate action Future Actions Remove cabins/restore natural conditions--same as valley proper	No action	No action	Remove cabins/restore natural conditions--same as A (future actions) Rest stop/picnic area--area previously impacted Selective cutting--some vegetation removal Cross-country ski trails--same as valley proper
Atwell Mill	No immediate action Future Actions Remove campground/restore natural conditions--same as valley proper; allow regeneration of sequoia grove; allow use of fire by management	No action	Remove campground/restore natural conditions--same as A (future actions)	Remove campground/restore natural conditions--same as A (future actions) Cross-country ski trails--same as valley proper

	Alternative A	Alternative B	Alternative C	Alternative D
Hammond	Contact station--outside park boundary; previously impacted area	No action	Contact station--same as A	Contact station--same as A
Road	Pave unpaved portions--reduced dust; improved visual quality; slight change in hydrology	Oil unpaved portions--same as A	Pave unpaved portions--same as A	Realignment/reconstruction--major impacts to soils, vegetation, habitat, wildlife, hydrology, air and water quality, and candidate endangered species *Brodiaea insignis*
Total Previously Unimpacted Land Affected	Approximately 3 acres Future Actions Approximately 4 acres; would be net gain due to restoration to natural conditions	Less than 1 acre	Approximately 4 acres; would be net gain due to restoration to natural conditions	More than 8 acres; restoration to natural conditions would not offset development

SUMMARY OF IMPACTS TO SOCIOECONOMIC ENVIRONMENT

	Alternative A	Alternative B	Alternative C	Alternative D
Regional Economy	$650,000 total construction costs 35 person-years employment $436,000 income to local economy 10-15 years to implement Future Actions No legitimate cost estimate possible due to length of time involved and other variables	$25,000 total construction costs 1 plus person-year employment $16,000 income to local economy	$1,266,000 total construction costs 68 person-years employment $827,000 income to local economy 10-15 years to implement	$51,322,000 total construction costs (conservative estimate; road construction would be major expense) 2,526 person-years employment $33,505,200 income to local economy 15 years to implement (168 person-years and $2,233,680 local income per year) Effects could be greater if construction workers and families lived in local communities

	Alternative A	Alternative B	Alternative C	Alternative D
Visitor Use	Continued traditional use patterns and levels; no winter services provided Visitor experience improved by rehabilitation and expansion of Cold Spring campground; interpretive valley loop trails, rerouted Sawtooth Trail; historical artifact collection at ranger station; improved information services at Hammond and Faculty Flat Backcountry users possibly inconvenienced by trailhead quotas and parking capacities; mitigated by contact station at Hammond Future Actions Traditional character changed by reducing development and returning to natural conditions Enhanced experience for those seeking pristine environment Some long-term users disappointed by changing character	Continued traditional use patterns and levels; no winter services provided	Same as A (future actions); emphasis on pristine environment and upgraded centralized facilities Adaptive use of some cabins--could provide low-cost hostel accommodations	Traditional use patterns and levels changed; increased density with more people, including national visitors experiencing Mineral King Winderness qualities reduced due to increased backcountry quotas; some visitors disappointed by change in character Winter recreational opportunities expanded by provision of year-round services

	Alternative A	Alternative B	Alternative C	Alternative D
Private Lands and Permittee Cabins	Private lands acquired as monies become available; life tenancies or 25-year estates granted Permittee cabins allowed to remain for the lifetime of the owner of record Future Actions Private property and permittee cabins eliminated as monies become available or need for property arises; long-term users denied continued use of these properties; applicable laws honored for compensation and relocation assistance	Same as A	Cabin Cove--same as A Silver City, Faculty Flat, and valley proper--private property and permittee cabins eliminated as monies become available or need for property arises; no granting of life tenancies or estates; applicable laws honored for compensation and relocation assistance; long-term users denied continued use of these properties	Same as C with elimination of permittee cabins at Cabin Cove

SUMMARY OF IMPACTS TO CULTURAL ENVIRONMENT

Alternative A	Alternative B	Alternative C	Alternative D
Future Actions As all cabins are acquired, they must be evaluated for archtectural significance Historic structures report will be required before any actions concerning Kaweah Han begin	Same as A	Same as A	Major roadwork will compromise or possibly eliminate historic character of that resource Kaweah Han and other cabins--same as A

CONSULTATION AND COORDINATION WITH OTHERS

PUBLIC

The planning process for Mineral King was initiated in April 1979 by conducting a series of five public workshops. The purpose of the workshops was to gain an understanding of the range of opinions and ideas individuals and organizations held regarding the future management of the area. The workshops took place in Los Angeles, Bakersfield, Fresno, Visalia, and Three Rivers. Attendance was approximately 400 people. During the course of the meetings, individuals were encouraged to express all of their ideas and desires about the area. Following the workshops, an additional 75 written responses were received commenting on the future management of Mineral King. At the end of this phase of the public involvement effort, a complete list of public concerns was compiled. A summary of those views was sent to participants to ensure that all ideas were given consideration. The analysis of public input served as the foundation for the development of alternative strategies.

Once the alternatives were defined, they were published and sent to approximately 900 individuals and organizations. The publication was forwarded to individuals that had participated in the workshops, to those people who had written and asked to be included, to private landowners and cabin owners of Mineral King, and to individuals that had been placed on the Sequoia and Kings Canyon mailing list prior to the start of the Mineral King planning project.

GOVERNMENTAL AGENCIES AND OTHER INTERESTED GROUPS

To ensure that agencies with an active interest in, or specific concern for, Mineral King were kept informed of the project, several meetings were arranged. The purpose of these consultations was to clarify concerns, update planning information, and identify other influences on the area. The following meetings were held.

April 1979 - An informal meeting was held at park headquarters with members of the Mineral King Task Force of the Sierra Club, at their request. Discussions concerned the legislation for Mineral King, the planning process, and the timeframe for completion of the project.

May 1979 - Members of the park staff met with the Tulare County Board of Commissioners. Discussions concerned the Mineral King Road. California Department of Fish and Game

representatives met with members of the park staff and the planning team to evaluate the management of fish and wildlife in Mineral King.

June 1979 - A representative of the Southern California Edison Company met with the park staff and the planning team. The issue discussed was the alpine lakes in Mineral King that have been dammed under licensing from the Federal Power Commission.

August 1979 - A meeting was held at the request of the Mineral King Homeowners Association to discuss the legislation and the progress of the planning project.

October 1979 - A meeting in Sacramento with the California Department of Fish and Game was arranged by the park staff. Issues included a status report on planning for Mineral King and additional clarification of that agency's concerns regarding wildlife and fisheries policies. Correspondence and meetings with individuals and organizations representing Indian civil and religious leaders were initiated. The conclusions of these consultations are detailed in the next section.

CONSULTATION WITH NATIVE AMERICANS PURSUANT TO AMERICAN INDIAN RELIGIOUS FREEDOM ACT (P.L. 95-341)

Research and consultations were carried out to assist in implementation of any religious or residual rights of Indians that may emanate from two domains not pertinent to other visitor uses: (1) residual effects from treaties and agreements between the federal government and Indians and other residual rights of Indians issuing from unsettled claims, and (2) the American Indian Religious Freedom Act (P.L. 95-341) of August 11, 1978. Members of Indian groups were consulted, certain aspects of the groups' ethnohistory summarized, and various legal documents reviewed to form a base study. The study also details other actions that were taken toward satisfying any possible obligations.

No residual rights to hunt, trap, fish, collect, etc., have been determined to exist in treaties, agreements, or the acts enabling the nine reservations and rancherias or in the various acts constituting the legislative history of the parks. Archeological sites, locations having religious or ceremonial importance, or other sorts of specific places that are significant or could be significant to the four groups in their ongoing traditions and cultural values might exist, within the parks' boundaries, but none were identified by those members who were consulted. Neither did they identify any cemeteries or burials within the parks or any objects in the

possession of the National Park Service that are religious or ceremonial in importance. Residual and religious rights, if such exist, have not been implemented to date.

Certain questions raised during consultations regarding ceremonial use of park lands and collecting of traditional sorts of materials from inside the parks have yet to be resolved, but these should in no way affect the present planning activities. (Specific details of these questions are confidential under the Privacy Act and/or the Archeological Resources Protection Act of 1979.)

The National Park Service program for implementing and assuring the rights of Indians at Sequoia and Kings Canyon National Parks is an ongoing process, of which only the first step has been taken. Though every reasonable effort has been made thus far to contact properly interested and concerned Indian individuals and organizations, it should not be assumed that others might not inquire to the parks later.

PUBLIC LAW 95-625—NOV. 10, 1978

ADDITION OF MINERAL KING VALLEY TO SEQUOIA NATIONAL PARK

16 USC 45f.

SEC. 314. (a) It is the purpose of this section to—

(1) assure the preservation for this and future generations of the outstanding natural and scenic features of the area commonly known as the Mineral King Valley and previously designated as the Sequoia National Game Refuge; and

(2) enhance the ecological values and public enjoyment of such area by adding such area to the Sequoia National Park.

(b) (1) In order to add to the Sequoia National Park (hereinafter in this section referred to as the "park") a certain area known as Mineral King Valley possessing unique natural and scenic values, there is hereby established as part of such park all lands, waters, and interests therein, constituting approximately sixteen thousand two hundred acres designated before the date of the enactment of this Act as the Sequoia National Game Refuge and as depicted on the drawing entitled "Boundary Map, Sequoia-Kings Canyon National Park", numbered 102-90,000 and dated April 1975. A copy of such drawing shall be on file and available for public inspection in the office of the Director, National Park Service, Department of the Interior. After advising the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate in writing, the Secretary is authorized to make minor revisions of the boundaries of the park when necessary by publication of a revised drawing or other boundary description in the Federal Register.

Drawing copy, availability.

Boundary revisions, publication in Federal Register and advisement to congressional committees.

(2) The Sequoia National Game Refuge is hereby abolished and the Secretary of Agriculture shall transfer, without consideration, to the administrative jurisdiction of the Secretary, the area constituting such refuge, and any unexpended funds available for purposes of management of the refuge shall be available for purposes of management of the park.

Sequoia National Game Refuge, abolition.

(c) (1) Within the boundaries of the area added to the park pursuant to this section, the Secretary may acquire lands and interests in lands by donation, purchase with donated or appropriated funds, exchange, or transfer from other Federal departments or agencies.

Lands and interests, acquisitions.

(2) Where the private use of any property acquired pursuant to this subsection would, in the judgment of the Secretary, be compatible with the purposes of this section, the Secretary may, as a condition of such acquisition, permit the owner or owners of such property to retain for themselves and their successors or assigns rights of use and occupancy. Such rights of use and occupancy shall be for not more than twenty-five years or for a term ending at the death of the owner or his or her spouse, whichever is later. The owner shall reserve such rights and elect the term to be reserved on the date of acquisition of the property. Except for so much of the property as is donated, the Secretary shall pay to the owner the fair market value of the property on the date of its acquisition, less the fair market value on that date of the right retained by the owner.

Use and occupancy rights, retention.

Fair market value.

(3) A right of use and occupancy retained pursuant to paragraph (2) may be terminated by the Secretary upon his determination that the property or any portion thereof is being used in a manner which is incompatible with the purposes of this section. Such right shall terminate by operation of law upon notification by the Secretary to the holder of the right of such determination and tendering to him the amount equal to the fair market value of that portion which remains unexpired as of the date of such tender. In the case of any property which was used for noncommercial purposes during the ten calendar years immediately preceding the enactment of this Act, the commercial use of such property subsequent to the enactment of this Act shall be treated as incompatible with the purposes of this section. In the case of any property which was used for commercial purposes at any time during the ten calendar years immediately preceding the enactment of this Act, any substantial change or expansion of such commercial use subsequent to the enactment of this Act without the express approval of the Secretary shall be treated as incompatible with such purposes.

Termination, notification.

(4) In exercising his authority to acquire property under this section, the Secretary shall give prompt and careful consideration to any offer made by an individual owning property within the park to sell such property if such individual notifies the Secretary that the continued ownership of such property is causing, or would result in, undue hardship. Nothing in this section, or in any other provision of law, shall prevent the Secretary from exercising his authority to acquire property referred to in this subsection at any time after the date of the enactment of this Act.

(5) If any individual tract or parcel of land acquired is partly inside and partly outside the boundaries of the park the Secretary may, in order to minimize the payment of severance damages, acquire the whole of the tract or parcel.

Area acquisition.

(6) If the management plan prepared under subsection (e) provides for improved access to the area added to the park under this section, the Secretary is authorized to acquire, by donation, purchase with donated or appropriated funds, exchange or transfer from other Federal departments or agencies, the area comprising the road from State Route 198 to, and within, the Mineral King Valley together with a right-of-way for such road of a width sufficient to include improvements to the road and all bridges, ditches, cuts, and fills appurtenant thereto, but not exceeding a maximum average width of two hundred feet. Property acquired from the State or any political subdivision thereof may be acquired by donation only. With regard to routes of access to and within the Mineral King Valley, the Secretary shall take such measures as are necessary to protect against the effects of siltation on the ecosystem of the park.

Report to congressional committees.

(7) The Secretary shall report to the committees of the Congress named in subsection (b)(1) the action taken by him pursuant to this subsection. Such report shall contain information sufficient to inform such committees of—

(A) the acquisitions made by him pursuant to this subsection during the period covered by such report;

(B) his reasons why all of such property authorized to be acquired and not so acquired as of the date of such report, if any, have not been acquired; and

(C) his schedule of a timetable for the acquisition of such property referred to in subparagraph (B).

Such report shall be submitted before the expiration of the second fiscal year beginning after the date on which the comprehensive management plan is submitted to the committees of Congress pursuant to subsection (e).

Administration.

(d)(1) The area added to the park by this section shall be administered in accordance with this section and the provisions of law generally applicable to units of the National Park System including the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. and following) and the Act of September 25, 1890 (26 Stat. 478; 16 U.S.C. 41 and following). Any other statutory authority available to the Secretary for the conservation and management of wildlife, wildlife habitat, and natural resources may be utilized to the extent he finds such authority will further the purposes of this section.

(2)(A) Except in the case of a lease or permit which the Secretary determines to be incompatible with the administration of the park pursuant to this section, any lease or permit on Federal land within the area added to the park under this section which is in effect immediately before the enactment of this Act shall continue in effect pursuant to its terms and conditions following the expansion of the park under this section.

Leases or permits, renewals or extensions, review.

(B) In the case of a lease or permit which is continued under subparagraph (A), upon notice to the Secretary by the lessee or permittee of his intention to seek renewal or extension of such lease or permit, the lease or permit shall be reviewed by the Secretary, and may be renewed or extended for an additional period of five years. Any such lease or permit shall be reviewed at the end of such renewal or extension period and may also be renewed or extended in the same manner for additional five-year periods thereafter. Any renewals or extensions of leases or permits shall be granted only to those persons who were

lessees or permittees of record on the date of enactment of this Act, and any such lease or permit shall provide that the lease or permit may be terminated by the Secretary at any time if the Secretary determines that such lease or permit is incompatible with the administration of the park pursuant to this section or that the land is needed for park purposes.

(3) The Act of December 14, 1974 (88 Stat. 1660) is amended by inserting the following new section after section 4:

16 USC 45a-1 note.

"SEC. 5. Notwithstanding any other provision of law, any federally owned lands incorporated within the boundaries of Sequoia National Park subsequent to the date of enactment of this Act, which entail project works, developments, lands, or facilities which are components of Federal Power Commission Project Numbered 298, shall be subject to all provisions of this Act.".

Comprehensive management, plan, submittal to congressional committees. 16 USC 45f.

(e)(1) Within two years from the date of enactment of this Act, the Secretary, in cooperation with the State of California, shall develop and submit to the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, a comprehensive management plan for the area added to the park under this section. In the preparation of such plan, the Secretary shall give appropriate consideration to the need for the development of additional recreational opportunities and other public uses which are consistent with sound environmental management of the area and the policies of the National Park Service.

Public participation.

(2)(A) In preparing the comprehensive management plan required by this subsection and in preparing any subsequent revision of such plan, the Secretary shall provide for full public participation and shall consider the comments and views of all interested agencies, organizations, and individuals.

Advance notice, publication in Federal Register and newspapers.

(B) For purposes of insuring such full public participation, the Secretary shall provide reasonable advance notice to State and local governments, interested Federal agencies, private organizations, and the general public of hearings, workshops, meetings, and other opportunities available for such participation. Such notice shall be published in newspapers of general circulation in the localities affected by the development and management of the park, published in the Federal Register, and communicated by other appropriate means. The Western Regional Advisory Committee of the National Park Service (or a subcommittee thereof) shall also be utilized for purposes of facilitating public involvement.

Cooperation.

(C) The Secretaries or Directors of all Federal departments, agencies, and commissions having a relevant expertise are hereby authorized and directed to cooperate with the Secretary in his development of such plan and to make such studies as the Secretary may request on a cost reimbursable basis.

Consultation.

(D) In preparing the comprehensive management plan required by this subsection, the Secretary shall consider technical information and other pertinent data assembled or produced by field studies or investigations conducted separately or jointly by the technical and administrative personnel of the Federal and State agencies involved in order to insure the permanent conservation of wildlife within the area added to the park by this section. Except in emergencies, rules and regulations pertaining to the management of wildlife within the area added to the park by this section shall be put into effect only after consultation with the State of California.

(f) There are hereby authorized to be appropriated such sums as may be necessary for the acquisition of land and interests therein described in this section.

Appropriation authorization.

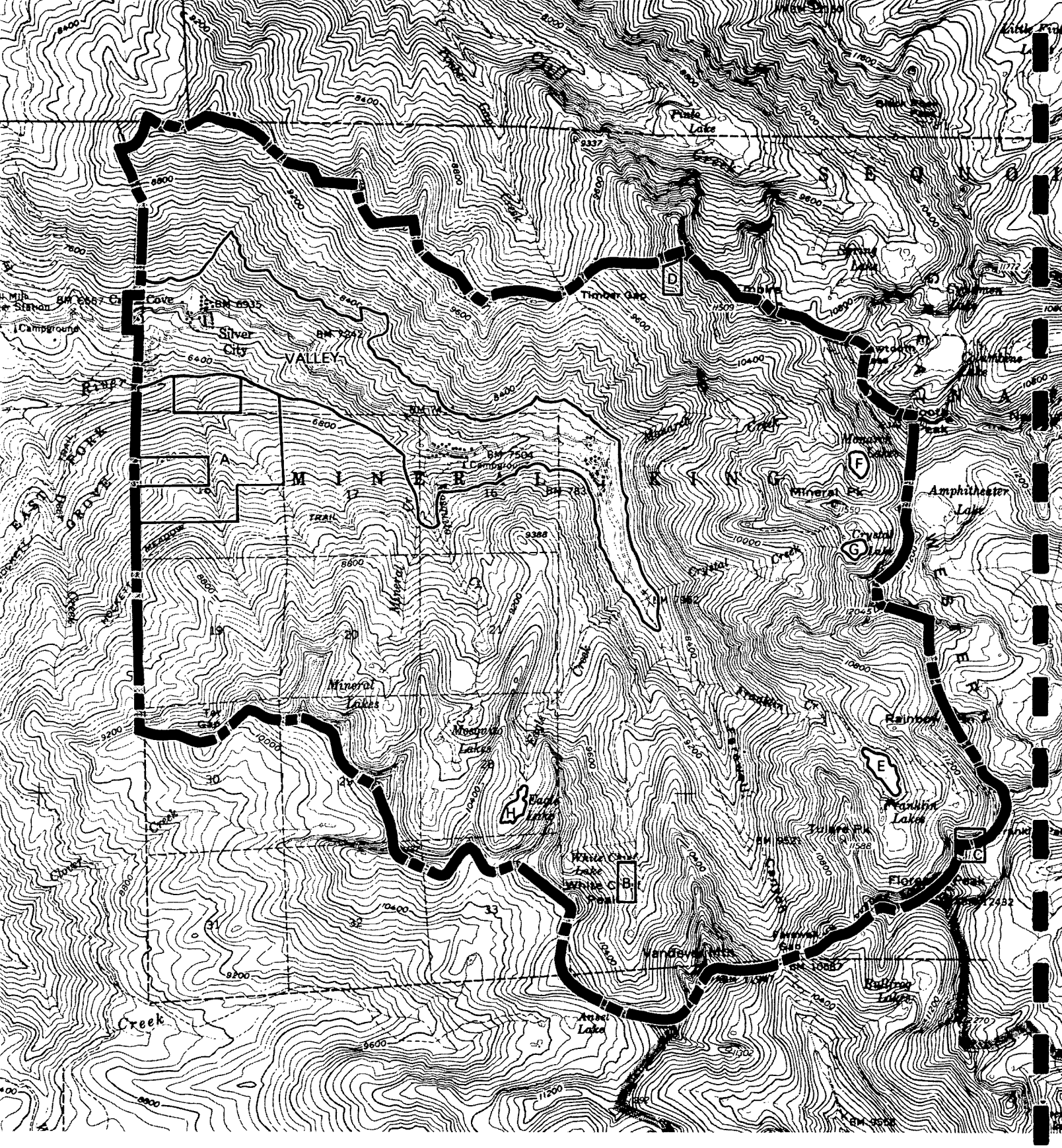
(g) Effective upon the transfer referred to in subsection (b)(2), Public Law 85-648 (72 Stat. 604; 16 U.S.C. 45a-3) and section 6 of the Act of July 3, 1926 (44 Stat. 821; 16 U.S.C. 688) are hereby repealed. The repeal of such section 6 shall not be construed to prohibit or prevent the Secretary from exercising any authority applicable to the national parks respecting the protection of birds, game, or other wild animals.

Repeals.
16 USC 688 note.

(h) The Congress recognizes that the Mineral King Valley area has outstanding potential for certain year-round recreational opportunities, but the development of permanent facilities for downhill skiing within the area would be inconsistent with the preservation and enhancement of its ecological values.

Skiing.
16 USC 45f.

APPENDIX B: WILDERNESS MAP



WILDERNESS	PWA		EXCLUSION	
	A	420	E	36
	B	21	F	21
	C	40	G	15
	D	17	H	28
			VALLEY	1,565
TOTAL 14,078		498		1,665

WILDERNESS

MINERAL KING

SEQUOIA / KINGS CANYON NATIONAL PARKS / CALIFORNIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

102	20023
DSC	APR 80

NORTH

0 1 Kilometers

0 1 Miles

APPENDIX C: AIR QUALITY DATA

CARBON MONOXIDE LEVELS EXPECTED FROM PROJECTED INCREASE IN TRAFFIC ON MINERAL KING ROAD

Measurements of carbon monoxide (CO) concentrations during 1974 and 1975 taken at Hammond and Oak Grove indicated that CO levels were below instrument detectability (USDA 1976). The traffic volumes were apparently too small to contribute measureable amounts of ambient CO. The traffic counts taken at Lookout Point from 1974 through July of 1979 are provided in table B-1 to compare the traffic counts from more recent years to those of 1974 and 1975.

Table B-1. Monthly traffic counts taken at Lookout Point

Month	1974	1975	1976	1977	1978	1979
January	147	121	224	191	83	112
February	90	134	296	192	128	92
March	55	204	171	202	184	126
April	110	214	153	481	175	333
May	647	593	1,436	644	854	741
June	1,645	972	3,012	1,574	1,985	1,291
July	1,791	2,745	3,685	1,564	3,394	2,316
August	2,473	3,452	3,002	824	3,651	
September	2,094	1,996	2,310	1,682	2,376	
October	1,056	470	871	949	1,300	
November	241	818	287	478	537	
December	257	317	855	241	262	
TOTAL	10,606	12,036	16,302	9,022	14,929	

The monthly totals shown in table B-1, however, cannot be realistically redistributed to recover average daily traffic or peak hourly counts since traffic flows are clearly non-uniform. Fortunately, the California Air Resources Board has made some traffic counts on Mineral King Road. The highest daily traffic count during the measurement period was 1,234 vehicles, with a peak hourly count of 290 vehicles. These values were recorded in 1976, a year which exhibited monthly traffic volumes comparable to 1978 and greater than counts made through July of 1979 (table B-1). The maximum hourly count of 290 occurred on a Sunday afternoon in July, and this value was used in the analysis to obtain

the highest estimate of CO concentration under traffic levels comparable to those existing currently. Estimated CO impact from projected traffic levels in Alternative D was also analyzed assuming the traffic flow would be twice as high as the maximum existing count.

Estimates of carbon monoxide concentrations were made using the procedures in Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised): Evaluating Indirect Sources (U.S. EPA, 1978). The estimates derived from these procedures are shown in table B-2 along with the federal and state of California maximum one hour carbon monoxide standards.

Table B-2. Estimated carbon monoxide levels and applicable ambient air quality standards. Concentrations in parts per million (ppm).

290 vehicles	580 vehicles	Maximum one hour CO standards	
		Federal	California
0.90	1.80	35	35

In summary, table B-2 shows that carbon monoxide concentrations are expected to be only about 2.6 percent of the 35 ppm standard under current traffic levels, and only about 5.1 percent of the 35 ppm standard if traffic levels were to double.

BIBLIOGRAPHY

BARBOUR, MICHAEL Y., AND MAJOR, JACK, EDS.
1977 Terrestrial Vegetation of California. New York: John Unley and Sons.

BENNYHOFF, J.A.
1953 "High Altitude Occupation in the Yosemite Park Region." Some Archaeological Sites and Cultures of the Central Sierra Nevada. Vol. 21 of Reports of the University of California Archaeological Survey. Berkeley: University of California Press.

CALIFORNIA DEPARTMENT OF FISH AND GAME
1979 "Future Management of Mineral King Deer Herd." Memorandum from G. D. Nokes to Superintendent, Sequoia-Kings Canyon National Parks. July 20, 1979.

CALIFORNIA DEPARTMENT OF WATER RESOURCES
1970 "Mineral King Area Baseline Water Quality Identification." San Joaquin District.

CHRISTENSEN, H.M.
1963 "Structure of Stratigraphic Rocks at Mineral King California." University of California Publications in Geologic Sciences 42(4):159-98. Berkeley: University of California Press.

ELSASSER, ALBERT B.
1959 "Archaeological Survey of Sequoia-Kings Canyon National Parks." Report prepared for the National Park Service.

1960 The Archaeology of the Sierra Nevada in California and Nevada. Vol. 51 of Reports of the University of California Archaeological Survey. Berkeley: University of California Press.

GAYTON, A.H.
1948 Yokuts and Western Mono Ethnography. Vol. 2 of Anthropological Records. Berkeley: University of California Press.

LACHAPELLE, E.R.
1970 The ABC of Avalanche Safety. Denver: Colorado Outdoor Sports Co.

LONGHURST, WILLIAM M.
1978 "Evaluation of the Potential Impact of Proposed Recreation Development on the Mineral King Deer Herd." Report prepared for the U.S. Forest Service. On File in Sequoia National Park.

PORTER, SAMUEL T.
1966 The Silver Rush at Mineral King, California, 1873-1882. Privately printed. Copy available at the National Park Service Western Archeological Center, Tucson, AZ.

SCHNEEGAS, E.R., AND FRANKLIN, G.W.
1972 "The Mineral King Deer Herd." California Fish and Game 58(2):133-40.

STEWARD, JULIAN H.
1935 Indian Tribes of Sequoia National Park Region. Berkeley: University of California Press.

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE (USFS)
1970 "Soil-Vegetation Survey Report, Mineral King Area," by Gerald L. Anderson. Sequoia National Forest, Tule River Ranger District.

1971a "The Water Resource," by J.G. Troyer. Sequoia National Forest, Porterville, CA.

1971b "Water Quality of Mineral King Lakes." Sequoia National Forest, Tule River Ranger District.

1976a "Final Environmental Statement, Mineral King Recreation Development." San Francisco Regional Office.

1976b Tulare County Area General Plan.

U.S. DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY (USGS)
1971 "Water Quality and Quantity Data, East Fork Kaweah River Basin, California, 1969." Menlo Park, CA.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE (USNPS)
1971 "Archaeological Resources of the Mineral King District," by C.H. Jennings and P. Kisling. Western Archeological Center, Tucson, AZ.

1975 "An Archaeological Survey of the Mineral King Road Corridor," by Mary T. Morehead. Western Archeological Center, Tucson, AZ.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE (USNPS)

1977 Feasibility Report, Mineral King, California. Western Regional Office, San Francisco.

1979a "Mineral King Access Road--Special Report Field Study." Sequoia National Park.

1979b "A Cultural Resources Survey of Mineral King, Sequoia-Kings Canyon National Parks," by Kathryn Kamp and John Whittaker. Western Archeological Center, Tucson, AZ.

1979c "Evaluation of Mineral King Deer Herd and Range Conditions," by Robert Simerly. Sequoia National Park.

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA)

1978 Guidelines for Air Quality Maintenance Planning and Analysis. Vol. 9: Evaluating Indirect Sources. Revised ed.

WERLHOF, JAY C.

1961 "Aboriginal Trails of the Kaweah Basin." Report submitted to Paul Schumacher, Regional Archeologist, Western Region, National Park Service, San Francisco.

LIST OF PREPARERS

Terry Goodrich, Environmental Specialist, Denver Service Center. Responsible for impact assessment. B.S., Biology, Central Michigan University

John Herron, Cultural Anthropologist, Denver Service Center. Coordinated treaty search and compilation of documents related to Native Americans in the Sequoia and Kings Canyon region. B.A., Prescott College, Graduate Studies University of Kansas and University of Colorado at Denver in Anthropology

Leslie Starr Hart, Cultural Resources Management Specialist, Denver Service Center. Coordination and synthesis of historical, architectural, archeological, and ethnographic data. Responsible for project compliance with historic preservation. B.A., History, California State University, Fresno; M.F.A., University of Colorado

Henry Jones, Management Assistant, Sequoia and Kings Canyon National Parks. Responsible for the public involvement program and consultation with agencies and interested parties. B.A., Geography, Eastern Washington State College

Bill Koning, Project Manager, Denver Service Center. Coordinated planning effort in the park. Responsible for impact assessment on the socioeconomic environment. Analyzed public response throughout the project. A.B., Economics, Youngstown State University.

Joanne Michalovic, Environmental Specialist, Denver Service Center. Responsible for description of the affected natural environment and assisted in the preparation of alternative strategies. B.S., Environmental Science, Long Island University; M.S., Environmental Science, Washington State University.

John Ochsner, Landscape Architect, Denver Service Center. Responsible for the generation of alternative strategies. Responsible for site analysis and development concepts. M.L.A., University of Michigan.

Don Tiernan, Ecologist, Denver Service Center. Coordinated input and analysis of the environmental document. Assisted in the generation of alternative strategies. M.F.S., Yale University School of Forestry and Environmental Studies.

William Tweed, Interpreter, Historian, Sequoia and Kings Canyon National Parks. Cultural Resources Specialist. Conducted cultural resources overview, provided interpretive principles, and assisted in generation of alternative strategies. PhD., History, Texas Christian University.

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, and parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics staff of the Denver Service Center. NPS 1615

☆ U.S. GOVERNMENT PRINTING OFFICE: 1980—677-120/25