



Giant Sequoia National Monument

Wildlife Biological Assessment

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Summary

Final Biological Assessment

Giant Sequoia National Monument Management Plan

Fresno, Tulare, and Kern Counties
 Sequoia National Forest, Giant Sequoia National Monument

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 Date: 9 November 2011

Summary

This Biological Assessment covers programmatic effects of long-term management of the Giant Sequoia National Monument. Analysis of effects is tiered to the Sierra Nevada Forest Plan Amendment Published January 2001. Species addressed and effects are as follows:

Species	Status	Determination
California condor (<i>Gymnogyps californianus</i>)	FE, CH	All Alternatives of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement “may affect, are not likely to adversely affect” California condors.
Valley elderberry longhorn beetle (<i>Desmocercus californicus dimorphus</i>)	FT	All Alternatives of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement “may affect, are not likely to adversely affect” Valley elderberry longhorn beetles.
Little Kern golden trout (<i>Oncorhynchus mykiss whitei</i>)	FT, CH	All Alternatives of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement “may affect, and are likely to adversely affect” Little Kern golden trout.

FE=Federally Endangered; FT=Federally Threatened; CH=Designated Critical Habitat

Introduction

This Biological Assessment (BA) documents analysis of programmatic direction (long-term goal and objective based management) rather than individual projects under the Giant Sequoia National Monument Management Plan (Monument Plan) Final Environmental Impact Statement (FEIS). A determination is made on potential effects to wildlife species listed as Threatened, Endangered, or Proposed for listing (Listed species) under the Endangered Species Act (ESA) by the U.S. Department of Interior,

Fish and Wildlife Service (USFWS). USFWS species of concern, candidates for listing under the ESA and Forest Service Sensitive species are covered in a separate document (Biological Evaluation [BE] for the Monument Plan FEIS).

This BA was prepared in accordance with Forest Service Manual (FSM) direction 2672.42, and meets legal requirements under Section 7 of the Endangered Species Act of 1973, as amended, and implements regulations [19 U.S.C. 1536 (c), 50 CFR 402.12 (f) and 402.14 (c)]. The BA provides a process through which federally listed species under the Endangered

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Species Act receive full consideration in the decision making process. Species that were evaluated are shown in Table 81.

Table 86 Threatened, Endangered, and Proposed Wildlife Species, Giant Sequoia National Monument (Report Date: 6/15/2011, updated by USFWS 4/29/2010)

Common Name (Scientific Name)	Listing Status	Habitat Requirements	Potential for Occurrence in the Monument	Analyzed in Detail in the BA?
Tipton kangaroo rat (<i>Dipodomys nitratoides</i>)	FE	Alkali sinks and valley floor habitat.	Unlikely, no suitable habitat.	No, outside known historic range.
California bighorn sheep (<i>Ovis canadensis californiana</i>)	FE	Rugged mountain areas, mostly eastern Sierra with small historic range on western edge of Kern drainage.	Unlikely, no historic range in the Monument.	No, outside known historic range.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	FE	Valley floor annual grassland, alkali washes generally below 1,000 feet.	Unlikely, no historic records. Monument above known range.	No, outside known range.
SW willow flycatcher (<i>Empidonax trailii extimus</i>)	FE	Riparian forest and meadow with dense willow habitat and standing water.	Only known to occur at Lake Isabella, outside of the Monument.	No, outside known range.
California condor (<i>Gymnogyps californianus</i>)	FE, CH	Mountain and foothill rangeland and forest habitats; nests on cliffs and in very large trees.	Designated roost areas, critical habitat, nest area and potential nest trees identified in the Monument.	Yes
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE	Riparian forest.	Unlikely, historic to Kern Valley, recent incidental detections limited to South Fork Wildlife Area.	No, no current or historic detections.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	FE	Open grassland, valley floor below 1,000 feet.	Unlikely, no historic populations in near proximity.	No, outside known range.
Giant garter snake (<i>Thamnophis gigas</i>)	FT	Valley floor aquatic habitats.	Unlikely, outside known range.	No, outside known range.
California red-legged frog (<i>Rana aurora draytonii</i>)	FT	Low gradient streams and ponds with emergent vegetation.	Unlikely, only one verified historic occurrence in 1926 adjacent to the Monument, and no detections since. Most streams high gradient and high spring flow.	No, outside known range.
California tiger salamander (<i>Ambystoma californiense</i>)	FT	Annual grassland and grassy understory of valley-foothill hardwoods. Spend most of the year underground. Breed in vernal pools, some human-made ponds without fish, not in streams <1,000 feet.	Small area along the Kings River is within CWHR range. No detections in the Monument.	No, no known populations in the Monument.

Common Name (Scientific Name)	Listing Status	Habitat Requirements	Potential for Occurrence in the Monument	Analyzed in Detail in the BA?
Delta smelt (<i>Hypomesus transpacificus</i>)	FT	Limited to San Joaquin/Sacramento Delta.	None. No outlet from the Monument to the Delta	No, outside known range.
Little Kern golden trout (<i>Oncorhynchus mykiss whitei</i>)	FT, CH	Native to cold water streams in Little Kern drainage.	Approximately 4,500 acres of Critical Habitat in the Monument.	Yes.
Vernal pool fairy shrimp (<i>Branhinecta lynchi</i>)	FT	Valley floor annual grassland, alkali washes generally below 1,000 feet.	Unlikely, outside known range.	No, outside known range.

2.0 Consultation to Date

The species list for the Sequoia National Forest is based on the official list received from the U.S. Fish and Wildlife Service Sacramento Field Office (http://sacramento.fws.gov/es/spp_lists/NFActionPage.cfm). The version used as a reference for this document was dated April 29, 2010. The California Department of Fish and Game's (CDFG) California Natural Diversity Data Base (CNDDDB) (June 2011 update) was reviewed for additional species information as well as Forest and district level data on detections of wildlife and fish.

Informal consultation on the Monument Plan began with a request for comment to the Notice of Intent, sent to the Fish and Wildlife Service in March of 2009. An informal meeting between Forest and USFWS biologists on the Monument planning effort was held in February 2010. Copies of the Monument Plan Draft Environmental Impact Statement and Draft Management Plan were delivered for comment to the U.S. Fish and Wildlife Service office in Sacramento by the Forest Supervisor in August 2010. Comments on the DEIS and Draft Biological Assessment were received from the Forest & Foothills Branch of the USFWS in January 2011.

Consultation for Little Kern golden trout and critical habitat was initiated for grazing and recreation in 1993 and revised in 1994 with a new biological opinion issued at that time.

Consultation for California condor has been ongoing, on a project-by-project basis, since listing in 1984. The Ventura USFWS office has been the primary contact for the California condor.

Consultation for Valley Elderberry beetle has been ongoing, primarily related to chaparral burning and maintenance of facilities.

Fifteen federally listed animal species were identified in the species list for the Sequoia National Forest, covering portions of Fresno, Tulare and Kern counties. The following federally-listed species were determined to have a reasonable probability of occurring within the Monument, and may be affected as a result of programmatic direction for the Monument: California condor (*Gymnogyps californianus*), Valley Elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Little Kern golden trout (*Oncorhynchus mykiss whitei*).

Current Management Direction

3.0 Current Management Direction

3.1 Management Documents

Current management direction and desired conditions for Threatened, Endangered and Sensitive species on the Sequoia National Forest can be found in the following documents, filed at the Supervisor's Office and available online:

- Forest Service Manual and Handbooks (FSM/H2670)
- National Forest Management Act (NFMA)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA)

- 1988 Sequoia National Forest Land and Resource Management Plan (LRMP)
- 1990 Mediated Settlement Agreement (MSA) to the Sequoia LRMP
- 2000 Presidential proclamation establishing the Giant Sequoia National Monument (proclamation)
- 2001 Sierra Nevada Forest Plan Amendment (SNFPA) and Record of Decision (SNFPA ROD)
- Species-specific Recovery plans
- Species management guides or conservation strategies
- Regional Forester policy and management direction

Species-specific direction is described in Section 5.0 of this document. The Sequoia LRMP and amendments incorporate Regional direction for each species.

3.2 Forest Service Manuals

General Forest Service direction for listed species is summarized below.

FSM 2670.31 Threatened and Endangered Species

Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System, State and Private Forestry, and Research activities and programs.

Establish through the Forest planning process objectives for habitat management and/or recovery of populations, in cooperation with States, the U.S. Fish and Wildlife Service, and other Federal agencies.

Through the biological evaluation process, review actions and programs authorized, funded, or carried out by the Forest Service to determine their potential for effect on threatened and endangered species and species proposed for listing.

Avoid all adverse impacts to threatened and endangered species and their habitat except when it is possible to compensate adverse effect totally through alternatives identified in a biological opinion rendered by the USFWS; when an exemption has been granted

under the act; or when the USFWS biological opinion recognizes an incidental taking. Avoid adverse impacts on species proposed for listing during the conference period and while their Federal status is being determined.

Initiate consultation or conference with the USFWS when the Forest Service determines that proposed activities may have an adverse effect on threatened, endangered, or proposed species or when Forest Service projects are for the specific benefit of a threatened or endangered species

Identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of threatened, endangered, and proposed species. Protect individual organisms or populations from harm or harassment as appropriate.

3.3 Local Management Direction

Four documents provide the most current and applicable requirements pertinent to this project:

- 1988 Sequoia National Forest Land and Resource Management Plan (LRMP)
- 1990 Mediated Settlement Agreement (MSA)
- 2000 Presidential Proclamation establishing the Giant Sequoia National Monument (Proclamation)
- 2001 Sierra Nevada Forest Plan Amendment (SNFPA)

Description of Proposal

4.0 Description of the Alternatives

Below is a description of elements of the six alternatives in the Monument Plan FEIS considered important to wildlife and wildlife habitat. A complete description of the Alternatives can be found in Chapter 2 of the Monument Plan FEIS.

Common to All Alternatives

Lands in the Monument continue to provide a diverse range of habitats, with special emphasis on riparian areas, montane meadows, and late successional

forest. Proper hydrologic and ecological functioning conditions in riparian areas and meadows are restored and maintained. Old forest habitat is in suitable quality, quantity, and distribution to support viable populations of late successional dependent species, including Pacific fishers, American martens, California spotted owls, northern goshawks, and great gray owls. The configuration of habitat in the Monument provides connectivity and heterogeneity. Ecological conditions in the Monument contribute to the recovery of federally threatened and endangered species such as the California condor and Springville clarkia, and help avoid federal listing of Forest Service sensitive species.

California Condor Management

Continue to manage California condors under the most current U. S. Fish and Wildlife Service California Condor Recovery Plan, including identifying historic use areas, such as the Starvation Grove historic nest site and the Lion Ridge roost area.

Contribute to the recovery of the California condor by protecting roosting sites and potential nesting sites.

Alternative A—(No Action—Current Management)

Current management direction for the Monument comes from several sources:

- 1988 Sequoia National Forest Land and Resource Management Plan (Forest Plan)
- 1990 Sequoia National Forest Land Management Plan Mediated Settlement Agreement (MSA)
- 1991 Kings River Wild and Scenic River and Special Management Area Implementation Plan (KRSMA)
- 2000 Presidential proclamation establishing the Monument (proclamation)
- 2001 Sierra Nevada Forest Plan Amendment (2001 SNFPA)

There are a number of standards and guidelines associated with the existing management goals and objectives and land allocations from the 1988 Forest Plan, the 1990 MSA, the proclamation, and the 2001 SNFPA.

The current management of the Monument includes a number of land allocations from the 2001 SNFPA for wildlife protection including: Southern Sierra Fisher Conservation Area (SSFCA), old forest emphasis areas, den site buffers for fisher and American marten, and protected activity centers (PACs) for California spotted owl, northern goshawks, and great gray owls. It also requires habitat protection for meadows occupied by little willow flycatchers. Riparian Conservation Areas (RCAs) and Critical Aquatic Refuges (CARs) guidelines follow the 2001 SNFPA and also provide protection for important wildlife habitat.

Alternative B (Preferred Alternative)

Alternative B includes the proposed action, and was developed to identify the changes to current management direction needed to comply with the Clinton proclamation. Alternative B includes strategies that are responsive to the issues of recreation and public use, fuels management/ community protection, and fires spreading to tribal lands. For Alternative B, a full range of recreation opportunities, including dispersed camping, developed camping, and the use of off-highway vehicles (OHVs) on designated roads would continue.

Protection of Objects of Interest

Alternative B would retain all of the land allocations and standards and guidelines from the 2001 SNFPA, except where noted as changed to better protect the objects of interest. For Alternative B, the Freeman Creek Grove would be designated as a botanical area, as prescribed by the 1990 MSA (MSA, p. 17). Alternative B includes multiple tools for decreasing fuel buildups and reducing the risk of uncharacteristically large-scale wildfire, which may threaten the objects of interest.

Promotion of Resiliency

Alternative B is expected to promote resilient vegetation communities through the use of prescribed fire, mechanical treatment, and managed wildfire (when available), in order of priority. Vegetation management projects for ecological restoration and maintenance would consider using prescribed fire first and be focused in the wildland urban intermix

(WUI) defense and threat zones, with diameter limits throughout the Monument.

Alternative B allows tree cutting for fuels management and ecological restoration. No trees with a diameter greater than 20 inches dbh may be cut, except for safety issues.

Promotion of Heterogeneity

Alternative B was designed to improve heterogeneity through the use of multiple tools for ecological restoration and maintenance. It would use these tools to reduce fuels, encourage natural regeneration, and increase the diversity in species composition and age.

Recreation Opportunities

Alternative B would continue to provide current recreation opportunities, with a focus on the development of new recreation facilities or opportunities as visitor use increases.

Vegetation, Including Giant Sequoia Groves

For Alternative B, ecological restoration of forested ecosystems would be accomplished by reducing fuels, improving stand resilience and health, promoting heterogeneity, and encouraging natural regeneration of giant sequoias and other species. In areas where natural regeneration is not likely, planting would occur. Resiliency would be improved by using prescribed fire, mechanical treatment, and managed wildfire (when available).

Fire and Fuels

Alternative B uses a WUI defense zone that extends approximately one-quarter mile from developed private land, and a WUI threat zone that extends another one and one-quarter mile from the defense zone. Designated WUI defense zones would cover 45,342 acres (13 percent) of the Monument and threat zones 145,522 acres (41 percent) of the Monument.

Alternative B includes the 56,591 acre Tribal Fuels Emphasis Treatment Area (TFETA). The TFETA was developed in response to discussions with the Tule River Indian Tribe and the concern over fires spreading to tribal lands. The Tribal Forest Protection Act of 2004 authorizes the Forest Service to enter into an agreement with Indian tribes meeting certain criteria to carry out projects to protect Indian forest

land. This land allocation was designed along the boundary with the Tule River Indian Reservation to not only protect the reservation and its watersheds, but also the objects of interest and watersheds in the Monument, from fires spreading from one to the other.

Wildlife and Plant Habitat

Alternative B would replace the 2001 SNFPA standards and guidelines for great gray owl and little willow flycatcher habitat with standards based on the 2004 SNFPA. The 2004 SNFPA includes management direction for these species that is adaptable to local site conditions, while carrying forward the protection measures set in place by the 2001 SNFPA.

Range

For Alternative B, standards and guidelines for livestock grazing from the 2004 SNFPA would replace the 2001 SNFPA direction. Some management direction from the 1988 Forest Plan and 1990 MSA would be used.

Hydrological Resources

Alternative B would replace the strategies, objectives, and standards and guidelines for the riparian conservation objectives (RCOs) from the 2001 SNFPA with management direction based on the 2004 SNFPA. The 2004 SNFPA reduces redundancy and describes more consistent direction for hydrological resources, while maintaining the intent of the Aquatic Management Strategy.

Transportation

For Alternative B, the majority of the currently designated road and trail system would be available for use, retaining access similar to current levels for dispersed recreation, private ownerships, and management activities. There would be the potential for some reduction in high-clearance vehicle roads over time.

OHVs would be allowed on designated roads. Over-snow vehicles (OSVs) would be allowed on designated roads when covered with snow, unless specifically prohibited. Non-motorized mechanized vehicles (mountain bikes) would be allowed on designated roads and trails unless specifically prohibited. Alternative B emphasizes opportunities for creating loop trails and roads, with the potential for the construction of new roads for developed

recreation facilities and loop driving opportunities. Decommissioned roads could be converted to trails.

Alternative C

Alternative C was developed to manage the Monument similar to the Sequoia and Kings Canyon National Parks (SEKI) in a manner that is consistent with Forest Service regulations and the direction of the Clinton proclamation. Some management policies or direction from SEKI would not be applicable to the Monument because of differences in law, regulation, and policy for the two federal agencies. For Alternative C, restoration activities would focus on areas that have been affected by human use and occupation. Recreation opportunity management would be similar to SEKI management.

Protection of Objects of Interest

Alternative C would not use many of the land allocations associated with the 2001 SNFPA, nor the standards and guidelines associated with them, such as those for wildlife and plant habitat. New standards and guidelines would be used throughout the Monument, rather than in specific land allocations. No new special areas are proposed, because the entire Monument would be considered a special area. Alternative C would limit vegetation and fuels management to areas of human use and influence. To address fuels buildup, Alternative C relies primarily on prescribed fire and managed wildfire, and limits the use of mechanical treatments.

Promotion of Resiliency

Alternative C would allow natural processes to prevail, focusing on the resumption of natural processes in areas altered by human use. It is expected to promote resilient vegetation communities through the use of prescribed fire and managed wildfire (when available), and limited mechanical treatment, in order of priority. Alternative C would limit the tools used for ecological restoration and maintenance. It would focus necessary treatments in the WUI defense zones, with diameter limits for fuels reduction, fire protection, and giant sequoias throughout the Monument.

Promotion of Heterogeneity

Alternative C was designed to promote heterogeneity primarily through the use of prescribed burns and

managed wildfire (when available). It would focus on the use of natural processes to reduce fuels, encourage natural regeneration, and increase the diversity in species composition and age, limiting treatments to areas of human use.

Recreation Opportunities

Alternative C would change the current recreation opportunities by focusing on developed recreation sites and concentrating new development in recreation opportunity areas.

Vegetation, Including Giant Sequoia Groves

For Alternative C, ecological restoration of forested ecosystems would be accomplished by reducing fuels, improving stand resilience and health, promoting heterogeneity, and encouraging natural regeneration of giant sequoias and other species. In areas where natural regeneration is not likely, planting would be used. Resiliency would be promoted by using prescribed fire and managed wildfire (when available) first, and mechanical treatment only as necessary.

Fire and Fuels

Alternative C uses a WUI defense zone that extends approximately 300 feet out from developed private land. No WUI threat zone is defined. Developed recreation sites and administrative sites would also have 300-foot buffers for fuels management. In Alternative C, WUI defense zones would only cover approximately 8,304 acres or 2 percent of the Monument.

Generally, any mechanical treatments for fuels reduction would only be considered in visually-sensitive buffer zones (WUI defense) around areas of concentrated human use.

Wildlife and Plant Habitat

Alternative C would not use any of the land allocations or management areas specific to wildlife and plant habitat from the 2001 SNFPA or 1988 Forest Plan.

Alternative C would replace the 2001 SNFPA standards and guidelines for great gray owl and little willow flycatcher habitat with standards based on the 2004 SNFPA. Some of the standards and guidelines for wildlife and plant habitat (such as those for limited

operating periods) would be used throughout the Monument, rather than being tied to a specific land allocation.

Range

For Alternative C, standards and guidelines for livestock grazing from the 2004 SNFPA would replace the 2001 SNFPA direction. Some management direction from the 1988 Forest Plan and 1990 MSA would be used.

Hydrological Resources

Alternative C would replace the strategies, objectives, and standards and guidelines for the RCOs from the 2001 SNFPA with management direction based on the 2004 SNFPA. Streamside management zones (SMZs) would be used to protect riparian areas, rather than the CARs, RCAs, and the associated RCOs.

Human Use

In Alternative C, dispersed camping would no longer be allowed at the end of roads or along roadsides. Dispersed camping would be allowed only by permit in the Wildlands niche setting, in inventoried roadless areas, and portions of the KRSMA. Target shooting would not be allowed. Other forms of dispersed recreation (e.g., hiking, birdwatching, fishing, picnicking) would be allowed.

Transportation

Under Alternative C, the majority of the currently designated roads maintained for passenger vehicle use would remain open to the public. Most of the roads for high-clearance vehicles would be closed over time due to a reduction in dispersed recreation, and would only be open for administrative use. Roads not needed for public access or management activities could be decommissioned, resulting in a substantial reduction in roads over time. Decommissioned roads could be converted to pedestrian trails. OHVs would not be allowed on roads, and OSVs would only be allowed on snow-covered roads to access private property, or for administrative and emergency use. Non-motorized mechanized vehicles (mountain bikes) would be allowed only on designated roads, not trails. Alternative C could include the construction of new roads for developed recreation facilities and loop driving opportunities.

Alternative D

Alternative D focuses on managing through natural processes with little to no human manipulation. It relies on naturally-occurring fire to reduce fuels, to protect the objects of interest, and to promote giant sequoia regeneration. Alternative D includes strategies that are responsive to the issues of tree removal, fuels management/community protection, and methods for sequoia regeneration. Dispersed and developed camping would still be available, although creation of new sites would be limited.

Protection of Objects of Interest

Alternative D focuses on allowing natural processes to restore and maintain ecosystems. To address fuels buildup, it would use primarily managed wildfire and prescribed fire, allowing mechanical treatment only under limited circumstances in the WUI defense zones.

Promotion of Resiliency

Alternative D would allow natural processes to prevail and focus on the resumption of natural processes in areas altered by human use. It is expected to promote resilient vegetation communities through the use of managed wildfire (when available), prescribed fire, and limited mechanical treatment, in order of priority. Alternative D would limit the tools used for ecological restoration and maintenance. It would focus necessary treatments in the WUI defense zones, with diameter limits for tree cutting.

Promotion of Heterogeneity

Alternative D was designed to promote heterogeneity primarily through the use of managed wildfire (when available) and prescribed burns. It would focus on the use of natural processes to reduce fuels, encourage natural regeneration, and increase the diversity in species composition and age, limiting treatments to areas of human use.

Recreation Opportunities

Alternative D would limit the development of new recreation sites to walk-in campgrounds and picnic areas near existing roads. Instead, developed recreation would be encouraged outside the Monument.

Vegetation, Including Giant Sequoia Groves

For Alternative D, ecological restoration of forested ecosystems would be accomplished by reducing fuels, improving stand resilience and health, promoting heterogeneity, and relying on natural regeneration of giant sequoias and other species. No planting or herbicides or pesticides would be used to promote regeneration. Resiliency would be promoted by using managed wildfire (when available), prescribed fire, and mechanical treatment only as necessary.

Fire and Fuels

Alternative D uses a WUI defense zone that extends approximately 200 feet out from developed private land. No WUI threat zone or TEFTA is included in Alternative D. WUI defense zones would only cover 4,603 acres or one percent of the Monument.

In Alternative D, mechanical treatments would be used to reduce fuels so that prescribed fire or managed wildfire could burn without harming the objects of interest. Any trees cut in the WUI defense zone would be kept on site. Tree cutting outside of the WUI defense zone would only be allowed to reduce risks to public and firefighter safety.

Wildlife and Plant Habitat

Alternative D includes most of the land allocations or management areas specific to wildlife and plant habitat from the 2001 SNFPA and 1988 Forest Plan, but not the old forest emphasis area and SSFCA allocations.

Alternative D would replace the 2001 SNFPA standards and guidelines for great gray owl and little willow flycatcher habitat with standards based on the 2004 SNFPA.

Range

Under Alternative D, standards and guidelines for livestock grazing from the 2004 SNFPA would replace the 2001 SNFPA direction. Some management direction from the 1988 Forest Plan and 1990 MSA would be used.

Hydrological Resources

Alternative D would replace the strategies, objectives, and standards and guidelines for the RCOs from the

2001 SNFPA with management direction based on the 2004 SNFPA.

Human Use

In Alternative D, dispersed camping would be allowed, but new development would be limited to walk-in campgrounds and picnic areas. No new non-recreation special uses would be permitted, except for scientific research, administrative needs, or nondiscretionary uses.

Transportation

For Alternative D, the majority of the currently designated roads maintained for passenger vehicle use would remain open to the public. Many of the roads for high-clearance vehicles and closed roads would be decommissioned over time due to a reduced need for access. Decommissioned roads could be converted to pedestrian trails. Roads would continue to be managed for dispersed recreation access. No new roads would be constructed. OHVs would not be allowed on roads, and OSVs would only be allowed on paved roads.

Not all roads and trails are expected to be designated for bicycles, including mountain bikes. Non-motorized mechanized vehicles (mountain bikes) would be allowed on designated roads and trails.

Alternative E

Alternative E was designed to manage the Monument as guided by the 1990 MSA. The 1990 MSA “remains in effect to the extent it has not been amended by other NEPA-compliant amendments” (*People of the State of California, ex rel. Lockyer v. United States Department of Agriculture, et al., No. C-05-00898 CRB*). Alternative E incorporates all appropriate 1990 MSA provisions. It includes current management direction from the 1988 Forest Plan and the 1990 MSA that was modified to comply with the Bush and Clinton proclamations. Alternative E includes strategies that are responsive to the issue of the obligation to analyze the 1990 MSA under NEPA, and is designed to meet that obligation to consider and analyze the actions, standards, and guidelines contained in the 1990 MSA.

Protection of Objects of Interest

Alternative E would not use many of the land allocations from the 2001 SNFPA, but would use those 1988 Forest Plan management areas and associated management emphases, and their related standards and guidelines, that comply with the Clinton proclamation. All provisions of the 1990 MSA that are appropriate for the Monument are incorporated. For Alternative E, the Freeman Creek Grove would be designated as a botanical area, as prescribed by the 1990 MSA (MSA, p. 17). In addition, a portion of the Moses Inventoried Roadless Area would be recommended to be included in the Wilderness System (MSA 1990, p. 70). Alternative E includes multiple tools for decreasing fuel buildups and reducing the risk of uncharacteristically large-scale wildfire, which may threaten the objects of interest.

Promotion of Resiliency

Alternative E is expected to promote resilient vegetation communities through the use of mechanical treatment, prescribed fire, and managed wildfire (when available), in order of priority. Vegetation management for ecological restoration and maintenance would consider using mechanical treatment first, to prepare for the use of fire, and be focused first in the WUI defense and threat zones. Diameter limits are set in the WUI zones, in the Spotted Owl Habitat Areas (SOHAs), and for giant sequoias throughout the Monument.

Promotion of Heterogeneity

Alternative E was designed to improve heterogeneity through the use of multiple tools for ecological restoration and maintenance. It would use these tools to reduce fuels, encourage natural regeneration, and increase the diversity in species composition and age.

Recreation Opportunities

Alternative E would continue to provide current recreation opportunities, with a focus on the development of new recreation facilities or opportunities. Alternative E includes vegetation management for old growth values in SOHAs, riparian zones, wilderness, giant sequoia groves, and other areas for wildlife and visual values (MSA, p. 51).

Vegetation, including Giant Sequoia Groves

The 1988 Forest Plan was designed to manage the majority of the forest for timber production (no longer applicable per the Clinton proclamation and 2001 SNFPA) and recreation use. The 1988 Forest Plan and subsequent 1990 MSA contained no diameter limits for tree cutting or removal, except for giant sequoias. For Alternative E, vegetation management direction would be shifted for Management Area “Conifer Forest (CF)” and the associated Management Emphasis “7 (emphasize production of sawtimber volume in conifer)” that covers much of the Monument. Prescription CF7 from the 1988 Forest Plan focuses on commercial forestry based on allowable sale quantity. Since the Clinton proclamation prohibits this type of commercial forestry in the Monument, this timber portion of Prescription CF7 is no longer applicable.

For Alternative E, ecological restoration of forested ecosystems would be accomplished by reducing fuels, improving stand resilience and health, promoting heterogeneity, and encouraging natural regeneration of giant sequoias and other species. In areas where natural regeneration is not likely, planting would occur. Resiliency would be promoted by using mechanical treatment, prescribed fire, and managed wildfire (when available).

Fire and Fuels

For Alternative E, the WUI defense and threat zones are the only land allocations included from the 2001 SNFPA. The 1990 MSA did not address the need to protect the objects of interest and the urban interface from wildfire. Alternative E uses a WUI defense zone that extends approximately one-quarter mile out from developed private land, and a WUI threat zone that extends another one and one-quarter mile out from the defense zone. Designated WUI defense zones would cover 45,342 acres (13 percent of the Monument) and threat zones 145,522 acres (41 percent of the Monument).

Wildlife and Plant Habitat

Alternative E does not use the land allocations or associated standard and guidelines from the 2001 SNFPA for the SSFCA; RCAs; CARs; PACs for California spotted owls, northern goshawks, and great gray owls; or den site buffers for American marten

and fisher. Alternative E would use the direction from the 1990 MSA to protect wildlife and plant habitat, including SOHAs.

Range

For Alternative E, grazing management would be directed by the 1988 Forest Plan and the 1990 MSA. Standards and guidelines from these documents do not contain specific guidelines for grazing within occupied little willow flycatcher or great gray owl habitat. Current range management practices would continue, including the Aquatic Management Strategy from the 2001 SNFPA. The allowable use factors from the 2001 SNFPA would not be used. They would be determined at the local level as described in the Forest Service Range Analysis Handbook.

Hydrological Resources

Alternative E includes the Riparian and Wetland standards and guidelines from the 1988 Forest Plan and the 1990 MSA. Standards and guidelines from the 2001 and 2004 SNFPAs, such as those for the Aquatic Management Strategy, RCAs, CARs, and RCOs, are not included.

Transportation

In Alternative E, the majority of the currently designated road and trail system would be available for use, retaining access similar to current levels for dispersed recreation, private ownerships, and management activities. There would be the potential for some reduction in high-clearance vehicle roads over time.

OHVs would be allowed on designated roads. OSVs would be allowed on designated roads when covered with snow, unless specifically prohibited. Non-motorized mechanized vehicles (mountain bikes) would be allowed on designated roads and trails unless specifically prohibited. Alternative E emphasizes opportunities for creating loop trails and roads, and could include the construction of new roads for developed recreation facilities and loop driving opportunities. Decommissioned roads could be converted to trails.

Alternative F

Alternative F is designed to allow more flexibility in treatment methods to promote ecological restoration

and maintenance, and forest health, and achieve the desired conditions in less time. Alternative F includes strategies that are responsive to the issues of recreation and public use, tree removal, fuels management/community protection, fires spreading to tribal lands, and methods for giant sequoia regeneration. It is similar to Alternative B, but proposes upper diameter limits for only giant sequoias.

Protection of Objects of Interest

Alternative F would retain the land allocations and standards and guidelines from the 2001 SNFPA, except where noted. Diameter limits in California spotted owl and northern goshawk PACs would be removed. For Alternative F, the Freeman Creek Grove would be designated as a botanical area, as prescribed by the 1990 MSA (MSA, p. 17). Alternative F includes multiple tools for decreasing fuel buildups and reducing the risk of uncharacteristically large-scale wildfire, which may threaten the objects of interest.

Promotion of Resiliency

Alternative F is expected to promote resilient vegetation communities through the use of prescribed fire, mechanical treatment, and managed wildfire (when available), with priorities and combinations determined by site-specific project analysis. It would allow flexibility in treatments where clearly needed for ecological restoration and maintenance or public safety, focusing first on the WUI defense and threat zones. It includes diameter limits only for giant sequoias.

Promotion of Heterogeneity

Alternative F was designed to improve heterogeneity through the use of multiple tools for ecological restoration and maintenance. It would use these tools to reduce fuels, encourage natural regeneration, and increase the diversity in species composition and age.

Recreation Opportunities

Alternative F would continue to provide current recreation opportunities, with a focus on the development of new recreation facilities or opportunities as visitor use increases.

Vegetation, Including Giant Sequoia Groves

For Alternative F, ecological restoration of forested ecosystems would be accomplished by reducing fuels, improving stand resilience and health, promoting heterogeneity, and encouraging natural regeneration of giant sequoias and other species. In areas where natural regeneration is not likely, planting would be used. Resiliency would be improved by using a combination of fire and mechanical treatments determined by site-specific analysis.

Alternative F would eliminate the standard and guideline from the 2001 SNFPA requiring retention of all conifer trees with a dbh of 30 inches or greater and hardwoods with a dbh of 12 inches or larger when implementing vegetation and fuels treatments.

Fire and Fuels

Alternative F uses a WUI defense zone that extends approximately one-quarter mile from developed private land and a WUI threat zone that extends another one and one-quarter mile from the defense zone. The actual boundaries of the WUI are determined locally, based on the distribution of structures and communities adjacent to or intermixed with national forest lands. Strategic landscape features such as roads, changes in fuel types, and topography are used in delineating the physical boundary of the WUI. In Alternative F, WUI defense zones would cover 45,342 acres (13 percent of the Monument) and threat zones 145,522 acres (41 percent of the Monument).

Alternative F includes the 56,591-acre TFETA. This land allocation was designed along the boundary with the Tule River Indian Reservation to not only protect the reservation and its watersheds, but also the objects of interest and watersheds in the Monument, from fires spreading from one to the other.

Wildlife and Plant Habitat

Alternative F would replace the 2001 SNFPA standards and guidelines for great gray owl and little willow flycatcher habitat with standards based on the 2004 SNFPA. The 2004 SNFPA includes management direction for these species that is adaptable to local site conditions, while carrying forward the protection measures set in place by the 2001 SNFPA. Diameter

limits in California spotted owl and northern goshawk PACs would be removed.

Range

For Alternative F, standards and guidelines for livestock grazing from the 2004 SNFPA would replace the 2001 SNFPA direction. Some management direction from the 1988 Forest Plan and 1990 MSA would be used.

Hydrological Resources

Alternative F would replace the strategies, objectives, and standards and guidelines for the RCOs from the 2001 SNFPA with management direction based on the 2004 SNFPA. The 2004 SNFPA reduces redundancy and describes more consistent direction for hydrological resources, while maintaining the intent of the Aquatic Management Strategy.

Transportation

For Alternative F, the majority of the currently designated road and trail system would be available for use, retaining access similar to current levels for dispersed recreation, private ownerships, and management activities. There would be the potential for some reduction in high-clearance vehicle roads over time.

OHVs would be allowed on designated roads. OSVs would be allowed on designated roads when covered with snow, unless specifically prohibited. Non-motorized mechanized vehicles (mountain bikes) would be allowed on designated roads and trails unless specifically prohibited. Alternative F emphasizes opportunities for creating loop trails and roads, with the potential for the construction of new roads for developed recreation facilities and loop driving opportunities. Decommissioned roads could be converted to trails.

Affected Environment

Location

The Monument includes approximately 327,000 acres of National Forest System lands (encompasses 354,000 acres including private land) located in the southern Sierra Nevada on the Sequoia National Forest, in Fresno and Tulare Counties and a small

portion of Kern County, California. The Monument is situated approximately 37 miles south of Yosemite National Park, directly west and south of Sequoia and Kings Canyon National Parks, approximately 45 miles east of Fresno and 20 miles east of Porterville. Approximate Universal Transverse Mercator (UTM) coordinates for the northern section are zone 11, 0346900E, 4075500N, 0321600E, 4057750N and 4007850N, 3955900N, 0370000E, 0348000E for the southern section.

General Habitat Discussion

The Monument is located along the west slope of the southern Sierra Nevada. Elevations in the Monument range from approximately 1,000 to over 10,000 feet. Habitat types within the Monument include: mixed conifer (including giant sequoia groves), red fir, oak woodland, montane and mixed chaparral, wet meadow, riparian, annual grassland and rock outcrop.

Red fir forests in the Monument are dominated by red fir (*Abies magnifica*), interspersed with lodgepole pine (*Pinus contorta*) and some areas of western white pine (*Pinus monticola*). Above 10,000 feet, alpine and subalpine vegetation dominate.

Mixed-conifer forests contains a mixture of two or more dominant conifer species, including giant sequoia (*Sequoiadendron giganteum*), ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*Pinus jeffreyi*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), and sugar pine (*Pinus lambertiana*) with a complex understory of *Arctostaphylos*, *Ceanothus*, and other shrubs. This is the most common habitat type in the Monument.

Oak woodlands include blue oak (blue oak savanna) (*Quercus douglasii*) with a chaparral and annual grass understory, canyon live oak (*Quercus chrysolepis*) and at higher elevations, mixed conifer/oak woodlands with black oak (*Quercus kelloggii*).

Montane and mixed chaparral habitats are found in patches throughout the Monument. These are shrub communities dominated at lower elevations by buckbrush (*Ceanothus cuneatus*), birchleaf mountain mahogany (*Cercocarpus betuloides*), poison oak (*Toxicodendron diversilobum*) and at higher elevations by mountain whitethorn (*Ceanothus cordulatus*), deerbrush (*C. integerimus*), chinquapin

(*Castinopsis sempervirens*), and greenleaf manzanita (*Arctostaphylos patula*).

Wet meadows are wetland habitats associated with groundwater seeps and margins of seasonal drainages. This plant community is dominated by grass and grass-like species growing with varying combinations of herbaceous perennials. Riparian habitat is associated with the margins of seasonal and perennial drainages, and with seeps and wet meadow margins at scattered locations in the Monument. Riparian habitat is dominated by willows including Lemmon's willow (*Salix lemmonii*), Sierra willow (*Salix eastwoodii*), and Scouler's willow (*Salix scouleriana*), with occasional quaking aspen (*Populus tremuloides*) and mountain alder (*Alnus incana* spp. *tenuifolia*).

Annual grasslands are found throughout the lower elevations of the Monument. The areas are dominated by species such as bromes (*Bromus* spp.), needlegrass (*Achnatherum* spp.) and wild oats (*Avena* spp.). Dominant forbs in annual grasslands include owl's clover (*Orthocarpus* spp.), fiddleneck (*Amsinckia intermedia*) and stork's bill (*Erodium* spp.). These grasses and forbs may occur in pure stands or contain an overstory of scattered oaks (*Quercus* spp.) or California buckeye (*Aesculus californica*).

The rock outcrop, talus, and rock scree plant community is located along the upper slopes and along ridges. A variety of forbs occur in these sparsely vegetated habitats, but some places are entirely devoid of vegetation.

Environmental Effects

Analysis Assumptions and Methodology

Assumptions

Ecological Restoration and Wildlife

Ecological restoration for wildlife is defined as a reestablishment of natural functions and processes in the Monument that provide a diverse range of high quality habitats. Priority areas for restoration are those sites which were modified from their natural state by fire suppression, logging, unmanaged grazing, adverse changes in hydrology and historic development. The

goal of management of wildlife habitat is to return human-disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated. Ultimately, restored areas would be maintained as valuable wildlife habitat through natural processes, with little human management required. These restored areas could then contribute to the maintenance of viable populations of animal species in the Monument.

Restoration efforts may include, for example:

- Return of a natural fire regime
- Removal of exotic species
- Restoration of abandoned unneeded roads, areas over-grazed by domestic animals, or disrupted natural waterways
- Restoration of areas disturbed by management activities or by public use (such as construction or OHV damage)
- Restoration of native plants and animals

Throughout the Monument, even in the WUI zones and the TFETA, mechanical treatments will be limited or prohibited in wilderness (existing or proposed), in wild and scenic river corridors, in inventoried roadless areas, in research natural areas, in RCAs, on slopes exceeding 35 percent, in areas greater than 9,000 feet in elevation, and in areas more than one quarter mile from a road, with the exception of hazard trees. Based on these constraints, approximately 23 percent of the 328,315 acres in the Monument could be considered for mechanical treatment, (alone or in conjunction with fire) compared to about 77 percent that could be considered for fire treatments.

Assumptions for All Alternatives

All of the alternatives would allow short-term reductions in habitat quality (by removing trees, snags and down woody material) for some species and create potential disturbance to individual animals. In the long-term, vegetation treatments may reduce the frequency and scale of uncharacteristically severe wildfire in the Monument and improve resiliency to drought, insects and disease.

Assumptions for Alternative A

There are a number of ongoing activities in Alternative A (No Action) that have the potential to

impact wildlife. These activities would continue in the action alternatives. They include:

- Meadow restoration
- Trail and road maintenance
- Use of designated roads and trails (with some differences in the available routes by alternative)
- Vegetation treatments, including thinning, fuels and planting
- Prescribed burning and managed wildfire
- Water improvement projects
- Campground and administrative site operations and maintenance
- Hazard tree removal
- Livestock grazing on designated allotments
- Recreation use of caves
- Rock climbing
- Special use permits
- Hunting and fishing
- Science and research
- Winter sports, including snowmobiles

Methodology

Scientific Advisory Board (SAB) Advisories

The SAB recommended:

The Monument should closely follow current and future research on the relationships between LS/OG-correlated species, and stand-structure modification as well as grazing. Direct monitoring of sensitive LS/OG species, not merely monitoring of habitat, is called for until habitat/species relationships are better understood. The California Wildlife Habitat Relationships System (California Dept. of Fish and Game 2000), however imperfect, is presently the most powerful tool available for predicting which species will be advantaged and which species disadvantaged when habitats are changed in specific ways. Assuming that stand modification through burning or mechanical thinning is detrimental to some of these vertebrate species, science cannot say whether long-term forest health or short-term conservative protection of LS/

OG-dependent vertebrates is the correct choice (Scientific Advisory Board 2003).

A great deal of knowledge of fisher's use of habitat has been gained since the SAB recommendations in 2003. While monitoring all of the Monument's sensitive species would be a great help to management, it would also be cost prohibitive. Therefore, monitoring would be limited to project-level surveys and some limited annual monitoring of fisher, California spotted owls, northern goshawks, great gray owls, and little willow flycatchers would continue in all alternatives of the Monument Plan.

Determining Direct and Indirect Effects

This is a programmatic level plan with no proposed ground disturbing activities and, therefore, no direct effects.

Indirect effects of the six alternatives in the Monument Plan FEIS were evaluated using three primary metrics:

- 1. Vegetation Management:** Vegetation management projects for fuels reduction and ecological restoration may impact habitat important to a particular species.
- 2. Recreation Impacts:** Roads, trails, and recreation sites may affect the quality of habitat through disturbance, fragmentation, or the loss of key habitat features.
- 3. Special Management Areas:** In some alternatives, special management areas or land allocations are utilized to protect habitat features important to sensitive species.

Note: The number of acres and miles of roads reported in this effects analysis for wildlife habitat were derived from a GIS analysis and are based on totals inside the Monument boundary. There was no distinction made between public, private, or state-owned land inside the Monument boundary, which may differ from other analyses in this Monument Plan FEIS. Numbers reported in the BA are based on conditions existing in June 2011.

Large stand-replacing fires have the potential to affect habitat suitability for a number of wildlife species. The location and extent of large wildfires are impossible to accurately predict. Modeling

of the alternatives estimated that stand-replacing fire would occur on a maximum of four percent of forested land in the Monument per decade in the next 30 years (SPECTRUM model). While these fires may drastically change habitat in limited areas, the effects would only affect a small portion of habitat Monument-wide. These changes may improve habitat function for some species while degrading or otherwise limiting abundance and distribution of habitat for others.

Determining Cumulative Effects

The cumulative effects analysis evaluates the six alternatives in context with past, present, and reasonably foreseeable actions that when taken collectively might negatively influence the species. The cumulative effects of past management activities are incorporated within the existing condition in the Monument. The Forest Service recognizes that significant scientific advances in evaluating landscape conditions have been made in the past decade and will employ improved cumulative effects analysis techniques as they become available. For example, Forest Inventory and Analysis plots may provide reference points of forest conditions over time, and landscape trajectory analyses can be used to evaluate trends in habitat quality without requiring detailed analysis of past actions. Where appropriate and based on available data, cumulative effects analysis for site-specific projects will consider whether proposals exacerbate or moderate habitat trends. The analysis areas vary by species.

Climate change will cause changes in the distribution of individual species and of forest and rangeland ecosystems. The precise effects of climate change on individual species are difficult to predict and will not be addressed in the effects analysis. For a more detailed description of how climate change may impact the Monument, see the Trends in Climate Change section in Volume 2, Appendix C, of the Monument Plan FEIS.

California Condor—Effects

General Distribution

The historic distribution of California condors in the Sierra Nevada included the area that is now the Monument. In 1987, the last documented case of California condors reproducing in the wild occurred

on the Western Divide Ranger District (formerly Hot Springs Ranger District) of Sequoia National Forest (now a part of the Monument). Historic foraging areas in close proximity to the Monument include the oak-woodlands and grassland hill country. This belt extends from the Kern County border north to Blue Ridge in Tulare County (U.S. Fish and Wildlife Service 1984a).

The reintroductions of California condors in California, northern Arizona, and in northern Baja California have led to very limited renewed nesting in these areas. Some of the birds released in Arizona range into southern Utah and rarely into southern Wyoming and Colorado (NatureServe 2009).

The current range of California condors in California includes a “U” shaped zone extending from the coastal mountains at Santa Clara and San Mateo Counties south to Ventura County, east to the western slope of the Tehachapi Mountains, and north through the west slope of the Sierra Nevada to approximately Fresno County (U.S. Fish and Wildlife Service 1984a and 1996b).

In 1982 only 21 California condors remained in the wild, and in 1987, all individuals were captured to facilitate a captive breeding and recovery program. Reintroductions of captive-reared juveniles began in 1992 on the Los Padres NF. Subsequent releases have also occurred in western Monterey county, eastern San Luis Obispo County, eastern Santa Barbara County, Baja California, Mexico and in Arizona. Carcass stations placed near release sites are utilized as part of the recovery program to insure California condors find food and to encourage young birds to stay near release sites. Despite the lack of adult mentors to aid juveniles in discovering historic use patterns, they have taken sporadic flight forays to the Sierra Nevada including areas on the Sequoia NF. In these instances, young California condors have continued to use the same zones previously utilized by members of the adult wild population prior to the recapture program. The current frequency and duration of California condor visitations to the Forest remains very limited and sporadic (three to five annually; stay ranging from several days to a few weeks). Most use occurs from late summer through early spring. Future California condor occupation is expected to gradually increase

as birds mature and the population expands (pers.com M. Bart 1999, J. Grantham 2008).

As of December 31, 2009, the total California condor population consisted of 350 birds of varying ages. There were 162 in the captive population and 188 in the wild including 75 in Arizona, 95 in California, and 18 in Baja California (Jurek 2010). The minimum criterion for reclassification to threatened status is the maintenance of at least two non-captive populations and one captive population. These populations must (1) each number at least 150 individuals, (2) each contain at least 15 breeding pairs and (3) be reproductively self-sustaining and have a positive rate of population growth. In addition, the non-captive populations must (4) be spatially disjunct and non-interacting, and (5) contain individuals descended from each of the 14 founders (U.S. Fish and Wildlife Service 1996b).

California condors often return to traditional sites for perching and resting. Captive reared California condors often use historic sites. A typical roost site is characterized by rock cliffs or cavities and large, old Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) live trees or snags in undisturbed areas (Zeiner et al. 1990). Potential roosting habitat is characterized by the USFWS as the upper two-thirds of a slope, with thermal updrafts, and availability of large coniferous trees, snags, and cliffs.

The San Joaquin Valley foraging region is located in eastern Kern, Tulare, and Ventura counties including an important Kern County foraging area in the foothill rangelands around Glennville. In the Kern foothills, California condors roosted primarily on National Forest land in the Greenhorn Mountains and foraged daily in the Cedar Creek and upper Poso Creek drainages as far west as Blue Mountain and the Old Granite Station crossroads south of Woody, California. In Tulare County, California condors foraged extensively through the oak woodland and grassland hill country north from the Kern County border and west of the National Forest boundary, including the Tule River Reservation (U.S. Fish and Wildlife Service 1984a). As in northern Kern County, important sites were to the east on higher slopes in Sequoia National Forest (including portions of the Monument) and on higher peaks within the foraging zone, including Blue Ridge.

Status

The California condor was listed by the U.S. Fish and Wildlife Service as a Federal endangered species in 1967. Specific causes contributing to the decline of the California condor over the last several decades have included incidental shootings, lead poisoning, egg collecting, collisions with power lines or other obstacles, and various forms of poisoning (DDT, cyanide, strychnine, compound 1080, antifreeze from car radiators) (U.S. Fish and Wildlife Service 1984a). A Recovery Plan was developed for the California condor in 1984 (U.S. Fish and Wildlife Service 1984a) and updated in April 1996. Critical habitat has been designated for the California condor, with some on the Sequoia National Forest (Ibid). There are approximately 798 acres of critical habitat within the Monument (92 acres in the Blue Ridge Condor area and 706 acres in the Tulare County Rangelands).

The 1988 Forest Plan (USDA 1988) identified the historic Starvation Grove Nest Site (approximately 2,964 acres based on the current GIS layer) and the historic Lion Ridge Roost Site (494 acres based on the current GIS layer) as areas receiving special management. These areas are displayed in Map 26. A Nest Site Management Plan was developed for the Starvation Creek Grove Condor Nest Management Area (USDA 1986) which includes specific requirements intended to maintain or enhance habitat characteristics important to California condors. The guidelines also include measures to reduce potential disturbance from management activities, roads and recreation should California condors nest in the area. The Lion Ridge Roost Site receives modified management to minimize conflicts with California condor recovery needs.

The 1984 Recovery Plan identified “essential habitat” as important to the recovery of California condors (1984a) (Ibid). Essential habitat has no legal status. Its designation was intended to identify areas that may be used to supplement critical habitat at some future date. As such it is to be utilized for informational purposes, and encompasses a series of key California condor use spots. Approximately 8,000 acres in the southwestern portion of the Monument are included in the essential habitat area (Map 26).

Reproductive Biology and Breeding Habitat

Historically, California condors laid one egg on the bare ground in caves, crevices, behind rock slabs, or on large ledges or potholes on high sandstone cliffs in isolated, extremely steep, rugged areas (Zeiner et al. 1990, DeGraaf et al. 1991). Two nests have been found in giant sequoias (Snyder et al. 1986). The nest site is often surrounded by dense brush (Zeiner et al. 1990).

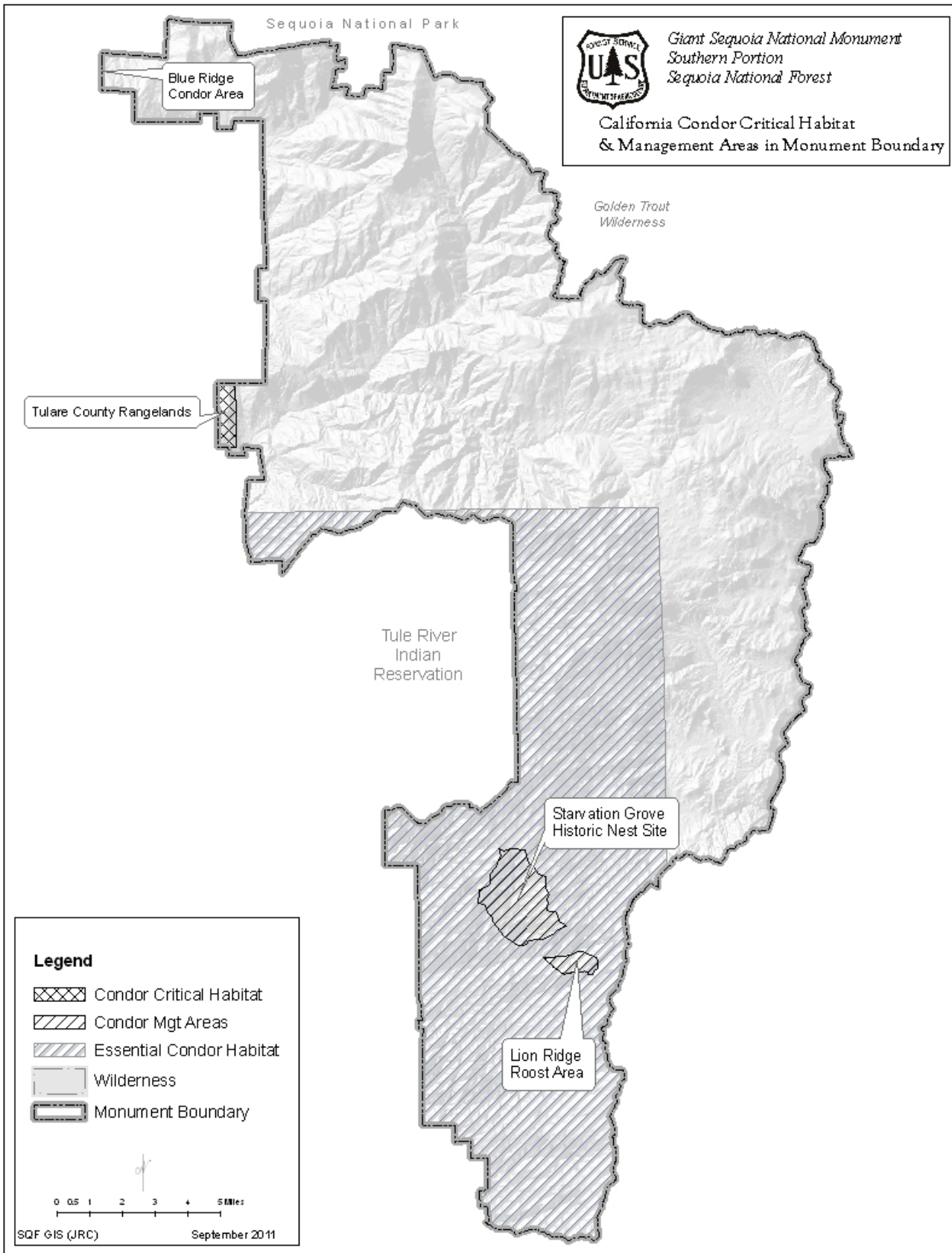
Courtship and nest site selection by breeding California condors occur from December through the spring months. Reproductively mature, paired California condors normally lay a single egg between late January and early April. The egg is incubated by both parents and hatches after approximately 56 days. Both parents share responsibilities for feeding and nesting. Feeding usually occurs daily for the first two months, and then gradually diminishes in frequency. At two to three months of age, California condor chicks leave the actual nest cavity, but remain near the nest where they are fed by their parents. The chick takes its first flight at about six to seven months of age, but may not become fully independent of its parents until the following year. Parent birds occasionally continue to feed a fledgling even after it has begun to make longer flights to foraging grounds.

There have been two documented California condor nests in giant sequoias (*Sequoiadendron giganteum*). Both were near or within the Monument. Nineteen giant sequoias were identified and mapped as potential California condor nest trees following surveys of groves. Historical nest trees within the planning area were Giant sequoias in relatively open stands with a commanding view of the surrounding area.

Diet and Foraging Habitat

The California condor is a strict scavenger; prey includes cattle, sheep, deer, and ground squirrel carrion (Zeiner et al. 1990a). This species searches for food while soaring or gliding and often forages over areas 2.8 to 11.6 square miles in size (Ibid). Food must be located in open areas, such as grasslands, to allow adequate space to land and take-off (Ibid). Foraging usually occurs in open grassland and oak-woodland habitats, primarily in the foothills

Map 26



surrounding the southern San Joaquin Valley (U.S. Fish and Wildlife Service 1984a). Water is required for drinking and bathing (Zeiner et al. 1990).

Management

The Forest will continue to follow the current recovery plan for California condor. All of the alternatives would continue to manage the Starvation Grove historic nest site and Lion Ridge Roost site following existing direction to maintain California condor habitat. Nesting or roosting California condors would be protected, if necessary, with road closures and limited operating periods in all alternatives.

Management directions from the Starvation Creek Grove Nest Site Management Plan include:

- No habitat modification (including reduction in the vegetative cover) will be allowed within one-half mile of the historic nest tree. Management activities within the California condor nest management area but beyond the one-half mile restriction will be designed to protect and/or enhance habitat in the area for condors.
- Management activities will immediately cease if California condors are found within or searching for nests in the vicinity of the nest management area.
- Public firewood gathering will not be permitted along FS Road 23S64 because of its proximity to the historic nest site.
- If California condors nest or are actively searching for nest sites in the vicinity of the nest management area, there will be a seasonal suspension of travel on FS Roads 23S03C, 23S29 and 23S68. There will be a permanent suspension of public vehicle traffic on FS Road 23S64. County road M-50 will remain open.
- If California condors nest in the management area, an area closure will be implemented by Forest Order. The area closure would include all the nest management area except that portion west of County Road M-50 to the watershed divide.
- Cattle grazing is permitted in the nest management area, but not during the nest selection period (December through April).

Management directions for California condor roost sites, including the Lion Ridge Roost Site, designated by the 1988 Forest Plan (USDA 1988):

- Roost sites receive modified management to minimize possible conflict with the recovery needs of the California condor.

Effects

Direct Effects

This is a programmatic level plan with no proposed ground disturbing activities and therefore, no direct effects.

Indirect Effects

1. Vegetation Management: Vegetation management projects for fuels reduction and ecological restoration may impact California condor habitat by removing large trees with the potential to be used for roost or nest sites. Vegetation management may affect potential nesting habitat by changing the vegetative characteristics of treated stands. Fuels reduction is expected to minimize the threat of catastrophic wildlife and potential habitat loss. All of the alternatives would follow management direction to set the highest priority for fuels reduction activities in the WUI. It is assumed that WUI defense zones have the greatest risk of habitat altering vegetation management activities.

For Alternatives A, B, E, and F, approximately 45,242 acres of California condor essential habitat in the Monument are within WUIs (57 percent of essential habitat), and 11,259 of those acres are within WUI defense zones (14 percent of essential habitat). Within designated California condor critical habitat in the Monument, approximately 640 acres are within WUIs (80 percent of critical habitat in the Monument), and 83 of those acres are within WUI defense zones (10 percent of critical habitat).

For Alternative C, approximately 1,368 acres of California condor essential habitat in the Monument are within WUI defense zones (17 percent of essential habitat). In Alternative C, there is no California condor critical habitat in the Monument within WUI defense zones.

For Alternative D, approximately 797 acres of California condor essential habitat in the Monument

are within WUI defense zones (one percent of essential habitat). In Alternative D, there is no California condor critical habitat in the Monument within WUI defense zones.

Alternatives A, B, C, and D—In Alternatives A, B, C, and D, large trees (greater than 20 inches dbh) would not be removed for fuels reduction or ecological restoration. Trees this size would only be removed if they posed a safety hazard. The need to remove large trees or snags from a site would be determined on site-specific, project-level basis following the standards and guidelines in the Monument Plan FEIS. These standards and guidelines include:

Fall and remove hazard trees along maintenance level 3, 4, and 5 roads and within or immediately adjacent (tree falling distance) to administrative sites. Review by an appropriate resource specialist is required prior to falling hazard trees along maintenance level 1 and 2 roads.

Alternative E—In Alternative E, there would be no diameter limits on trees removed for fuels reduction, ecological restoration or safety hazards, except inside WUI defense zones. Although unlikely, potential nest or roost trees could be removed. Inside the defense zones, the diameter limit for tree cutting would be 30 inches dbh, except for safety hazards.

Alternative F—Alternative F would eliminate the standard and guideline from the 2001 SNFPA requiring retention of all conifer trees with a dbh of 30 inches or greater and hardwoods with a dbh of 12 inches or larger when implementing vegetation treatments. In Alternative F, there would be no diameter limits on trees removed for fuels reduction, ecological restoration (except for giant sequoias). Although unlikely, potential nest or roost trees could be removed.

2. Recreation Impacts: California condor roosting and nesting sites are susceptible to disturbance and “require isolation from human intrusion” (U.S. Fish and Wildlife Service 1996b). In all of the alternatives, road closures would be utilized in the Starvation Grove Nest Area and Lion Ridge Roost Area if the forest is notified by the USFWS that these areas are being utilized by California condors. The management plan for the Starvation Grove Nest Area would also

restrict recreation with an area closure and stop all management activities if California condors are found within or searching for nests in the vicinity of the nest management area. No new roads or trails are allowed within one-half mile of the historic nest site (USDA 1996).

Alternatives A, B, E, and F—Throughout the Monument, approximately 1,095 miles of roads and 202 miles of trails would continue to be utilized for recreation in Alternatives A, B, E, and F. Within California condor essential habitat, there are approximately 232 miles of roads. Developed recreation sites would cover about 660 acres and dispersed camping would be permitted. OHV use is allowed on designated roads.

Alternative C—Recreation opportunities in developed sites would be emphasized and increased. Dispersed camping outside of developed sites would be eliminated. Camping in more remote locations, in designated roadless areas, or in the Wildlands recreation niche setting would be allowed by permit. Motorized vehicle traffic would be limited to street licensed vehicles only. Snowmobile use would be eliminated for the public, except to access private property, and otherwise only allowed for administrative reasons or emergency situations.

Alternative D—Recreation would be managed similarly to Alternatives A, B, E, and F except new recreation development would be limited, motorized use would be restricted to street-legal vehicles only and OSVs would be limited to paved roads.

3. Special Management Areas: The 2,964 acres around the 1984 nest site in the Starvation Grove are managed following the Starvation Creek Grove Condor Nest Site Management Plan as discussed in the “Management” section of this BA. The 494 acre Lion Ridge roost area is managed to protect this historic roost site with restrictions on habitat altering activities. In the 798 acres of California condor critical habitat in the Monument, the Forest Service is required to consult with the USFWS on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat for California condors. There are no additional management actions stipulated by the Monument Plan FEIS for these areas.

All Alternatives—All of the alternatives would continue following the guidelines from the 1996 California Condor Recovery Plan (U.S. Fish and Wildlife Service 1996b) and maintain the Starvation Grove Condor Nest Area and the Lion Ridge Roost Area.

Cumulative Effects

The cumulative effects analysis area for California condors includes the entire southern portion of the Monument plus the Blue Ridge and Tulare County Rangelands critical habitat areas. This is an appropriate scale for determining cumulative effects to California condors, since it includes all known habitat for this species potentially affected by implementation of an alternative in the Monument Plan FEIS. The cumulative effects time frame is 20 years into the future. The cumulative effects of all past actions are incorporated into the existing condition.

Ongoing or reasonably foreseeable future activities on private land will continue to affect habitat but the extent of that impact is difficult to ascertain at this time. Development in critical habitat adjacent to the Monument may increase the risk of shootings, lead poisoning, power line collision, etc.

The livestock industry appears to play a significant role relative to California condor management. Cattle have been identified as contributing to a significant portion of the California condor's diet. California condors could be negatively affected by the sale and subdivision of livestock ranches in critical habitat adjacent to the Monument.

Determination

Alternatives A, B, C, and D—Based on the above assessment of effects, it is my determination that implementation of Alternatives A, B, C, and D *may affect, but are not likely to adversely affect* California condors or its designated critical habitat. Large trees (greater than 20 inches dbh) that could potentially be used for nesting or roosting would not be removed for fuels reduction or ecological restoration. Trees this size would only be removed if they posed a safety hazard. Vegetation management may affect potential nesting habitat by changing the vegetative characteristics of treated stands and fuels reduction projects should minimize the threat of large stand-replacing fires and potential habitat loss. Disturbance

due to recreation or management activities would be minimized using road and area closures if necessary. The historically used Starvation Grove Condor Nest Area and the Lion Ridge Roost Area would continue to be managed to maintain important California condor habitat elements.

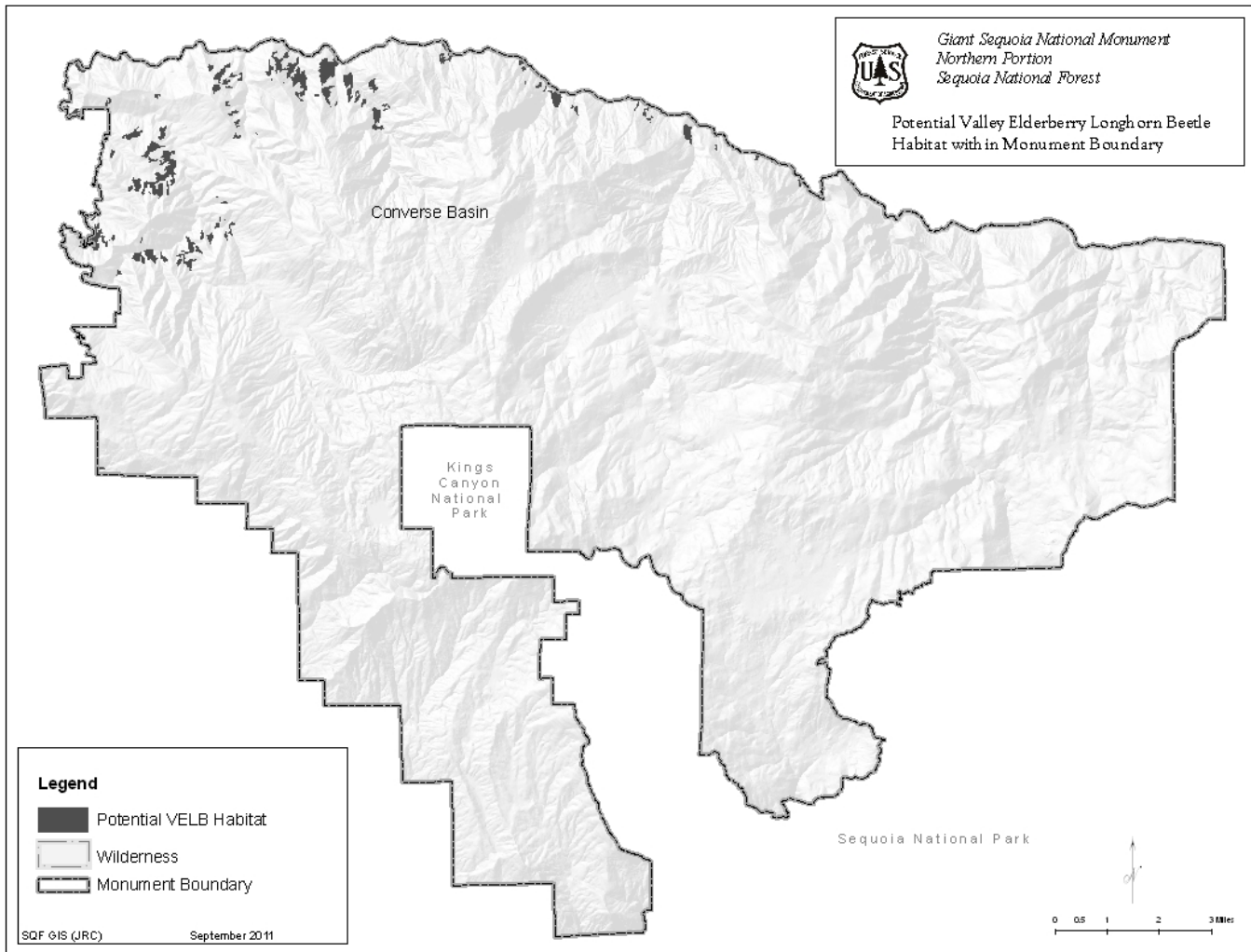
Alternatives E and F—Based on the above assessment of effects, it is my determination that implementation of Alternatives E and F *may affect, but are not likely to adversely affect* California condors or its designated critical habitat. In Alternatives E and F, there would be no diameter limits on trees removed for fuels reduction, ecological restoration (except inside WUI defense zones in Alternative E and for giant sequoias in Alternative F), or safety hazards. Although unlikely, potential nest or roost trees could be removed. Disturbance due to recreation or management activities would be minimized using road and area closures if necessary. The historically used Starvation Grove Condor Nest Area and the Lion Ridge Roost Area would continue to be managed to maintain important California condor habitat elements.

Valley Elderberry Longhorn Beetle—Effects

General Distribution

This species' range in California consists of patchy distribution from Redding south to Bakersfield, and the western Sierra Nevada foothills to eastern Coast Range foothills up to 3,000 feet in elevation. Habitat consists of elderberry shrubs and trees in a variety of habitats and plant communities, but most often in riparian, elderberry savannah or moist valley oak woodlands. Known or potential habitat of the valley elderberry longhorn beetle (VELB) within the Monument includes chaparral, foothill and oak woodland below 3,000 feet. Plants may be associated with riparian zones or in moist areas, primarily on north facing slopes scattered throughout the chaparral. This includes some portions of the Hume Lake Ranger District, the Tule River canyon, and California Hot Springs (Maps 27 and 28). Critical habitat has been designated by the U.S. Fish and Wildlife Service in the central and southern Central Valley, but none occurs in the Monument. Surveys within the Sequoia National Forest found potential exit holes in shrubs near Pine Flat Reservoir, in the

Map 27



vicinity of the Monument and in the Tule River Valley (EA Engineering 1999), which is located within the Monument.

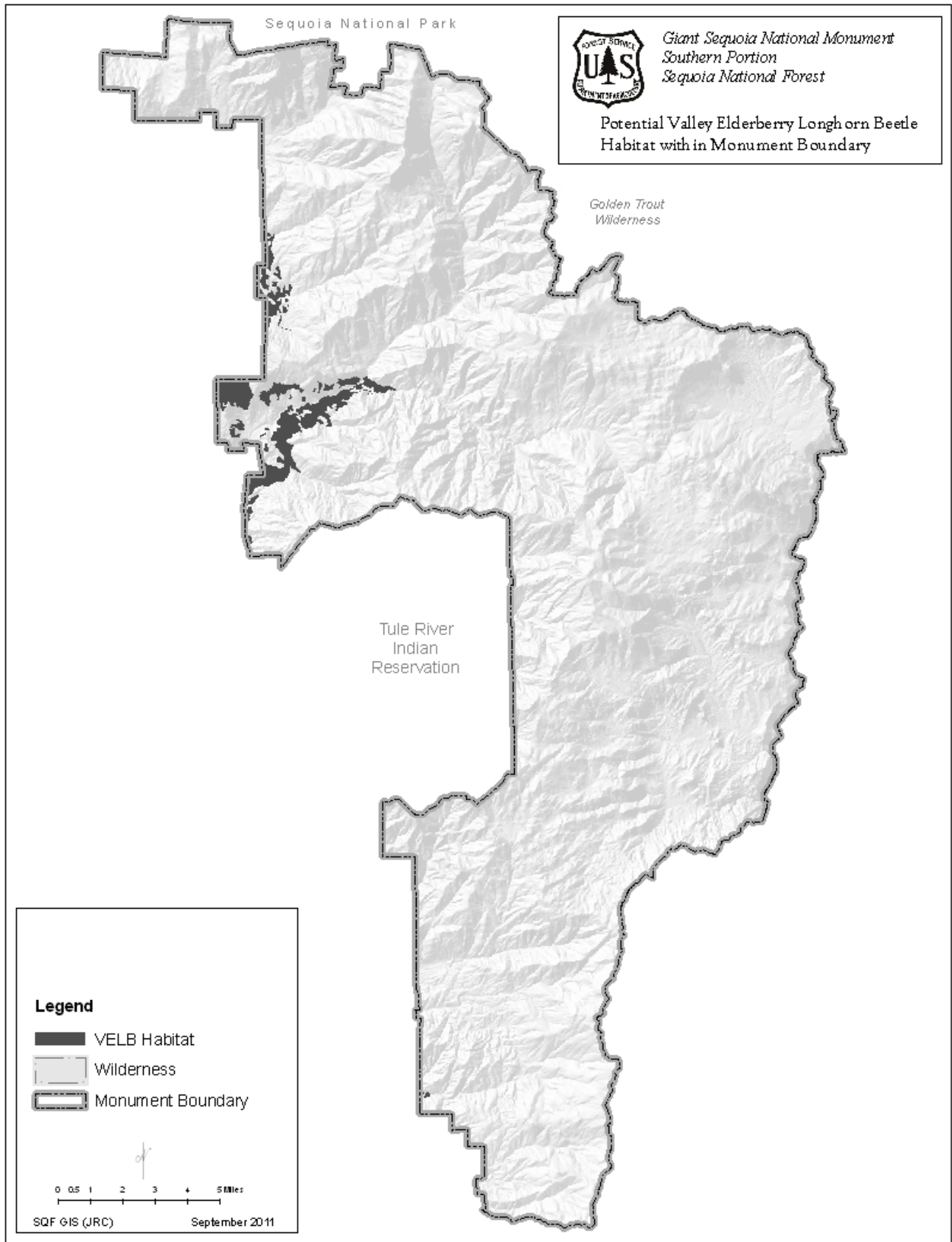
Status

The VELB was listed as Federally Threatened on August 8, 1980 (45 Federal Register 52807); critical habitat has been designated, but none occurs on Forest Service System Lands. Threats to this species include urbanization, insecticides, herbicides, and fluctuations in stream water levels (Steinhart 1990). Streamside woodlands have been largely developed or converted to agricultural uses, eliminating most of the elderberry (*Sambucus* spp.) necessary for the VELBs’ survival. Headwater disturbances that result in downstream flooding or mudslides could result in the destruction

of elderberry plants (USFS 1993d). In addition, grazing on *Sambucus* by domestic or wild herbivores as well as human pruning or burning of the plants is a persistent threat to the continued survival of VELB (Barr 1991). The most recent review of this species in September 2006 recommended that VELB be delisted (Federal Register Volume 72, Number 30, pp. 7064-7068).

The Sequoia National Forest or indirectly through proponent consultations under the Federal Energy Regulatory Commission (FERC) relicensing has consulted with the U.S. Fish and Wildlife Service on chaparral burning, grazing authorizations and FERC projects with the potential to affect suitable habitat for this species in the past.

Map 28



Reproduction

Eggs are laid in May on elderberry stems greater than one inch in diameter, as measured at the base, on healthy and unstressed plants. Larvae excavate passages into the elderberry shrub, where they may remain in larval form for as long as two years before they emerge as adults. Exit holes are usually on stems greater than 0.5 inches in diameter, with 70 percent of the exit holes at heights of four feet or greater; these holes are circular to slightly oval, with a diameter of seven to 10 millimeters (Barr 1991). In March to early June, adults feed in the riparian areas in which they breed on the foliage and possibly the flowers of elderberry trees or shrubs of *Sambucus mexicana* and *S. racemosa* L. var. *microbotrys* (Rydb). Larvae feed on the soft core of elderberry stems and excavate passages in the wood as they feed (Steinhart 1990).

General Habitat Use

Habitat consists of elderberry shrubs and trees in a variety of habitats and plant communities, but most often in riparian, elderberry savannah or moist valley oak woodlands. The VELB is most often found along the margins of rivers and streams in the lower Sacramento River and upper San Joaquin Valley. It was more abundant in dense native plant communities with a mature over story and a mixed understory (Barr 1991). Common associated plants include *Populus spp.*, *Salix spp.*, *Fraxinus spp.*, *Quercus spp.*, *Juglans spp.*, *Acer negundo*, *Ailanthus altissima*, *Ribes spp.*, *Rhus diversiloba*, *Vitis californica*, *Rosa spp.*, and in the south, *Baccharis spp.* (Ibid).

Habitat Management Objectives from the Recovery Plan

Objective 1: Enhance and/or maintain the *Sambucus* component of native plant communities in riparian corridors and adjacent uplands within the distribution of suitable habitat for the VELB. This includes flagging and protecting all individual elderberry plants in accordance with instructions from U.S. Fish and Wildlife Service (1993b). If an individual elderberry must be removed, mitigate as described by the U.S. Fish and Wildlife Service (1993b).

Objective 2: Maintain capability of habitat to support the VELB by avoiding use of herbicides or pesticides within a 100-foot radius of suitable VELB habitat.

Potential Threats to VELB habitat in the

Monument: Fuels reduction treatments may cause short-term losses in VELB habitat quality if large elderberry shrubs are removed. Treatment of dense chaparral may benefit elderberry in the long-term through release of competition and increased water availability.

Nine grazing allotments in the Monument include potential VELB habitat (70 percent of the potential habitat is within an allotment). There is limited browsing of elderberry by livestock but it does not appear to limit recruitment or affect the larger diameter twigs used by VELB. All areas have utilization standards that limit impacts on riparian shrubs, including elderberry.

Large stand-replacing fires have the potential to make habitat unsuitable for VELB in the short-term if large elderberry shrubs are affected.

Effects

Direct Effects

This is a programmatic level plan with no proposed ground disturbing activities and therefore, no direct effects.

Indirect Effects

1. Vegetation Management: Vegetation management projects for fuels reduction and ecological restoration may impact VELB by removing elderberry plants. However the distribution of elderberries below 3,000 feet is limited to a small portion (about one percent) of the land in the Monument. None of the alternatives would have specific protection for elderberry plants. Any management activity affecting this habitat would require project level analysis and, if needed, consultation with the USFWS. A GIS vegetation model based on shrub cover types below 3,000 feet that may include elderberries identifies 4,803 acres within the Monument as potential VELB habitat.

Standards and guidelines for vegetation and fuels treatments in shrub fields include:

- Design mechanical treatments in brush and shrub patches to remove the material necessary to achieve the following outcomes from wildland fire under 90th percentile fire weather conditions:

(1) wildland fires would burn with an average flame length of eight feet or less; (2) the fire's rate of spread would be less than 50 percent of the pre-treatment rate of spread; and (3) fire line production rates would be doubled. Treatments should be effective for more than five years.

- In WUI defense zones, to enhance stand heterogeneity, do not mechanically treat 10 percent of the area. In WUI threat zone, do not mechanically treat 15 percent of the area. Outside of WUI, do not mechanically treat 25 percent of the area. The TFETA has no special guidelines.

Alternative A (No Action)—Within potential VELB habitat, there are 762 acres identified as WUI defense zone (16 percent of the habitat in the Monument) and 2,101 acres of WUI threat zone (44 percent of the habitat in the Monument). These areas have the highest priority for fuels treatments and are more likely to be impacted than areas outside of WUIs.

Alternatives B and F—WUIs would be the same as in Alternative A. In addition, 1,864 acres of potential VELB habitat would be within the TFETA. The short-term loss of elderberry plants would possibly be higher in Alternatives B and F than in Alternatives A, C, D, and E.

Alternative C—Alternative C would designate a WUI defense zone that extends approximately 300 feet from structures, developed recreation sites, and administrative sites. Approximately 99 acres or two percent of the potential VELB habitat within the Monument would be within WUI defense zones. Assuming that fuels treatments would be concentrated in the WUIs; the short-term loss of elderberry plants would be lower in Alternative C than in Alternatives A, B, E, and F.

Alternative D—In Alternative D, areas designated as WUIs would be smaller than in the other alternatives. The defense zone would be 200 feet from structures on National Forest System land or from the boundary with private land, unless topographic circumstances dictate otherwise. In Alternative D, approximately 45 acres or one percent of the potential VELB habitat within the Monument would be within the designated WUI defense zone. The number of proposed acres that would be treated in Alternative D is small compared to those that would be treated under the other alternatives. Therefore, the potential for short-

term loss of elderberry plants would be the lowest in Alternative D.

Alternatives C and D would have the lowest risk to VELB from management activities; however, they may have a greater risk of large, stand-replacing fires.

Alternative E—The designated WUIs and fuels treatment strategy would be the same as in Alternative A (No Action). Therefore, the effects on VELB habitat are expected to be the same.

Riparian areas, which account for about one-quarter of the potential VELB habitat in the Monument, are generally low priorities for fuels treatment projects. Standards and guidelines for riparian areas minimize adverse impacts. Alternative E would have the greatest risk for habitat loss because the riparian guidelines are less restrictive.

2. Recreation Impacts: Disturbance from recreational activities is not known to be an issue for VELB. Elderberry plants near roads, trails, or campgrounds may have a slight risk of trampling or other damage.

Alternatives A, B, D, E, and F—The existing roads, trails and developed recreation sites would continue to be utilized in Alternatives A, B, D, E, and F.

Alternative C—Recreation opportunities in developed sites would be emphasized and increased. Dispersed camping outside of developed sites would be eliminated.

The risk of decreasing habitat quality for VELB would be concentrated at the developed recreation sites. Overall effects to elderberry plants would be lower than in the other alternatives because of the elimination of dispersed camping. Fewer acres of potential VELB habitat would be impacted in Alternative C.

3. Special Management Areas: There are currently no special management areas for VELB in the Monument. RCAs and CARs are land allocations with activity-related standards and guidelines aimed at maintaining species viability. Within these land allocations, the 2004 SNFPA guidelines would be followed to assess the impacts of management activities, require that Best Management Practices are followed in order to minimize adverse effects

and maintain habitat for riparian dependent species including VELB.

Standards and guidelines applicable to RCAs and CARs include:

- Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs (including willow and aspen) and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.
- Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the RCOs at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize effects to habitat for aquatic or riparian dependent plant and animal species.
- Within CARs, in occupied habitat or “essential habitat” as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation area. Develop mitigation measures to avoid effects to these species whenever ground-disturbing equipment is used.
- Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining mitigation measures, weigh the potential harm of mitigation measures (e.g. firelines) against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances when fire suppression or fuel management actions could be damaging to habitat or the long-term function of a riparian community.

Alternative A (No Action)—In potential VELB habitat, 1,046 acres would be within RCAs, and

562 acres would be within CARs. Within these land allocations, the 2001 SNFPA guidelines would be followed to assess the effects of management activities, require that Best Management Practices are followed in order to minimize adverse effects, and maintain habitat for riparian-dependent species, including VELB.

Alternatives B, D, and F—Within potential VELB habitat, 1,046 acres would be within RCAs, and 562 acres would be within CARs. Within these land allocations, the 2004 SNFPA guidelines would be followed to assess the effects of management activities, require that Best Management Practices are followed in order to minimize adverse effects, and maintain habitat for riparian-dependent species, including VELB.

Alternative C—In Alternative C, RCOs would be the same as in the 2004 SNFPA, but the land allocations of RCAs and CARs would be abolished.

Alternative E—Management of riparian areas would follow 1988 Forest Plan and the 1990 MSA. There would be no RCAs, CARs, or RCOs. Alternative E would have the least protection of VELB habitat.

Cumulative Effects

The cumulative effects analysis area for VELB includes the entire Sequoia National Forest. This is an appropriate scale for determining cumulative effects to VELB since it includes all suitable habitat potentially affected by implementation of the alternatives in this Monument Plan FEIS. The cumulative effects time frame is 20 years into the future. The cumulative effects of all past actions are incorporated into the existing condition.

Vegetation Management—Fuels reduction treatments may cause short-term losses in VELB habitat quality if large elderberry shrubs are removed. Treatment of dense chaparral may benefit elderberry in the long-term through release of competition and increased water availability.

Grazing—Grazing allotments in Sequoia National Forest include potential VELB habitat. There is limited browsing of elderberry by livestock, but it does not appear to limit recruitment or affect the larger diameter twigs used by VELB. All areas have utilization standards that limit effects on riparian

shrubs, including elderberry. These standards include: “Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation” (SNFPA ROD, Appendix A, p. A-59).

Recreation Impacts—The Greenhorn Mountain and Breckenridge areas of Sequoia National Forest completed motorized travel route designation. As a result of this process, motorized cross-country travel will be prohibited. No routes in suitable VELB habitat are being added to the National Forest Transportation System. Adverse impacts of motorized vehicles on VELB in this area will be reduced due to the elimination of cross-country travel in this portion of the Forest (USDA 2009).

Wildfires—Large stand-replacing fires have the potential to make habitat unsuitable for VELB in the short-term if large elderberry shrubs are affected.

Determination

All Alternatives—Based on the above assessment of effects, it is my determination that all of the alternatives *may affect, but is not likely to adversely affect* Valley Elderberry Longhorn Beetles. Individual elderberry plants that are potential habitat may be lost in fuels reduction or ecological restoration activities. The adverse effects would only be short-term, treatment of dense chaparral may benefit elderberry in the long-term through release of competition and increased water availability. Fuels reduction actions may benefit VELB habitat over the planning period by protecting shrublands from uncharacteristically severe wildfires.

Little Kern Golden Trout—Effects

General Distribution

The Little Kern golden trout (*Oncorhynchus mykiss whitei*) is endemic to the Little Kern River basin, Tulare County, California. Little Kern golden trout (LKGT) are considered one of three subspecies of trout native to the Kern River drainage. LKGT are widespread throughout the Little Kern River basin

(Christensen 1984). The majority of LKGT population is now within the Golden Trout Wilderness.

Approximately 190 kilometers (118 miles) of stream are considered suitable habitat and occupied by the species or hybrids. However, only 64 kilometers (40 miles) are within the species native range. There is one genetically pure (not hybridized) population of LKGT in the Kern River basin, east of the Little Kern River (Christensen 1994). The other five genetically pure populations are all within the Little Kern drainage (Christensen 1994). Approximately 4,582 acres of critical habitat is outside of the Golden Trout Wilderness and within the Monument. Within this critical habitat is approximately 5.4 miles of perennial streams.

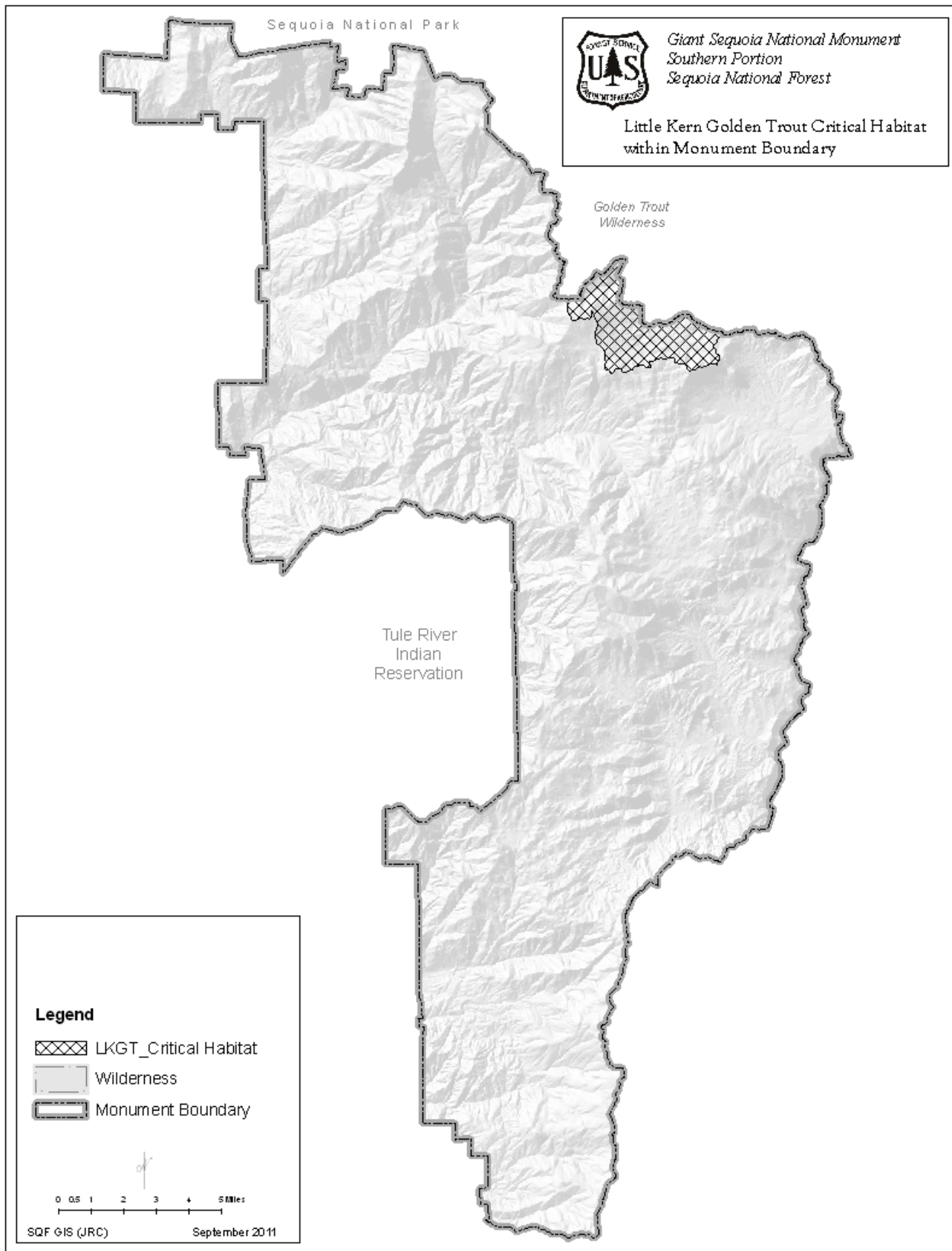
Status

The US Fish & Wildlife Service listed Little Kern golden trout as a Federally-threatened species, with critical habitat, on April 13, 1978 (Federal Register 43:15427). The critical habitat consists of the entire Little Kern River watershed from one mile below the mouth of Trout Meadows Creek. The critical habitat is entirely within the Sequoia National Park and the Sequoia National Forest, Tulare County, California.

“Threats of habitat modification and the effects of exotic trout on populations of this species” were the major factors in the decline and eventual listing of the LKGT (Federal Register 1978, Christensen 1984). Stream sedimentation has been recognized as a threat to recovery of LKGT, specifically from improperly managed logging, OHV use and road building (Federal Register 1978). Fuels reduction and ecological restoration activities have the potential to increase sedimentation without proper mitigations.

There have been ongoing, active management of the species and its critical habitat for more than twenty five years (CDFG 2010). These management activities included habitat improvement projects, extensive monitoring of the range program, and the reestablishment of genetically pure LKGT populations (with yearly inventories) by the California Department of Fish and Game (CDFG), Sequoia National Forest & Monument, the U.S. Fish and Wildlife Service, and Sequoia National Park. There has been some research conducted on the LKGT documenting reproduction, behavior, and movement patterns (Konno 1986; Smith 1977).

Map 29



Extensive genetic research has been conducted to identify pure and hybridized subpopulations and develop relationships between the three subspecies (Gold 1975, Gold and Gall 1975a, 1975b, 1975c, Gall et al. 1976, Bagley et al. 1999). More recent work has been conducted by Molly Stephens of the Genome Variation Laboratory, U.C Davis to investigate population structure, genetic diversity and rainbow trout introgression in native Little Kern golden trout. To determine whether restoration efforts eliminated rainbow trout introgression, she and her team undertook a complete genetic assessment of Little Kern golden trout. Genetic data from this updated assessment will provide critical information for the species' current and future federal ESA listing status and aid in conservation by guiding management decisions (Stephens 2007).

Cattle grazing may decrease habitat quality for LKGT through reductions in riparian vegetation and increases in erosion and sedimentation. The Sequoia National Forest entered into Section 7 consultation with the Fish and Wildlife Service in 1994 (U. S. Fish And Wildlife Service reference #1-1-94-F-26) for the Little Kern and Jordan Grazing Allotments. Consultation was reinitiated in 1995 (U.S. Fish and Wildlife Service reference #1-1-95-F-42) and 1996 (U.S. Fish and Wildlife Service reference #1-1-96-I-622). The Fish and Wildlife Service determined that grazing was “not likely to jeopardize the continued existence of Little Kern golden trout or cause destruction or adverse modification to critical habitat” (U. S. Fish and Wildlife Service reference #1-1-94-F-26). This determination was contingent on implementation and enforcement of protective measures.

As part of the measures outlined in the Biological Opinion, annual reports to the Fish and Wildlife Service documenting the current conditions of the grazing allotments and critical habitat are required. These Section 7 consultations have led to requirements of a 15 percent incidental use utilization standard for the Click's Creek watershed. The remainders of the Jordon and Little Kern allotments are at a grazing standard of 40 percent utilization (+ or - 5 percent) and are not to exceed 20 percent on woody species. Up to 10 percent bank alteration is allowed. Minimum stubble height is set at four inches

and willow utilization is not to exceed 20 percent of current year leader growth. Key riparian areas are monitored for utilization levels and stream bank damage. The two allotments together have up to 250 cow/calf pairs with use between June 6 and July 15 each year within the critical habitat.

Reproductive Biology and Breeding Habitat

LKGT spawn just after snow melt in late May or early June (Smith 1977). Females contain between 41 and 65 eggs per year and develop new eggs soon after spawning for the next season (Smith 1977). The eggs hatch after about 26 days in water temperatures between 12 degrees C and 16 degrees C (Smith 1977). Spawning gravel size for LKGT was found to be between five and 10 millimeters in size with a depth between five and 15 centimeters (Smith 1977). Smith (1977) also observed that LKGT remain within 50 meters of their hatching sites throughout their lifecycle. However, Konno (1986) found that LKGT might have home ranges between 100 to 300 meters. LKGT were only found to move outside of 300 m if the habitat was degraded (Konno 1986).

Diet

Golden trout in general feed on virtually every invertebrate that lives in or falls into the mountain streams or lakes in which they live (Moyle 1976). In streams, the primary prey is larval and adult aquatic insects and a few terrestrial forms (Moyle 1976). In lakes, the main prey is caddis fly larvae, chironomid midge larvae, and planktonic crustaceans, such as seed shrimp (Ostracoda) (Moyle 1976).

General Habitat Use

This species is found within the California Wildlife Habitat Relationships (CWHR) habitat types lacustrine and riverine. Elevation ranges from 1,460 to 3,780 meters (5,000 – 12,000 feet). Important habitat components for the LKGT, first detailed in a 1993 Biological Assessment, are pools, instream cover, substrate embedment, stream shade, isolation from exotics, and clean, clear cold water. Many of the locations of LKGT occur just below the headwater sections on the streams. Headwaters are extremely critical to the overall stream condition and structure, particularly with respect to sediment loading and water temperature. LKGT were found to occupy a

number of preferred microhabitat features, such as lateral scour pools with undercut banks.

The streams in the Little Kern River watershed determined by the USFWS to be critical habitat include “sufficient area for individual and population growth and dispersal of the Little Kern golden trout. The pools in stream areas within the designated area are proper habitat for aquatic insects which provide food for the trout. The cobbles and larger rocks provide cover for both juvenile and adult fish. The gravel bottom in pool areas of the critical habitat streams provides proper substrate for the excavation of nests. The Little Kern River is the only known habitat of the Little Kern golden trout” (USFWS 1978).

Effects

Direct Effects

This is a programmatic level plan with no proposed ground disturbing activities and, therefore, no direct effects.

Indirect Effects

1. Vegetation Management: Vegetation management projects for fuels reduction and ecological restoration may impact LKGT habitat by reducing streamside cover and reducing water quality by increasing sedimentation. However, mechanical vegetation thinning for fuels treatments or ecological restoration would be prohibited within the riparian areas of perennial and seasonally flowing streams unless they were found to be consistent with the Aquatic Conservation Strategy goals. Any management activity affecting this habitat would require project level analysis and, if needed, consultation with the USFWS.

The standard and guidelines for CARs from the 2004 SNFPA would be followed to minimize effects of vegetation management activities (see below). These would be the same for WUI and non-WUI areas. The limitation of vegetation management activities within CARs would result in protection of the riparian vegetation that provides stream shade, woody debris inputs, and bank stabilization, all habitat components important for this species.

Alternatives A, B, E, and F—Within LKGT critical habitat in the Monument, there are no acres identified

as WUI defense zone and approximately 545 acres of WUI threat zone (12 percent of critical habitat in the Monument). These areas have the highest priority for fuels treatments and are more likely to be impacted than areas outside of WUIs. The TFETA does not overlap with LKGT critical habitat.

Alternative E would have the greatest risk for loss of habitat quality because the riparian guidelines are less restrictive.

Alternative C—Alternative C would designate a WUI defense zone that extends approximately 300 feet from structures, developed recreation sites, and administrative sites. Approximately 22 acres or less than one percent of the LKGT critical habitat within the Monument would be within WUI defense zones. This defense zone would be located around Lewis Camp. Assuming that fuels treatments would be concentrated in the WUIs; the threats to LKGT habitat would be lower in Alternative C than in Alternatives A, B, E, and F.

Alternative D—In Alternative D, areas designated as WUIs would be smaller than in the other alternatives. The defense zone would be 200 feet from structures on National Forest System land or from the boundary with private land, unless topographic circumstances dictate otherwise. In Alternative D, none of the LKGT critical habitat would be within the designated WUI defense zone and vegetation management activities would be unlikely. Therefore, the potential threats to LKGT habitat would be the lowest in Alternative D.

Alternatives C and D would have a lower risk to LKGT habitat from management activities because the area likely to be treated in fuels reduction projects is much lower (22 acres and no acres, respectively) than in Alternatives A, B, E, and F.

2. Recreation Impacts: Recreation associated factors that may affect Little Kern Golden Trout include: roads acting as barriers to movement at stream crossings, increased sedimentation from roads and trails, and sport fishing. Impacts from fishing are mitigated with requirements for use of barbless hooks and harvest limits managed by the California Department of Fish and Game.

Standard and guidelines from the SNFPA related to these areas include:

- Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions, where necessary, to restore connectivity.
- Ensure that existing roads...meet BMPs.
- Identify roads, trails, staging areas, developed recreation sites, dispersed campgrounds, areas under special use permits or grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines.

Stream Condition Index plots have been utilized in several locations within critical habitat to monitor habitat quality. There is a high amount of background sediment from loose unconsolidated granitic soils in this dry environment. Monitoring to date does not show significant increases in sediment over background effects under current management.

Alternatives A, B, D, E, and F—The existing roads, trails, and developed recreation sites would continue to be utilized in Alternatives A, B, D, E, and F. Within LKGT critical habitat in the Monument there are approximately 18 miles of roads, nine miles of trails, and one developed recreation site (Lewis Camp). There are multiple stream crossings by both roads and trails.

Alternative C—Recreation opportunities in developed sites would be emphasized and increased. Dispersed camping outside of developed sites would be eliminated. The risk of decreases in habitat quality for LKGT would be concentrated near developed recreation sites. Overall effects to streams within LKGT critical habitat would be lower than in the other alternatives, because of the elimination of dispersed camping and the restriction of vehicle type to street-legal vehicles only. Fewer acres of potential LKGT habitat would be impacted in Alternative C.

3. Special Management Areas: The entire designated LKGT critical habitat in the Monument is managed within the Little Kern River CAR. Standards and guidelines for this area come from the 2001 SNFPA ROD and include:

- Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the RCOs at the project level and the aquatic management strategy goals for the landscape.
- Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic or riparian dependent plant and animal species.
- Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.
- Maintain average stream surface shade at greater than 60 percent on streams affected by management activities. Assess meadow environments and streams with limited overhead vegetation on a site-by-site basis at the project level.
- Prevent disturbance to stream banks and natural lake and pond shorelines caused by management activities and resource use (such as livestock and dispersed recreation) from exceeding 20 percent of a stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.
- Within CARs, in occupied habitat or “essential habitat” as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
- Allow hazard tree removal within RCAs or CARs if it is clearly needed for ecological restoration and maintenance or public safety. Allow mechanical ground-disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs and it is clearly needed for ecological restoration and maintenance or public safety.

4. Grazing: Almost the entire Little Kern CAR falls within the “Little Kern” grazing allotment. Grazing in this area would be managed following 2004 SNFPA guidelines and the measures outlined in the Fish and Wildlife Service’s Biological Opinions.

Grazing can result in changes in hydrology due to loss of vegetative cover, loss of riparian habitat and function, increased sedimentation, and stream channelization (USDA 2003). Standards and guidelines would limit the amount forage utilization, as well as encourage the exclusion of animals from the riparian areas. In addition, current management allows managers to rest an allotment when it was determined to be in a degraded condition. Perennial and seasonally flowing streams in range allotments are required to be at proper functioning condition.

Some indirect effects from cattle grazing are expected to occur. Trampling affects the hydrology of the watershed. Accelerated runoff only temporarily increases stream flows and decreases the amount of water retained in the watershed to sustain base flows. A general reduction in the plant biomass of riparian areas can have multiple consequences. These can be increased water temperature, increased sedimentation, and decreased water storage. Increased sediment loads reduce primary production in streams. Reduced in stream plant growth, and woody and herbaceous riparian vegetation may limit populations of terrestrial and aquatic insects. Grazing standards are designed to limit grazing intensity and control the timing of grazing both for physiological plant needs and stream bank protection.

Stream bank damage from cattle grazing can eliminate habitat associated with banks, alter stream morphology such as pool/riffle and width/depth ratios (Gunderson 1968, Platts 1981), and cover spawning areas with sediment which reduces survival of fish embryos (Phillips et al. 1975). Additionally, undercut banks that normally provide shelter are often damaged or collapsed in grazed areas, thus decreasing the amount of available fish habitat. Increased sedimentation due to bank collapse may decrease pool volume downstream, eliminating other important habitats.

The effects of grazing on woody vegetation are critical because of the importance of woody debris

in providing nutrients, structure, pool formation and stream bank stability, shading, and microclimate effects of riparian trees and shrubs. Grazing can eliminate woody species over time (USDA 2003).

Maximum grass utilization would be limited to 30 percent on early seral sites, 45 percent on late seral sites, and on highly degraded sites utilization standards would be below 30 percent. Stream bank disturbance will not exceed 10 percent in any given reach within LKGT critical habitat. Discouraging the use of riparian areas by livestock with fencing and off-channel watering holes will further prevent damage to riparian areas. However, any grazing in meadows containing LKGT risks a loss of habitat through bank sloughing, channel incising, loss of riparian shade, and siltation. The requirement that allotments be managed to meet Aquatic Management Strategy goals should help mitigate some of these impacts. One of these goals is to “maintain and restore habitat to support viable populations of native...riparian-dependent species.” In addition, the requirement that streams in range allotments be managed to meet proper functioning condition will help mitigate some of the range impacts.

Alternative A—The Little Kern River CAR would be managed following the 2001 SNFPA guidelines for RCAs and CARs. Those guidelines require the assessment of the impacts of management activities, Best Management Practices are followed to minimize adverse effects, and habitat for riparian-dependent species, including LKGT, is maintained.

Alternatives B, D, and F—The Little Kern River CAR would be managed following the 2004 SNFPA guidelines for RCAs and CARs. Those guidelines require the assessment of the impacts of management activities, Best Management Practices are followed to minimize adverse effects, and habitat for riparian-dependent species, including LKGT, is maintained.

Alternative C—In Alternative C, RCOs would be the same as in the 2004 SNFPA, but the land allocations of RCAs and CARs would be abolished.

Alternative E—Management of riparian areas would follow the 1988 Forest Plan and the 1990 MSA. There would be no RCAs, CARs, or RCOs. Alternative E would have the least protection of LKGT habitat.

Cumulative Effects

The cumulative effects analysis area for Little Kern golden trout is the Little Kern River basin. This is an appropriate scale for determining cumulative effects to Little Kern golden trout, since it includes all suitable habitat for this species potentially affected by implementation of the alternatives in the Monument Plan FEIS. The cumulative effects time frame is 20 years into the future. The cumulative effects of all past actions are incorporated into the existing condition.

Hybridization—The primary threat to LKGT is hybridization with introduced rainbow trout. The alternatives in the Monument Plan FEIS will have no effects on this issue.

Vegetation Management—Fuels reduction treatments that may impact LKGT habitat are unlikely, but could occur in the future. These treatments are generally focused near communities and other developed areas. Prescribed fire is a tool likely used throughout the area, with mechanical and hand thinning also occurring. The number of acres of LKGT habitat likely to be impacted in the analysis area is small, given the lack of developments in the area.

Grazing—Grazing in the Little Kern Allotment is expected to continue in the future and would follow Forest Service utilization standards and the standards provided by the USFWS Biological Opinion. Grazing in the portion of the analysis area in Sequoia National Park is limited to pack animals and is regulated to minimize adverse impacts.

Recreation Impacts—Recreational fishing, hiking, and regulated OHV use is expected to continue in the analysis area. No new roads, trails, or recreation developments are currently planned in the Little Kern River Basin.

Wildfires—Large stand-replacing fires have the potential to affect habitat suitability for LKGT by increasing sedimentation and removing streamside vegetation. The Lion Fire in 2011 burned approximately 20,000 acres within LKGT critical habitat. Most of the area burned with low or moderate severity, but LKGT in the fire area will likely be affected by ash, debris, and accelerated discharge following post-fire storm events.

Determination

Alternatives A, B, C, D, E, and F—Based on the above assessment of effects, it is my determination that all of the alternatives *may affect, and are likely to adversely affect* Little Kern Golden Trout or its designated critical habitat. Cattle grazing would continue in the Little Kern grazing allotment in all of the alternatives. Standards and guidelines would be in place to minimize the adverse effects of grazing on LKGT habitat. However, these do not fully mitigate the impacts on aquatic systems resulting from livestock grazing. Disturbance of stream banks (habitat alteration) is one of the major contributing factors to listing this species. This could continue in all of the alternatives.

Stream condition index plots have been utilized in several locations within critical habitat to monitor habitat quality. There is a high amount of background sediment from loose, unconsolidated granitic soils in this dry environment. Monitoring to date does not show significant increases in sediment over background effects under current management.

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Appendix A—Species Eliminated from Detailed Analysis

The following species on the updated species list issued by the U.S. Fish and Wildlife Service were dropped from further analysis, because they are not likely to occur in the Monument and they are not affected, directly or indirectly, by the proposed Monument Plan. Species not addressed further include: Tipton kangaroo rat, California bighorn sheep, San Joaquin kit fox, southwestern willow flycatcher, least Bell's vireo, blunt-nosed leopard lizard, giant garter snake, California red-legged frog, California tiger salamander, delta smelt, vernal pool fairy shrimp, Kern primrose sphinx moth. More detailed information on these species is available through the SNFPA Biological Assessment and Biological Opinion or by request from the Forest Supervisor's Office, Sequoia National Forest. The information is summarized here only to the level necessary to support the determination that the species is unlikely to inhabit the Monument or be affected by the proposed management of the Monument.

Tipton Kangaroo Rat

Life History: (profile from <http://arnica.csustan.edu/esrpp/tkrprofl.htm> authors Brown and Williams) The Tipton kangaroo rat is one of three subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*). Tipton kangaroo rats are visually similar to other kangaroo rats; they have a tawny yellow head and back with a white belly and a white stripe on the elongated hind legs that continue down the sides of the otherwise black tail. Other characteristics include: a large head, compared to other rodents, with large dorsally-placed eyes and small rounded ears; small forelegs with strong claws; and a long, tufted tail.

Tipton kangaroo rats inhabit arid-land vegetative communities with level or nearly level terrain located within the floor of the Tulare Basin in the southern San Joaquin Valley. Many of the presently inhabited areas have one or more species of woody shrubs, such as saltbush, iodine bush, goldenbush, and honey mesquite, sparsely scattered throughout and a ground cover dominated by introduced and native grasses and forbs. Burrows are commonly located in slightly elevated mounds, the berms of roads, canal embankments, railroad beds, and bases of shrubs and fences where wind-blown soils accumulate above the level of surrounding terrain. Soft soils, such as fine sands and sandy loams, and powdery soils of finer texture and of higher salinity generally support higher densities of Tipton kangaroo rats than other soil types. Terrain not subject to flooding is essential to sustain a population of Tipton kangaroo rats. The placement of burrows on elevated grounds in flood-prone areas is important, but depending on the extent and duration of the flooding, those burrows and populations may still be adversely affected.

Distribution: Historically, Tipton kangaroo rats were distributed from the southern margins of Tulare Lake on the north and eastward and southward along the edge of the San Joaquin Valley floor in Tulare and Kern counties to the foothills of the Tehachapi Mountains. The westward edge of their ranges was the marshes and open water of Kern and Buena Vista lakes and the sloughs and channels of the Kern River alluvial fan.

Current distribution is not completely known, occurrences of the Tipton kangaroo rats are limited to scattered, isolated clusters west of Tipton, Pixley, and Earlimart and in areas in southern Kern County. Cultivation and urbanization have reduced much of the area historically inhabited. However, in recent years,

Tipton kangaroo rats have reinhabited several hundred acres that were formerly in crop production but were retired and allowed to go fallow due to drainage problems, lack of water, or other reasons.

Monument Status

Due to the geographic range, elevation and habitat of this species, it is not likely to occur within the Monument. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

California Bighorn Sheep

General Distribution: The historical range of the California bighorn sheep includes the eastern slope of the Sierra Nevada, and, for at least one subpopulation, a portion of the western slope, from Sonora Pass in Mono County south to Walker Pass in Kern County, a total distance of about 346 kilometers (215 miles) (Jones 1950, Wehausen 1979, 1980). By the turn of the century, about 10 out of 20 sub-populations survived. The number dropped to five subpopulations at mid-century, and down to two sub-populations in the 1970s, near Mount Baxter and Mount Williamson in Inyo County (Wehausen 1979). Currently, five subpopulations of Sierra Nevada bighorn sheep occur, respectively at Lee Vining Canyon, Wheeler Crest, Mount Baxter, Mount Williamson, and Mount Langley in Mono and Inyo Counties.

Mountain sheep (*Ovis canadensis*) are fairly uncommon in California and, until 1979, the California bighorn sheep (*O. c. californiana*), one of three subspecies found in California, only occurred in two herds totaling 195 animals in the southern Sierra Nevada (Mt. Baxter and Mt. Williamson) (Ziener et al. 1990, CDFG 1991). It has been reintroduced into Inyo County, and into the South Warner Wilderness in Modoc County of Modoc NF. In spite of the reintroduction of almost 300 animals, only 80-150 remain on Inyo NF. The Inyo herd has declined steadily since the harsh winter of 1994. This is primarily due to increased stress in the herd and as a result, increased predation by mountain lions. The Modoc NF herd of 50 animals was lost in 1988 to pneumonia. The bighorn sheep is found in a variety of habitats associated with rocky, steep slopes and canyons (Ibid).

A recent analysis of the taxonomy of the bighorn sheep using morphometrics and genetics failed to support the current taxonomy (Ramey 1993, 1995, Wehausen and Ramey 1993, Wehausen and Ramey 2000). This and other research (Ramey 1993) supports taxonomic distinction of the California bighorn sheep relative to other nearby regions. The biological evidence supports recognition of California bighorn sheep as a distinct vertebrate population segment for purposes of listing (61 FR 4722).

General Habitat: Current and historical habitat of the California bighorn sheep is almost entirely on

public land managed by the U.S. Forest Service (FS), Bureau of Land Management (BLM), and National Park Service (NPS).

California bighorn sheep inhabit the alpine and subalpine zones during the summer, using open slopes where the land is rough, rocky, sparsely vegetated and characterized by steep slopes and canyons (Wehausen 1980: Sierra Nevada Advisory Group 1997). Most of these sheep live between 10,000 feet and 14,000 feet in elevation in summer months (John Wehausen pers comm. 1999). In winter, they occupy high, windswept ridges, or migrate to the lower elevation sagebrush-steppe habitat as low as 4,800 feet to escape deep winter snows and find more nutritious forage. Bighorn sheep tend to exhibit a preference for south-facing slopes in the winter (Wehausen 1980). Lambing areas are on safe precipitous rocky slopes. They prefer open terrain where they are better able to see predators. For these reasons, forests and thick brush usually are avoided.

Monument Status

Historic range of the Sierra Nevada bighorn sheep is believed to include portions of the Little Kern Drainage (Golden Trout Wilderness, Western Divide Ranger District) and possibly Mt. Harrington (Monarch Wilderness, Hume Lake Ranger District). Historic population data is unknown and no current populations are known from Sequoia National Forest. Historic range and current range are outside of the Monument. In addition, there are no plans for reintroduction in the immediate vicinity of the Monument currently being considered. Habitat for this species is not likely to be affected by any of the proposed alternatives nor would any of the alternatives degrade currently suitable habitat. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

San Joaquin Kit Fox

Life History: The San Joaquin kit fox is a subspecies of kit fox, the smallest member of the dog family in North America. A kit fox is a small fox with large ears that are set close together, slim body with long slender legs, narrow nose, and long, bushy tail tapering slightly toward the tip.

San Joaquin kit foxes inhabit grasslands and scrublands, many of which have been extensively

modified. Types of modified habitats include those with oil exploration and extraction equipment and wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands.

Oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities also provide habitat for kit foxes. Dens are scarce in areas with shallow soils because of the proximity to bedrock, high water tables, or impenetrable hardpan layers.

Although no extensive survey has been conducted of the historical range, kit foxes are thought to inhabit suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains. Kit foxes have been found on all the larger, scattered islands of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, San Benito, Merced, Stanislaus, San Joaquin, Alameda, and Contra Costa counties. They also occur in the interior basins and ranges in Monterey, San Benito, San Luis Obispo, and, possibly, Santa Clara counties; and in the upper Cuyama River watershed in northern Ventura and Santa Barbara counties and southeastern San Luis Obispo County.

Monument Status

There are no documented sightings within the Monument and the CWHR mapped range for this species does not include the Monument. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Southwestern Willow Flycatcher

General Distribution: The breeding range of the southwestern willow flycatcher includes southern California, southern Nevada, Arizona, New Mexico, and western Texas (Hubbard 1987, Unitt 1987, Browning 1993). Willow flycatchers winter in Mexico, Central America, and northern South America (Phillips 1948, Ridgely 1981, Stiles and Skutch 1989, Ridgely and Tudor 1994, Howell and Webb 1995).

The southwestern willow flycatcher is one of five recognized subspecies of willow flycatchers

(*Empidonax traillii*) currently recognized (Hubbard 1987, Unitt 1987, Browning 1993). The known range of the southwestern subspecies includes the South Fork Wildlife area on Sequoia National Forest at Lake Isabella. North of this area and within the Monument has been generally considered within the range of the “little” willow flycatcher (*Empidonax traillii brewsterii*).

General Habitat: The southwestern willow flycatcher usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat include willows (*Salix spp.*), boxelder (*Acer negundo*), stinging nettle (*Urtica spp.*), blackberry (*Rubus spp.*), cottonwood (*Populus spp.*), arrowweed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*).

Monument Status

There were historic detections of willow flycatchers in five areas of the Monument. All of these were assumed to be the “little” willow flycatcher (*Empidonax traillii brewsterii*) subspecies because they were north of the Lake Isabella area. The Monument is outside the known range of southwestern willow flycatchers. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Least Bell’s Vireo

Life History: The least Bell’s vireo is a small, olive-gray migratory songbird that nests and forages almost exclusively in riparian woodland habitats. Bell’s vireos as a group are territorial and are almost exclusively insectivorous.

Least Bell’s vireos generally begin to arrive from their wintering range in southern Baja California and establish breeding territories by mid- to late March. Most breeding least Bell’s vireos apparently depart their breeding grounds by the third week of September and only a very few least Bell’s vireos are found wintering in California or the United States. Although least Bell’s vireos occupy home ranges that typically range in size from 0.5 to 7.5 acres, a few may be as large as 10 acres. In general, areas

containing relatively high proportions of degraded habitat may have lower productivity (hatching success) than areas that contain high quality riparian woodland.

General Distribution: Historically described as common to abundant in the appropriate riparian habitats from as far north as Tehama County, California to northern Baja California, Mexico, the least Bell's vireo currently occupies a small fraction of its former range. Widespread habitat losses have fragmented most remaining populations into small, disjunct, widely dispersed subpopulations. Least Bell's vireo was known historically in the Kern River Valley.

The decline of this species is attributed, in part, to the combined effects of the widespread loss of riparian habitats and brood-parasitism by the brown-headed cowbird (*Molothrus ater*). Because of its decline, the least Bell's vireo was listed as endangered by the Service on May 2, 1986.

Critical habitat for the least Bell's vireo was designated by the Service on February 2, 1994 (59 FR 4845) and includes reaches of ten streams in southern California from Santa Barbara County to San Diego County encompassing approximately 38,000 acres. No critical habitat occurs within the Monument.

General Habitat: Nesting habitat of the least Bell's vireo typically consists of well-developed overstory and understories, and low densities of aquatic and herbaceous cover. The understory frequently contains dense sub shrub or shrub thickets. These thickets are often dominated by sandbar willow (*Salix hindsiana*), mule fat (*Baccharis salicifolia*), young individuals of other willow species such as arroyo willow (*S. lasiolepis*) or black willow (*S. gooddingii*) and one or more herbaceous species. Although some riparian plant species may be frequently encountered in least Bell's vireo habitat, it appears that the structure of the vegetation is more important than species composition, age of the stand, or other factors.

Monument Status

There have been recent sightings of apparently migratory or dispersing individual birds in the Kern Valley and most recently, singing males during the breeding season. The South Fork Wildlife Area at

Lake Isabella is the only area within Sequoia National Forest that provides the dense riparian habitat needed by this species. Least Bell's vireos have not been detected on the Monument and the Monument lacks suitable habitat. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Blunt-nosed Leopard Lizard

Life History: (profile from <http://arnica.csustan.edu/esrpp/bnll.htm>) The blunt-nosed leopard lizard is relatively large with a short, blunt snout and long, regenerative tail. It is multicolored with a striping pattern on its back, which breaks into spots as the lizard grows, hence the "leopard" in its name. During the breeding season, nuptial (courting) females are recognized by the bright red-orange markings on the sides of the head and body and the undersides of the thighs and tail. Males may also develop a nuptial color of salmon to bright rusty-red over the entire undersides of the body and limbs.

General Distribution: Blunt-nosed leopard lizards live in the San Joaquin Valley region in expansive, arid areas with scattered vegetation. Today they inhabit non-native grassland and alkali sink scrub communities of the Valley floor marked by poorly drained, alkaline, and saline soils, mainly because remaining natural land is of this type. In the foothills of the southern San Joaquin Valley and Carrizo Plain, they occur in the chenopod community which is associated with non-alkaline, sandy soils. They can be found at elevations ranging from 30 meters (100 feet) to 730 meters (2400 feet) above sea level. They are absent from areas of steep slopes and dense vegetation, and areas subject to seasonal flooding.

General Habitat: Blunt-nosed leopard lizards use small mammal burrows for permanent shelter and dormancy. Typically these include abandoned ground squirrel tunnels and occupied and abandoned kangaroo rat tunnels. They also construct shallow tunnels under exposed rocks or earth berms for temporary shelter and for permanent shelter in areas where small mammal burrows are scarce.

Monument Status

This species currently occurs at scattered sites in the San Joaquin Valley and adjacent foothills. The Monument is outside the mapped CWHR range of

this species and does not contain suitable habitat. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Giant Garter Snake

Life History: (profile from http://arnica.csustan.edu/esrpp/giant_garter_snake.htm) Giant garter snakes are endemic to the Central Valley of California. They hibernate in subterranean retreats and typically emerge to forage and breed in April dependent on local weather conditions. Upon emergence, they utilize small mammal burrows, crevices, and other surface objects for nocturnal retreats.

Giant garter snakes are highly aquatic and the diet reflects this mode of life. Typical prey includes carp, minnows, mosquito fish, Pacific tree frogs, and bullfrogs. Historically they preyed upon thick-tailed chub (*Gila crassicauda*, now extinct) and the California red-legged frog.

General Distribution: Historically, the species probably ranged throughout the central valley near major rivers and tributaries where spring and summer flooding had occurred, and in freshwater marshes and larger flood basins. Current distribution is limited to 13 separate populations: Butte basin, Colusa basin, Sutter basin, American basin, Yolo basin/Willow slough, Yolo basin/Liberty farms, Sacramento basin, Badger creek/Willow creek, Caldoni Marsh, East Stockton Diverting Canal and Duck Creek, North and South Grasslands Waterfowl Easement areas (U.S. Fish and Wildlife easements, Merced Co.), Mendota State Wildlife Area, and Burrell/Lanare.

General Habitat: Ideal habitat is dense emergent vegetation for escape from predation, deep and shallow pools of water (which persist throughout the seasonal cycle of activity) in which to forage and seek cover, open areas along the margins to allow for basking, and upland habitat with access to structures suitable for hibernation and escape from flooding. Rice fields often possess these very requirements and are therefore readily utilized by this species.

Monument Status

There are no known historical records from the Sequoia National Forest. Habitat within the Monument does not meet the elevation and geographic range for this species. Therefore based

on unlikely presence and no threat to habitat, my determination is no effect.

California Red-legged Frog

Life History: The diet of this subspecies is highly variable, including aquatic and terrestrial invertebrates, smaller frogs (e.g., Pacific tree (chorus) frogs (*Pseudacris (Hyla) regilla*), California mice (*Peromyscus californicus*), crustaceans, snails, worms, fish, and tadpoles (Zeiner et al. 1988, U.S. Fish And Wildlife Service 1994b). In addition, it is highly probable that tadpoles eat algae (U.S. Fish and Wildlife Service 1994b). California red-legged frogs breed from November to March, although they may breed earlier in southern areas. The egg mass is typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus spp.*) or cattails (*Typha spp.*), such that it floats on the surface of the water (Ibid). Egg masses are usually placed in quiet pools of slow-moving streams (Basey and Sinclear 1980). Tadpoles undergo metamorphosis 3.5 to 7.0 months after hatching, between July and September (Ibid). California red-legged frogs reach sexual maturity at three to four years and may live eight to 10 years (Ibid).

General Distribution: The California red-legged frog (*R. a. draytonii*) historically occurred along the coast from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (U.S. Fish And Wildlife Service 1994b).

Presently, this species is known to occur in about 238 streams or drainages in 23 counties of central and southern California (U.S. Fish and Wildlife Service 2002). In the Sierra Nevada, it is thought to occur from Shasta to Mariposa counties (Basey and Sinclear 1980). This subspecies occurs from sea level to 5,000 feet elevation (Ibid) although 90 percent of known occurrences are below 2,900 feet. Surveys indicate the California red-legged frog is extremely rare or nearly extirpated in the Sierra Nevada foothills (U.S. Fish And Wildlife Service 1994b).

There is one historical report of a red-legged frog adjacent to the Monument at Sampson Meadow (private) on the Hume Lake Ranger District circa 1926 to 1930. All other reports have been from

the valley floor, miles below the National Forest near Bakersfield, Minkler and Visalia. No museum specimens exist to verify the report at Sampson Meadow and visits by experts in the field of amphibians (Martin 1992, Cal Academy 2001, 2002, Van Herweg) and Forest personnel searching for amphibians have failed to detect California red-legged frogs at this or other key sites in the Sequoia National Forest or the Monument.

General Habitat: Adults require dense, shrubby, or emergent riparian vegetation close to deep (greater than 2.3 feet), still or slow-moving waters (U.S. Fish and Wildlife Service 1994b). Cool water temperatures are also required. Intermittent streams may be important because they restrict access of large aquatic predators (Ibid). This subspecies estivates in small mammal burrows or moist leaf litter up to 85 feet from water in dense riparian vegetation (U.S. Fish and Wildlife Service 1994b).

During dry periods, the California red-legged frog rarely is encountered far from water. During periods of wet weather, starting with the first rains of fall, some individuals may make overland excursions through upland habitats. Most of these overland movements occur at night.

Monument Status

There are no recent or historic records of California red-legged frogs within the Monument. No critical habitat for this species has been designated within or near the Monument. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

California Tiger Salamander

(Profile from CaliforniaHerps.com)

Life History: California tiger salamanders spending most of the year underground in animal burrows, especially those of California ground squirrels and valley pocket gophers. Emerges with the fall rains sometime in early November. Most breeding occurs December through March. Adults engage in mass migration during a few rainy nights and leave the breeding ponds shortly after breeding. Males arrive at the breeding pond a week or two before the females. Usually breeds in fish-free ephemeral ponds that form

during winter and may dry out in summer, but may also breed in slow streams and in some permanent waters. Females lay eggs and attach them singly or in small groups to underwater vegetation. Eggs hatch in two to four weeks. Larvae metamorphose during the summer and migrate from the ponds at night during dry weather.

General Distribution: Endemic to California. Historic range was from Sonoma County near Santa Rosa, south along the coast, to Santa Barbara County near Lompoc and east into the Central Valley and Sierra Foothills from Sacramento County to Tulare County. Isolated populations occur in the Sacramento Valley at Gray Lodge National Wildlife Refuge and near Dunnigan. Range is now fragmented.

General Habitat: California tiger salamanders utilize grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest.

Monument Status

Although California tiger salamanders are found in Fresno and Tulare Counties, there are no known detections within 10 miles of the Monument. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Delta Smelt

The Delta Smelt (*Hypomesus transpacificus*) occurs only in Suisun Bay and the Sacramento-San Joaquin estuary (“Delta”) near San Francisco Bay in California (U.S. Fish and Wildlife Service 1993e). Historically, this species occurred from Suisun Bay upstream to Sacramento on the Sacramento River and to Mossdale on the San Joaquin River (Ibid). The reduction of freshwater inflows to the Delta from water developments, water diversions, and drought appear to be the most deleterious factors affecting this species (Ibid). Critical habitat has been designated for this species in the delta of the Central Valley. No critical habitat for this species has been proposed within the Monument.

Monument Status

The Monument drains into Tulare Lake Basin. Historically there were overflows into the San Joaquin River and to the delta only in high runoff years. With the current system of irrigation canals and water use there is no direct connection from the Monument

watersheds and the habitat for this species. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Vernal Pool Fairy Shrimp

General Distribution: *Branchinecta lynchi* appears to be rather widely distributed in vernal pool habitats in the grasslands of California. It occurs from near Red Bluff in Shasta County, south through much of the Central Valley, and ultimately via several disjunct populations to the Santa Rosa Plateau in Riverside County in the South Coast Mountains region. It is sporadically distributed throughout this range and although it frequently co-occurs with other species of fairy shrimp, it is never abundant. All known sites in the Sierra Nevada foothills are below an elevation of about 950 feet. There are no records for *B. lynchi* near the Monument in the California Natural Diversity Database (CNDDDB).

General Habitat: Habitats are of two major kinds: One, which includes the type locality, is restricted to the Slanted Rocks area west of Byron Hot Springs in the southeast corner of Contra Costa County. There, clear water is held in small depressions, usually less than 1.0 meter diameter, in sandstone outcrops that are surrounded by foothill grasslands. These puddles each contain only a few individuals, and alkalinity and total dissolved solids are undoubtedly quite low. The more common habitat is a small swale, earth slump, or basalt-flow depression basin with a grassy or, occasionally, muddy bottom, in unplowed grassland. The pool basins that provide habitat for this species display the greatest diversity of origins found amongst Central Valley fairy shrimp habitats. This variety includes disturbed and constructed sites (Helm 1998). Occupied habitats vary widely in size, from one exceeding 10 hectares, to an uncommonly small puddle of only three centimeters.

Monument Status

The lowest points in the Monument are above 1,000 feet elevation and there are no known populations in near proximity to the Monument. The nearest populations shown in the California Natural Diversity Data Base are near Pixley, approximately 20 miles from the Monument. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.

Kern Primrose Sphinx Moth

(Profile from <http://shanana.berkeley.edu/essig/endins/kernspnx.htm> and the Framework BA)

Life History: Little is known about the biology of this species. Adult females lay their eggs on evening primrose plants (*Camissonia sp.*). Filaree (*Erodium spp.*) is an excellent nectar source for adult moths. Adult females will often lay their eggs on this plant as well. Unfortunately, the newly hatched larvae cannot develop on this plant and shortly die. Sites of appropriate habitat for the moth have been identified and plans for breeding and reintroducing the moth are in place but do not involve the Monument.

General Distribution: The Kern Primrose Sphinx Moths' known range is limited to Walker Basin east of Bakersfield and south of the Sequoia National Forest between Breckenridge and Piute Mountains (Tuskes and Emmel 1981) in southern Kern County. The species has never been reported on the Monument. Critical habitat has been designated for the species by the U.S. Fish and Wildlife Service in the southern Sierra Nevada, but it occurs outside of the Monument.

Monument Status

The Monument is well outside the known range of this species. Therefore based on unlikely presence and no threat to habitat, my determination is no effect.