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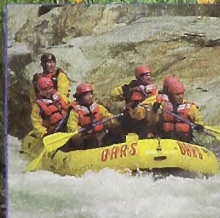
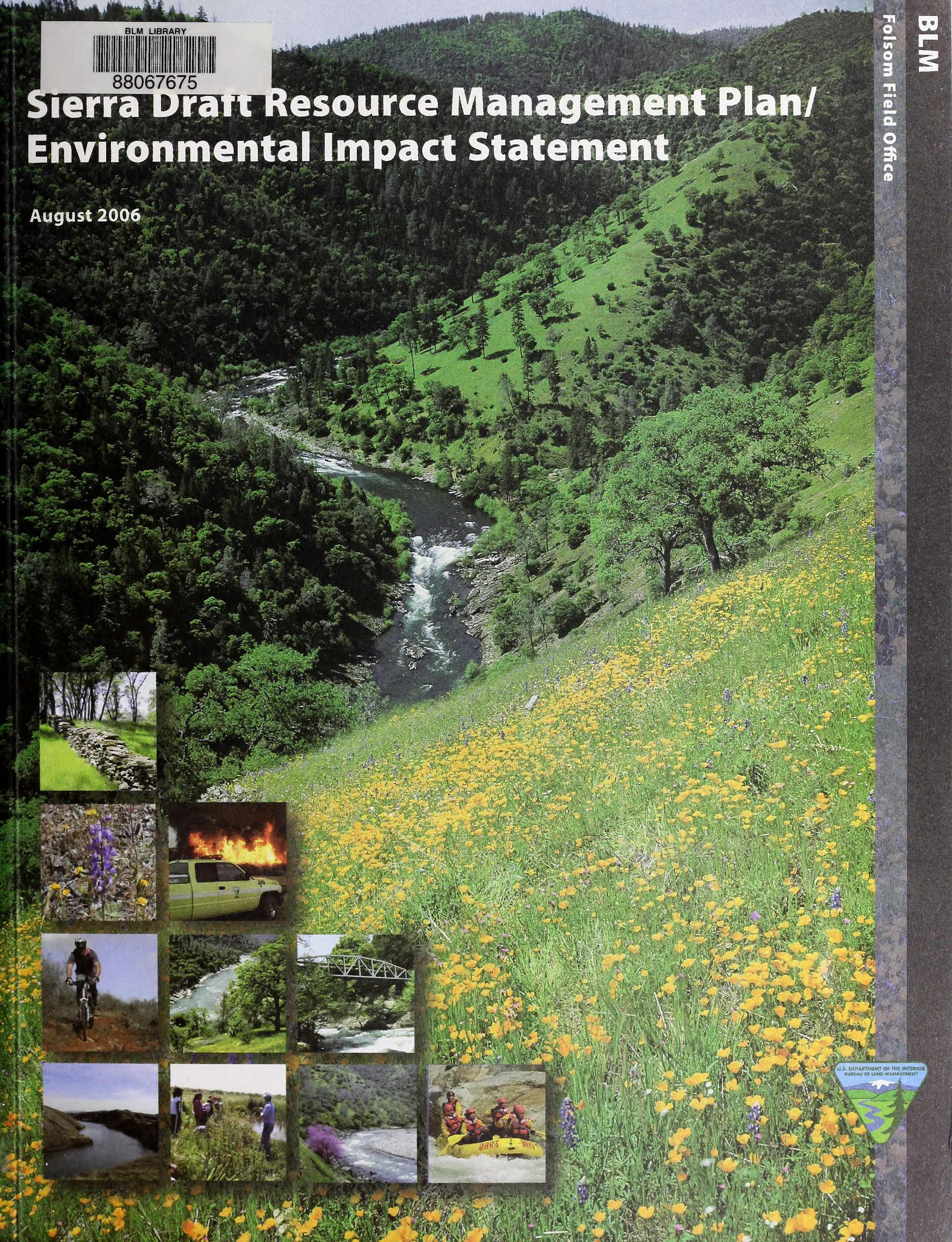
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Sierra Draft Resource Management Plan/ Environmental Impact Statement

August 2006

Folsom Field Office

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Folsom Field Office

United States Department of the Interior
Bureau of Land Management

SIERRA DRAFT RESOURCE MANAGEMENT PLAN AND DRAFT ENVIRONMENTAL IMPACT STATEMENT

For the
Folsom Field Office
California

August 2006

E-mail address:
or
Mail Address:

William Haigh, Field Office Manager

Mike Pool, California State Director

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United States Department of the Interior
Public Lands Act of 1893
42 USC 3201 - 3203

SIERRA DRAFT RESOURCE MANAGEMENT PLAN

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

For the
Folsom Field Office
California

August 2006



William Ralph, Field Office Manager



Mike Pool, California State Director



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Folsom Field Office
63 Natoma Street
Folsom, California 95630
www.ca.blm.gov/folsom

In Reply refer to:
1610 (CA-180)P

Dear Reader:

Included for your review and comment is the Draft Sierra Resource Management Plan and Draft Environmental Impact Statement (Sierra Draft RMP/EIS) for the Folsom Field Office. This Draft RMP/EIS was prepared to meet the requirements of the Federal Land Policy and Management Act of 1976 by revising the Folsom Field Office's original 1983 land-use plan.

The purpose of the Sierra Draft RMP/EIS is to update the Folsom Field Office's existing land use planning decisions to better address current issues. The Sierra RMP, when completed, will provide goals, objectives, and management actions for approximately 231,000 acres of public land within the jurisdiction of the Folsom Field Office. Our planning effort has been comprehensive in nature. We evaluated past planning decisions, looked into addressing and resolving emerging issues, and updated our knowledge of existing conditions with current information.

Your review and written comments are appreciated. Comments concerning the Sierra Draft RMP/EIS will be considered in preparing the Sierra Proposed RMP/Final EIS. All written comments received, including names and addresses, will be responded to in the final document. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or disclosure from the Freedom of Information Act, you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses will be made available for public inspection in their entirety. To be considered, comments must be postmarked no later than 90 days from the date the Environmental Protection Agency publishes the Notice of Availability for the Sierra Draft RMP/EIS in the Federal Register. Please submit your comments to:

E-mail Address: caformp@ca.blm.gov

or

Mail Address: Bureau of Land Management
Folsom Field Office
Attention: RMP Coordinators
63 Natoma Street
Folsom, CA 95630

An electronic version of the Sierra Draft RMP/EIS, including associated maps and appendices, may also be available online at the following site (pending web accessibility): <http://www.ca.blm.gov/folsom/>. Public meetings will be held to obtain additional input on the Sierra Draft RMP/EIS. The dates and locations of these meetings will be published in the local media. Please contact the Folsom Field Office at (916) 985-4474 for more information.

Sincerely,

William S. Haigh
Folsom Field Manager

TAKE PRIDE
IN AMERICA



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Federal Field Office
22100 Central Expressway
P.O. Box 250
Flagstaff, Arizona 86001

BLM Field Office
22100 CA-1007

Dear Sir/Madam:

Included in your review and comment is the Draft Environmental Impact Statement (EIS) for the proposed action of the Federal Land Policy and Management Act (FLPMA) 102-177. The EIS was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and the FLPMA. The EIS is available for public review and comment at the following location:

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The purpose of the EIS is to inform the public of the proposed action and its potential impacts. The EIS also provides a forum for the public to express its views on the proposed action. The EIS is available for public review and comment at the following location: [Location information]. The EIS is available for public review and comment at the following location: [Location information].

Your review and comment are appreciated. Comments should be submitted to the following location: [Location information]. Comments should be submitted to the following location: [Location information]. Comments should be submitted to the following location: [Location information].

22100 Central Expressway
P.O. Box 250
Flagstaff, Arizona 86001
Federal Field Office
Attention: BLM Coordinator

An electronic version of the EIS is available at the following location: [Location information]. An electronic version of the EIS is available at the following location: [Location information]. An electronic version of the EIS is available at the following location: [Location information].

William S. Long
Federal Field Manager

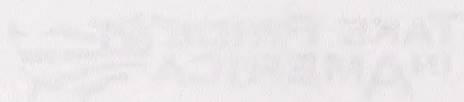


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AQMD	Air Quality Management District	
ARAA	Antelope Valley Grasslands State Park	
ADM	Animal and Plant Health Inspection Service	
BLA	Bureau of Indian Affairs	
BLM	Bureau of Land Management	
BMP	Best Management Practices	
CALFED	California Bay Delta Program	
CASHE	Compliance Assessment of Air Quality and Environmental	
CDF	California Department of Forestry and Fire Protection	
CDFO	California Department of Fish and Game	
CDPR	California Department of Pesticide Regulation	
CEQA	California Environmental Quality Act	
CFR	Code of Federal Regulations	
CRAA	Colorado River Aqueduct	
CRP	Colorado River Reserve	
CVAA	Central Valley Assessment Act	
DOI	U.S. Department of the Interior	
EIS	Environmental Impact Statement	
EPA	U.S. Environmental Protection Agency	
ERMA	Executive Recreational Management Plan	
ESA	Endangered Species Act	
ESF	Emergency Staffing and Resources	
FPO	Forest Plan Office	

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List of Abbreviations and Acronyms

ACEC	Area of Critical Environmental Concern
AML	Abandoned mine lands
APCD	Air Pollution Control District
AQMD	Air Quality Management Districts
ARAA	American River Assessment Area
AUM	Animal unit month
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best management practice
CALFED	California Bay Delta Program
CASHE	Compliance Assessment Safety, Health, and Environment
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRAA	Cosumnes River Assessment Area
CRP	Cosumnes River Preserve
CVAA	Central Valley Assessment Area
DOI	U.S. Department of the Interior
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
ESR	Emergency Stabilization and Rehabilitation
FFO	Folsom Field Office

FLPMA	Federal Land Policy and Management Act of 1976
FMP	Fire Management Plan
FMU	Fire Management Unit
FPA	Fire Program Analysis
IMP	Interim Management Policy
LWCF	Land and Water Conservation Fund
MBF	Thousand board feet
MFP	Management Framework Plan
MoRAA	Mokelumne River Assessment Area
MRAA	Merced River Assessment Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Naturally occurring asbestos
NOI	Notice of Intent
NPS	National Park Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
NWSRS	National Wild and Scenic Rivers System
OHV	Off-highway vehicle
PACFISH	Interim Management Strategies for Managing Anadromous Fish-Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California
PIF	Partners In Flight
RFD	Reasonably Foreseeable Development
RMP	Resource Management Plan
RNA	Research Natural Area

ROS	Recreation Opportunities Spectrum
ROW	Right-of-way
R&PP	Recreation and Public Purposes Act of 1954
SIP	California State Implementation Plan
SRMA	Special Recreation Management Area
SRAA	Stanislaus River Assessment Area
SYU	Sustained Yield Unit
TRAA	Tuolumne River Assessment Area
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USC	U.S. Code
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VER	Valid existing right
VRM	Visual Resource Management
WFU	Wildland Fire Use
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUI	Wildland-urban interface
YRAA	Yuba River Assessment Area

Executive Summary

The Bureau of Land Management (BLM) has prepared the Sierra Draft Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS) to provide direction for managing public lands administered by the Folsom Field Office (FFO or field office) and to analyze the environmental effects resulting from implementing the alternatives presented.

The Sierra RMP planning area includes approximately 231,386 acres of BLM-managed surface acres and approximately 300,000 additional subsurface acres (mineral estate) in central California. The geographic area includes FFO-managed public lands within the counties of Yuba, Sutter, Colusa, Nevada, Placer, El Dorado, Alpine, Amador, Calaveras, San Joaquin, Tuolumne, Mariposa, Sacramento, Stanislaus, and Merced. Most public land is between 1,000 and 4,000 feet above mean sea level. Public land is fragmented and dispersed, and parcels are often small in size and irregular in shape. Public land tends to be most concentrated in river corridors. Approximately 1,000 individual parcels of public land are involved in the RMP. These 1,000 parcels are thoroughly intermixed with private property. Access to public land is often limited or nonexistent.

This RMP incorporates BLM-administered lands in the planning area into nine "assessment areas." These assessment areas have been designated to focus land use decisions on issues specific to watersheds within the planning area.

The Proposed RMP is being prepared using BLM's planning regulations and guidance issued under the authority of the Federal Land Policy and Management Act of 1976 (FLPMA). A Draft EIS is also included in this document to meet the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations 1500-1508), and requirements of BLM's NEPA Handbook, H-1790-1.

Purpose and Need

The purpose of the Sierra RMP is to provide guidance in the management of the 231,386 acres of FFO-managed land that will:

1. Lead to land ownership and access patterns in response to urban growth issues and consolidate BLM land management responsibilities;
2. Guide and focus recreational activities;
3. Protect significant natural and cultural resources; and
4. Make recommendations regarding the management of important river corridors.

The Sierra RMP will also address additional planning issues raised during the scoping process and the changed management situation that led to the initiation of this project.

The need to revise the Sierra Management Framework Plan (MFP) arises from numerous changes in circumstances since the current land use plan decisions were adopted. The FFO currently operates under the Sierra MFP, as amended. This MFP was completed in 1983 and was amended in 1988, 1993, 1995, and 1998 to provide updated management strategies to meet changing resource conditions; new laws, rules, regulations, and BLM policies; and to meet emerging public needs. The 1988 plan amendment was the most comprehensive of the amendments. Later amendments addressed site-specific actions. Since completion of the Sierra MFP, the Sierra foothill region has experienced exponential population growth. This growth has resulted in a tremendous increase in the demand for and the diversity of public uses/activities on FFO-managed lands. The conflicts associated with wildland/urban interface have become more frequent as the rural character of the foothills has transformed into a more urban environment. The current MFP does not adequately address threatened or endangered species issues. The FFO also needs to complete wild and scenic river eligibility and suitability studies and make recommendations for seven river segments in five different watersheds in the Sierra RMP area.

Planning Process and Public Collaboration

BLM officially initiated the planning process for the Sierra RMP with publication of a Notice of Intent in the *Federal Register* on November 29, 2004. Media releases requested public input and announced public scoping open houses, which were held in Colfax, Grass Valley, Placerville, Jackson, San Andreas, Sonora, and Mariposa between January 12 to March 23, 2005.

Workshops were held on March 1, 2006, to discuss social/economic issues and concerns in the FFO-managed area and to increase public involvement in the development of the Sierra RMP/EIS. The workshops focused on assisting characterization of existing conditions and trends in local communities and the wider region that may affect and be affected by the FFO's land use planning decisions.

Management Alternatives

The basic goal of developing alternatives was to explore the range of use options, protection options, and management tools to find the optimal balance for the FFO. Alternatives had to: meet the project purpose and need; be reasonable (i.e., implementable); provide a mix of resource protection, management use, and development; be responsive to the planning issues; meet established planning criteria (Chapter 1); and meet federal laws, regulations, and BLM planning policy.

Four alternatives have been developed for detailed analysis in the Sierra Draft RMP/EIS. Alternative A, continuation of current management as the "no action" alternative, was developed using existing planning decisions and policies and existing land use allocations. Alternatives B, C, and D (action alternatives) were developed with input from public scoping and collaborative work among the BLM interdisciplinary planning team to represent a range of approaches to balancing use and protection of the FFO's resources. The Preferred Alternative (Draft RMP) is Alternative D. Table ES-1 at the

end of this section provides a summary of the key aspects of the alternatives, separated by management areas.

Preferred Alternative

The preferred alternative was developed by the FFO, with input from Tribes, state and county governments, other federal agencies, interested organizations, and the public. The FFO considers the preferred alternative as the best approach to meeting the purpose and need of this project, addressing the planning issues, and providing the optimal combination of flexibility and balance in managing both resources and land uses in the planning area. Factors considered during this selection process included: environmental impacts of the alternatives; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations.

Environmental Consequences

The management alternatives were specifically configured to maximize benefits and minimize adverse effects on both ecosystem function and the human environment. Effects from different management actions under all alternatives were analyzed by individual FFO programs (i.e., fish and wildlife, recreation, energy and minerals, land and realty, etc.). Detailed descriptions of the direct and indirect impacts of resource management as a result of the alternatives (for each FFO program) are provided in Chapter 4, along with a discussion of the possible cumulative impacts that could result from actions taken. The changes likely to result from the Alternatives are generally subtle in nature, with mostly minor or negligible impacts.

Organization of this Document

This Draft RMP/Draft EIS is composed of the following sections:

- Chapter 1, *Introduction*, provides background on the planning effort, including a brief description of the planning area, purpose, and need for the plan, and an outline of the planning process.
- Chapter 2, *Alternatives*, discusses in detail the proposed actions for each alternative for resources and uses in the planning area.
- Chapter 3, *Affected Environment*, provides a description and analysis of the current environmental conditions and uses of public lands in the planning area.
- Chapter 4, *Environmental Consequences*, provides an analysis of the effects, both beneficial and adverse, of implementation of the management goals, objectives, and proposed actions for each of the alternatives.

- Chapter 5, *Coordination and Consultation*, describes the processes of gathering public input and consultation with other agencies and jurisdictions during development of this RMP.
- *Appendices* include appendices that support analyses and conclusions of the planning process.

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Theme of Alternative	Continues current management direction	Emphasizes environmental protection	Emphasizes recreation and consumptive uses	Balances environmental protection with recreation and consumptive uses
Special Designations				
ACECs (existing)				
Ione Soils ACEC	Yes (85 acres)	Yes (85 acres)	Yes (85 acres)	Yes (85 acres)
Ione Manzanita ACEC	Yes (123 acres)	Yes (123 acres)	Yes (123 acres)	Yes (123 acres)
Nissenan Manzanita ACEC	Yes (73 acres)	Yes (73 acres)	Yes (73 acres)	Yes (73 acres)
Red Hills ACEC	Yes (7,184 acres)	Yes (7,184 acres)	Yes (7,184 acres)	Yes (7,184 acres)
Limestone Salamander ACEC	Yes (1,728 acres)	Yes (1,728 acres)	Yes (1,728 acres)	Yes (1,728 acres)
Merced River ACEC	Yes (2,836 acres)	Yes (2,836 acres)	Yes (2,836 acres)	Yes (2,836 acres)
Total (existing)	(6) 12,029 acres	(6) 12,029 acres	(6) 12,029 acres	(6) 12,029 acres
ACECs (proposed designations)				
Pine Hill Preserve ACEC	No	Yes (3,236 acres)	No	Yes (3,236 acres)
Cosumnes River Preserve ACEC	No	Yes (2,035 acres)	No	Yes (2,035 acres)
Spivey Pond ACEC	No	Yes (54 acres)	No	Yes (54 acres)
Deadman's Flat ACEC	No	Yes (796 acres)	No	Yes (796 acres)
Dutch Flat/Indiana Hill RNA	No	Yes (320 acres)	No	Yes (320 acres)
Bagby Serpentine ACEC	No	Yes (5,775 acres)	No	Yes (5,775 acres)

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Yuba Brownsville ACEC	No	Yes (198 acres)	No	No
Total	0 0 acres	(7) 12,415 acres	0 0 acres	(6) 12,217 acres
ACEC additions (proposed)				
Red Hills ACEC	No	Yes (2,824 acres)	No	Yes (2,824 acres)
Ione Manzanita ACEC	No	Yes (141 acres)	No	Yes (141 acres)
Limestone Salamander ACEC	No	Yes (473 acres)	No	Yes (473 acres)
Total	0 0 acres	(3) 3,439 acres	0 0 acres	(3) 3,439 acres
Total ACEC designations	(6) 12,029 acres	(16) 27,883 acres	(6) 12,029 acres	(15) 27,685 acres
Wild and Scenic Rivers (existing)				
South Yuba (State of California wild and scenic river only)	Yes (2,372 acres, 9.8 miles)	Yes (2,372 acres, 9.8 miles)	Yes (2,372 acres, 9.8 miles)	Yes (2,372 acres, 9.8 miles)
North Fork American	Yes (6,487 acres, 11.1 miles)	Yes (6,487 acres, 11.1 miles)	Yes (6,487 acres, 11.1 miles)	Yes (6,487 acres, 11.1 miles)
Tuolumne	Yes (1,395 acres, 4.9 miles)	Yes (1,395 acres, 4.9 miles)	Yes (1,395 acres, 4.9 miles)	Yes (1,395 acres, 4.9 miles)
Merced	Yes (3,995 acres, 14.6 miles)	Yes (3,995 acres, 14.6 miles)	Yes (3,995 acres, 14.6 miles)	Yes (3,995 acres, 14.6 miles)
Total	(4) 14,249 acres, 40.4 miles	(4) 14,249 acres, 40.4 miles	(4) 14,249 acres, 40.4 miles	(4) 14,249 acres, 40.4 miles
Wild and Scenic Rivers (recommended eligible and suitable)				
South Fork American	No	Yes (2,122 acres, 22.2 miles)	Yes (2,122 acres, 22.2 miles)	Yes (2,122 acres, 22.2 miles)
North Fork Cosumnes	No	Yes (1,605 acres, 25.1 miles)	No	No
Middle Fork Cosumnes	No	Yes (1,819 acres, 20.2 miles)	No	No

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Cosumnes	No	Yes (541 acres, 10.4 miles)	No	No
North Fork/Main Mokelumne	No	Yes (3,738 acres, 20.2 miles)	No	Yes (3,738 acres, 20.2 miles)
North Fork Tuolumne	No	Yes (1,141 acres, 7.2 miles)	No	No
North Fork Merced	No	Yes (1,880 acres, 6.4 miles)	No	No
Total	(0)	(7) 12,845 acres, 111.7 miles	(1) 2,122 acres, 22.2 miles	(2) 5,860 acres, 42.4 miles
Total (Wild and Scenic Rivers)	(4) 14,249 acres, 40.4 miles	(11) 27,094 acres, 152.1 miles	(5) 16,371 acres, 62.6	(6) 20,109 acres, 82.8 miles
Wilderness Study Area (existing)				
Merced River Wilderness Study Area	Yes (11,643 acres*)	Yes (11,643 acres*)	Yes (11,643 acres*)	Yes (11,643 acres*)
Total (Special Designations)	(11) 37,921 acres	(28) 66,620 acres	(12) 40,043 acres	(22) 59,437 acres
* The acreage total for the Merced River Wilderness Study Area does not include 540 acres in the Merced Wild and Scenic River corridor (wild section) and 900 acres in the proposed North Fork Merced Wild and Scenic River corridor.				
Recreation				
Special Recreation Management Area (SRMA)/Extensive Recreation Management Area (ERMA) designations				
South Yuba River	No	Yes (6,685 acres)	Yes (6,685 acres)	Yes (6,685 acres)
North Fork American River	No	Yes (7,244 acres)	Yes (7,244 acres)	Yes (7,244 acres)
South Fork American River	No	Yes (6,365 acres)	Yes (6,365 acres)	Yes (6,365 acres)
Merced River	No	Yes (23,681 acres)	Yes (23,681 acres)	Yes (23,681 acres)
Red Hills	No	No	Yes (10,131 acres)	No
Total	(0) 0 acres	(4) 43,975 acres	(5) 54,106 acres	(4) 43,975 acres
Total (ERMAs)	No	187,411 acres	177,288 acres	187,411 acres

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Target shooting in proposed SRMAs				
South Yuba River in WSR corridor	No	No	No	No
North Fork American River	Yes	No	Yes (in designated areas, if any)	Yes (in designated areas, if any)
South Fork American River	No	No	No	No
Merced River	No	Yes (outside 0.5 miles of river)	Yes (outside 0.5 miles of river)	Yes (outside 0.5 miles of river)
Red Hills	No	No	No	No
Target Shooting in proposed ERMAs				
All ERMAs	Yes (unless signed closed)	Yes (in designated areas, if any)	Yes (unless signed closed)	Yes (unless signed closed)
Transportation and Access				
Non-motorized trails	42 miles	35 miles	82 mile	60 miles
Motorized vehicle/off-highway vehicle route designations for all FFO-managed land	Open (except where previously closed or limited)	Limited to designated routes (74 miles)	Limited to all existing routes (not previously closed)	Limited to designated routes (74 miles)
Lands and Realty				
Land tenure adjustment				
Acres adjusted over 10 years	15,000 acres, with emphasis on acquiring areas with both significant resources and recreational values	15,000 acres, with emphasis on acquiring areas with significant natural and cultural resources	15,000 acres, with emphasis on acquiring areas with significant recreational values	15,000 acres, with emphasis on acquiring areas with both significant resources and recreational values
Lands to be retained	Indeterminate: approximately 92,300 acres	154,265 acres	83,598 acres	91,765 acres
Land use authorizations				
Rights-of-ways cases processed per year (anticipated demand over next 20 years)	50, on a case-by-case basis	50, with emphasis on environmental protection	50, with emphasis on access and economic development	50, on a case-by-case basis

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Withdrawals/classifications				
Withdraw all FFO-managed land in wild and scenic river corridors and ACECs from mineral entry, include Andrews Creek in mineral withdrawal of Red Hills ACEC	No	Yes	No	Yes
Withdraw all FFO-managed land in the Yuba Goldfields from mineral entry	Some lands already withdrawn	Yes	No	Yes
Wildfire and Fire Ecology				
Implement the Fire Management Plan	Yes	Yes	Yes	Yes
Acres treated by mastication/hand	5,000 acres per decade	5,000 acres per decade, with emphasis on enhancing the environment	5,000 acres per decade, with emphasis on protecting private property	5,000 acres per decade, with emphasis on enhancing the environment and protecting private property
Acres treated by prescribed burning	250 acres per decade	6,505 acres per decade, with emphasis on enhancing the environment	6,505 acres per decade, with emphasis on protecting private property	6,505 acres per decade, with emphasis on enhancing the environment and protecting private property
Forestry and Woodlands				
Production in board feet	Targets driven by salvage and targets in community based plans	300,000 per year, with emphasis on old growth management	Gradually increased to 3 million per year over 20-year period	Average 100,000 to 250,000 per year, driven by community based plans
Livestock Grazing				
Number of allotments	44	12	62	34
Acres	58,911	44,414	69,178	57,482
Animal Unit Months (AUMs)	5,723	4,414	7,140	5,567

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Minerals and Energy				
Leasable				
Acres available for oil and gas leasing	37,000 (none available in national wildlife refuges)	37,000 (none available in national wildlife refuges)	76,000 (39,000 acres of national wildlife refuge under no surface occupancy)	37,000 (none available in national wildlife refuges)
Locatable (by anticipated demand over the next 20 years)				
Claims (total of active claims in any given year)	1,200	1,200	1,200	1,200
Notices of Operations per year	20	20	20	20
Plans of Operations per year	10	10	10	10
Salable				
Allow mineral material sales and free use permits in existing pits and other areas where impacts to other resources would be minimal	Yes	Yes	Yes	Yes
Visual Resources Management				
Class I	9,480 acres	30,628 acres	9,480 acres	17,063 acres
Class II	12,750 acres	200,758 acres	21,852 acres	80,271 acres
Class III	Indeterminate	0 acres	200,054 acres	134,052 acres
Class IV	Indeterminate	0 acres	0 acres	0 acres
Yuba River Assessment Area				
Designate the Deadman's Flat ACEC	No	Yes (796 acres)	No	Yes (796 acres)
Designate the Yuba Brownsville ACEC	No	Yes (198 acres)	No	No
Designate the South Yuba River SRMA	No	Yes (6,685 acres)	Yes (6,685 acres)	Yes (6,658 acres)
Adopt decisions of 'Inimim Forest Plan	Yes	Yes	Yes	Yes
Adopt decisions of Round Mountain Plan	Yes	Yes	Yes	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Adopt decisions of South Yuba River Comprehensive Management Plan	Yes	Yes	Yes	Yes
Interpret South Yuba River cultural resources	No	Yes	Yes	Yes
Seek ways to preserve and interpret the Davis-Randolph Mill	No	Yes	Yes	Yes
Take title to Army Corps of Engineers administered land in the Yuba Goldfields	No	Yes (2,500 acres)	Yes (2,500 acres)	Yes (2,500 acres)
Work with Yuba County to lease FFO-managed land near Brownsville for a transfer station	No	No	Yes (10 acres)	Yes (10 acres)
Visual Resource Management (VRM) class for the 'Inimim Forest	Case-by-case assessment	Class II (1,813 acres)	Class II (1,813 acres)	Class II (1,813 acres)
VRM class for the South Yuba River area	Class II (6,685 acres)	Class II (6,685 acres)	Class II (6,685 acres)	Class II (6,685 acres)
Grazing allocations	0 AUMs/ 0 acres	0 AUMs/ 0 acres	50 AUMs/ 500 acres	0 AUMs/ 0 acres
Withdraw FFO-managed land within the South Yuba River Comprehensive Management Plan area from mineral entry	Yes	Yes	Yes	Yes
Allow sale of sand and gravel on FFO-managed land in the Yuba Goldfields	Yes	Yes	Yes	Yes
Allow oil and gas development	Yes	Yes	Yes	Yes
Remediate mercury hazard in Humbug Creek	Yes	Yes	Yes	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Reduce fuel loading at the Wildland-Urban Interface (WUI)	Yes (1,900 acres per decade)	Yes (1,900 acres per decade)	Yes (1,900 acres per decade)	Yes (1,900 acres per decade)
American River Assessment Area				
Designate Spivey Pond ACEC	No	Yes (54 acres)	No	Yes (54 acres)
Designate Pine Hill Preserve ACEC	No	Yes (3,236 acres)	No	Yes (3,236 acres)
Designate Dutch Flat/Indiana Hill RNA	No	Yes (320 acres)	No	Yes (320 acres)
Designate North Fork American River SRMA	No	Yes (7,244 acres)	Yes (7,244 acres)	Yes (7,244 acres)
Designate South Fork American River SRMA (use South Fork American River Management Plan boundary)	No	Yes (6,365 acres)	Yes (6,365 acres)	Yes (6,365 acres)
Recommend South Fork American River as suitable to become part of national wild and scenic river system	No	Yes (2,122 acres, 22.2 miles)	Yes (2,122 acres, 22.2 miles)	Yes (2,122 acres, 22.2 miles)
Adopt decisions of South Fork American River Management Plan	Yes	Yes	Yes	Yes
Close and rehabilitate roads between Garrett Road and the North Fork American River	No	Yes	Yes	Yes
Close and rehabilitate Rewinkle Road, along the South Fork American River	No	Yes	Yes	Yes
Close Burnt Flat Road in the North Fork American River Canyon to motorized vehicle use	No	Yes	Yes	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Stabilize erosion on Truro Mine, Rewinkle, and Boulder Mine roads	No	Yes	Yes	Yes
Acquire Canyon Creek Trail and trailhead access	No	No	Yes	Yes
Acquire Blue Wing Trail access	No	No	Yes	Yes
Restore/develop Blue Wing Trail	No	No	Yes (2 miles)	Yes (2 miles)
Develop a new Stevens Trail trailhead	Yes	Yes	Yes	Yes
Acquire land and/or easements to complete the South Fork American River Trail system	Yes	Yes	Yes	Yes
Close Western States Trail to motorized vehicle use	No	Yes	No	Yes
Limit equestrian use to designated trails	Yes	Yes	Yes	Yes
Limit mechanized use to designated trails	Yes	Yes	Yes	Yes
Leave the Colfax shooting area (Burnt Flat) open to target shooting	Yes	No	Yes	Yes, with stipulations
Work with the Foresthill Range and Gun Club to find suitable FFO-managed land to lease as shooting range site	No	No	Yes	Yes
VRM class for North Fork American River	Class I (7,244 acres)	Class I (7,244 acres)	Class I (7,244 acres)	Class I (7,244 acres)
VRM class for South Fork American River, except Clark Mountain area	Class II (6,065 acres)	Class II (6,065 acres)	Class II (6,065 acres)	Class II (6,065 acres)
VRM class for Clark Mountain area	Class I (300 acres)	Class I (300 acres)	Class I (300 acres)	Class I (300 acres)

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
VRM class for the Pine Hill Preserve	Case-by-case basis	Class II (3,236 acres)	Class III (3,236 acres)	Class II (3,236 acres)
Grazing allocations	28 AUMs/ 427 acres	0 AUMs/ 0 acres	71 AUMs/ 692 acres	28 AUMs/ 427 acres
Withdraw all acquired land from mineral entry for 50 years	Yes	Yes	Yes	Yes
Withdraw South Fork American River Management Plan area from mineral entry for 50 years	Yes	Yes	Yes	Yes
Reduce fuel loading at WUI	Yes (1,700 acres per decade)	Yes (1,700 acres per decade)	Yes (1,700 acres per decade)	Yes (1,700 acres per decade)
Cosumnes River Assessment Area				
Recommend North Fork Cosumnes River as suitable to become part of the national wild and scenic river system	No	Yes (1,605 acres, 25.1 miles)	No	No
Recommend Middle Fork Cosumnes River as suitable to become part of the national wild and scenic river system	No	Yes (1,819 acres, 20.2 miles)	No	No
Recommend Cosumnes River (main) as suitable to become part of national wild and scenic river system	No	Yes (541 acres, 10.4 miles)	No	No
Develop cooperative management plan with El Dorado county to protect Indian Diggings cemetery	No	Yes	No	Yes
Interpret Indian Diggings cemetery	No	No	Yes	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Develop non-motorized trail from Bucks Bar to the Grizzly Flat or Mount Aukum areas	No	No	Yes (2.5 miles)	Yes (2.5 miles)
VRM class for North Fork Cosumnes	Case-by-case assessment	Class II (1,605 acres)	Class III (1,605 acres)	Class II (1,605 acres)
VRM class for Middle Fork Cosumnes	Case-by-case assessment	Class II (1,819 acres)	Class III (1,819 acres)	Class II (1,819 acres)
VRM class for Cosumnes River (main stem)	Case-by-case assessment	Class II (541 acres)	Class II (541 acres)	Class II (541 acres)
Grazing allocations	119 AUMs/ 926 acres	0 AUMs/ 0 acres	143 AUMs/ 1,384 acres	99 AUMs/ 646 acres
Reduce fuel loading at the WUI	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)
Mokelumne River Assessment Area				
Recommend North Fork/main Mokelumne River as suitable to become part of national wild and scenic river system	No	Yes (3,738 acres, 20.2 miles)	No	Yes (3,738 acres, 20.2 miles)
Maintain Ione Manzanita ACEC	Yes (123 acres)	Yes (123 acres)	Yes (123 acres)	Yes (123 acres)
Maintain Ione Tertiary Oxisol Soils ACEC	Yes (85 acres)	Yes (85 acres)	Yes (85 acres)	Yes (85 acres)
Expand Ione Manzanita ACEC	No	Yes (141 acres)	No	Yes (141 acres)
Close the Campo Seco parcel to motorized vehicle use	Yes	Yes	No	Yes
Close the Rancheria townsite parcel to motorized vehicle use	No	Yes	No	Yes
Work to implement the Coast to Crest trail project	No	Yes	Yes	Yes
Prohibit target shooting in the Campo Seco parcel	Yes	Yes	No	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
VRM class for Middle Fork Mokelumne River	Case-by-case assessment	Class I (824 acres)	Class III (824 acres)	Class I (824 acres)
VRM class for South Fork Mokelumne River	Case-by-case assessment	Class I (1,392 acres)	Class III (1,392 acres)	Class II (1,392 acres)
VRM class for North Fork/Main Stem Mokelumne River	Case-by-case assessment	Class II (3,738 acres)	Class II (3,738 acres)	Class I (3,738 acres)
Grazing allocations	420 AUMs/ 4,051 acres	0 AUMs/ 0 acres	470 AUMs/ 4,051 acres	392 AUMs/ 3,866 acres
Reduce fuel loading at the WUI	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)
Stanislaus River Assessment Area				
Acquire land on Table Mountain to preserve vernal pools/swales	No	Yes	No	Yes
Acquire land with Chinese Camp brodiaea and California verbena populations	No	Yes	No	Yes
Survey Crystal Palace Cave to its determine location relative to FFO-managed land	No	Yes	Yes	Yes
Survey Crystal Palace Cave to determine whether it is significant	No	Yes	No	No
VRM class for New Melones/Stanislaus River area	Case-by-case assessment	Class II (7,108 acres)	Class III (7,108 acres)	Class II (7,108 acres)
Grazing allocations	250 AUMs/ 2,223 acres	100 AUMs/ 600 acres	285 AUMs/ 2,450 acres	167 AUMs/ 1,359 acres
Reduce fuel loading at the WUI	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)
Tuolumne River Assessment Area				
Maintain Red Hills ACEC	Yes (7,184 acres)	Yes (7,184 acres)	Yes (7,184 acres)	Yes (7,184 acres)
Expand Red Hills ACEC	No	Yes (2,824 acres)	No	Yes (2,824 acres)
Designate Red Hills SRMA	No	No	Yes (10,131 acres)	No

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Maintain Nissenan Manzanita ACEC	Yes (73 acres)	Yes (73 acres)	Yes (73 acres)	Yes (73 acres)
Recommend North Fork Tuolumne River as suitable to become part of national wild and scenic river system	No	Yes (1,141 acres, 7.2 miles)	No	No
Develop new Red Hills ACEC Plan	Yes	Yes	No	Yes
Work with Tuolumne County to lease FFO-managed land to the County for Big Oak Flat Little League Field	No	No	Yes	Yes
Work with Tuolumne County to lease FFO-managed land to the County to establish a youth camp	No	No	Yes	Yes
Close motorized vehicle access to Ophir Mine	No	Yes	No	Yes
Stabilize OHV-caused erosion on Bald Mountain	No	Yes	Yes	Yes
Work to implement the Hetch Hetchy Railroad rails-to-trails project	No	No	Yes	Yes
Develop an agreement with the local community to protect and maintain the Chinese Camp cemetery	No	Yes	No	Yes
Preserve the Westside and Cherry Valley Railroad grade and its setting	No	Yes	Yes	Yes
VRM class for the Tuolumne Wild and Scenic River	Class I (1,396 acres)	Class I (1,396 acres)	Class I (1,396 acres)	Class I (1,396 acres)
VRM class for the North Fork Tuolumne	Case-by-case assessment	Class I (1,141 acres)	Class II (1,141 acres)	Class I (1,141 acres)

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
VRM class for Turnback Creek	Case-by-case assessment	Class I (530 acres)	Class II (530 acres)	Class II (530 acres)
VRM class for the Red Hills	Case-by-case assessment	Class II (10,131 acres)	Class III (10,131 acres)	Class II (10,131 acres)
VRM class for Lake Don Pedro/Highway 49 viewshed	Case-by-case assessment	Class II (11,344 acres)	Class III (11,344 acres)	Class III (11,344 acres)
Grazing allocations	Case-by-case assessment	667 AUMs/ 4,609 acres	1130AUMs/ 10,075 acres	984 AUMs/ 8,886 acres
Reduce fuel loading at the WUI	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)	Yes (1,000 acres per decade)
Merced River Assessment Area				
Maintain Limestone Salamander ACEC	Yes (1,728 acres)	Yes (1,728 acres)	Yes (1,728 acres)	Yes (1,728 acres)
Maintain Merced River ACEC	Yes (2,836 acres)	Yes (2,836 acres)	Yes (2,836 acres)	Yes (2,836 acres)
Designate Bagby Serpentine ACEC	No	Yes (5,775 acres)	No	Yes (5,775 acres)
Expand Limestone Salamander ACEC	No	Yes (473 acres)	No	Yes (473 acres)
Designate the Merced River SRMA	No	Yes (23,681 acres)	Yes (23,681 acres)	Yes (23,681 acres)
Recommend North Fork Merced River as suitable to become part of national wild and scenic river system	No	Yes (1,880 acres, 6.4 miles)	No	No
Work with Mariposa County to lease FFO-managed land to the County for a community park	No	No	Yes	Yes
Protect graves at the Railroad Flat campground	Yes	Yes	Yes	Yes
Prohibit overnight camping on the south side of the Merced River (without FFO permission)	No	Yes	Yes	Yes

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Prohibit discharge of firearms within 0.5 mile of the Merced River	Yes	Yes	Yes	Yes
Interpret Merced River cultural resources	No	No	Yes	Yes
Close motorized vehicle access to Governor/Live Oak Mine	No	Yes	No	Yes
Acquire legal access to the Schroeder Mine	No	Yes	No	Yes
Maintain and reconstruct the Merced River trail	No	Yes	Yes	Yes
VRM class for the Merced WSR (wild section only)	Class I (540 acres)	Class I (540 acres)	Class I (540 acres)	Class I (540 acres)
VRM class for the North Fork Merced	Case-by-case assessment	Class I (1,141 acres)	Class II (1,141 acres)	Class I (1,141 acres)
VRM class for the Merced River Wilderness Study Area	Case-by-case assessment	Class I (11,643 acres)	Class III (11,643 acres)	Class II (11,643 acres)
VRM class for the Lake McClure/ Highway 49 viewshed	Case-by-case assessment	Class II (25,967 acres)	Class III (25,967 acres)	Class II (25,967 acres)
Grazing allocations	3,897 AUMs/ 42,298 acres	3,647 AUMs/ 39,205 acres	4,991 AUMs/ 49,926 acres	3,897 AUMs/ 42,298 acres
Reduce fuel loading at the WUI	Yes (3,000 acres)	Yes (3,000 acres)	Yes (3,000 acres)	Yes (3,000 acres)
Central Valley Assessment Area				
Designate Cosumnes River Preserve ACEC	No	Yes (2,035 acres)	No	Yes (2,035 acres)
Acquire additional wetland and riparian habitat in fee or easement to add to the Cosumnes River Preserve	No	Yes (4,000 acres)	Yes (2,000 acres)	Yes (2,000 acres)

Table ES-1 Summary of Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D
Work to implement the Coon Creek and Auburn Ravine riparian/wetland project	No	Yes	No	Yes
Work to implement the Honcut Creek and Yuba Goldfields riparian/wetland project	No	Yes	No	Yes
Work to implement the Cosumnes River Preserve wetland project	Yes	Yes	Yes	Yes
VRM class for the Cosumnes River Preserve	Case-by-case assessment	Class II (2,035 acres)	Class III (2,035 acres)	Class II (2,035 acres)
Oil and gas leasing/development	Yes (no leasing in national wildlife refuges)	Yes (no leasing in national wildlife refuges)	Yes (no surface occupancy within national wildlife refuges)	Yes (no leasing in national wildlife refuges)

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Chapter 1

Introduction

This draft of the Sierra Resource Management Plan (RMP) and Environmental Impact Statement (EIS) has been prepared over the past year and is now ready for public review and comment. Public involvement has been an integral part of the planning process to date. This involvement has allowed the Bureau of Land Management (BLM) to better identify issues and refine our understanding of resource conditions and public expectations. Public involvement is crucial to the success of this plan.

1.0 Purpose and Need for the Action

The purpose of the Sierra RMP is to provide guidance in the management of the 231,386 acres of public land administered by the Folsom Field Office (FFO); this guidance will:

1. Lead to land ownership and access patterns in response to urban growth issues and consolidate the FFO's land management responsibilities;
2. Guide and focus recreational activities;
3. Protect significant natural and cultural resources from public land users; and
4. Make recommendations regarding the management of important river corridors.

The Sierra RMP will also address additional planning issues raised during the scoping process and the changed management situation that led to the initiation of this project.

The need to revise the Sierra Management Framework Plan (MFP) arises from numerous changes in circumstances since the current land use plan decisions were adopted. The FFO currently operates under the Sierra MFP, as amended. This MFP was completed in 1983 and amended in 1988, 1993, 1995, and 1998 to provide updated management strategies to meet changing resource conditions; new laws, rules, regulations, BLM policies; and to meet emerging public needs. The 1988 plan amendment was the most comprehensive of the amendments. This amendment focused on the adjustment of FFO's ownership pattern to improve management and meet national, state, and local needs. Later amendments addressed the management and expansion of the Red Hills ACEC (1993) and a land exchange involving the Ione Tertiary Oxidol Soils ACEC (1998).

Since completion of the Sierra MFP, the Sierra foothill region has experienced exponential population growth. This growth has resulted in a tremendous increase in the demand for and the diversity of public uses/activities on FFO-managed lands. The conflicts associated with the wildland/urban interface (WUI) have become more frequent as the rural character of the foothills has transformed into a more urban environment. The current MFP does not adequately address threatened or endangered species issues.

The FFO also needs to complete wild and scenic river eligibility and suitability studies and make recommendations for several river segments in seven different watersheds in the planning area.

1.1 Description of the Planning Area

The planning area is the FFO's area of management responsibility (Maps 1a and 1b in Appendix A). The planning area comprises all or portions of 15 counties in central California: Yuba, Sutter, Colusa, Nevada, Placer, El Dorado, Alpine, Amador, Calaveras, San Joaquin, Tuolumne, Mariposa, Sacramento, Stanislaus, and Merced. The planning area includes all land within this region, regardless of ownership. A total of 230,000 acres of FFO-managed lands are in the planning area. In addition, approximately 300,000 acres of subsurface mineral estate are administered by the field office, which includes approximately 72,000 acres of nonfederal surface lands where The FFO manages the subsurface mineral estate. The decisions promulgated in the RMP will only apply to the FFO-managed lands and mineral estate within the planning area, which are referred to as the decision area. Table 1-1 presents the distribution of FFO-managed land and in ten counties that are part of the decision area.

Table 1-1 Distribution of Folsom Field Office-Managed Land

County	FFO Decision Area (Acres)	FFO Percent of County
Yuba	2,787	0.6
Nevada	17,354	3.59
Placer	22,147	2.31
El Dorado	23,834	2.08
Amador	8,260	2.13
Calaveras	34,033	5.14
Tuolumne	45,773	3.14
Mariposa	71,906	7.69
Sacramento	2,069	0.33
Stanislaus	17	<0.01

Most public land is between 1,000 and 4,000 feet above mean sea level. Public land is fragmented and dispersed, and parcels are often small in size and irregular in shape. Public land tends to be most concentrated in river corridors. Approximately 1,000 individual parcels of public land are involved in the RMP. These 1,000 parcels are thoroughly intermixed with private property. Access to public land is often limited or nonexistent.

This RMP incorporates FFO-managed lands in the planning area into nine “assessment areas.” These assessment areas have been designated to focus land use decisions on issues specific to watersheds within the planning area. The assessment areas are illustrated on Map 1b in Appendix A and are listed below:

- Yuba River Assessment Area (YRAA)
- American River Assessment Area (ARAA)
- Cosumnes River Assessment Area (CRAA)
- Mokelumne River Assessment Area (MoRAA)
- Stanislaus River Assessment Area (SRAA)
- Tuolumne River Assessment Area (TRAA)
- Merced River Assessment Area (MRAA)
- Central Valley Assessment Area (CVAA)
- Eastern Slope Assessment Area

The FFO does not administer any lands in the Eastern Slope Assessment Area; therefore, only eight assessment areas containing FFO-managed lands are presented and analyzed in this RMP/EIS.

1.2 Scoping/Planning Issues

Planning issues are defined through the analysis of conflicts, concerns, demands, and problems identified through public participation (scoping) and BLM staff analysis. The following planning issues were determined to be the most significant and in need of analysis and would represent a determination of future management direction.

1.2.1 Issues Addressed in this Plan

Issue 1: Land Ownership Adjustment and Public Access

The intermixed land ownership pattern of public lands in the planning area creates a major issue. Private and public lands are affected by the use and management of many of the 1,000 parcels of public land. Land uses that are legal on public land can be inconsistent with the use and enjoyment of adjacent private property.

Managing 1,000 isolated parcels scattered across 15 counties over a distance of 200 miles is inefficient. The nature of the parcels, many of which lack legal access, tends to encourage trespassing over private property to reach public land. This results in law enforcement issues, resource damage, and conflicts between private landowners, the public, and the FFO.

There is some demand by local governments, tribes, and nonprofit organizations for public land to be used for public purposes.

There is an intense demand for public access to public land. Again, the intermixed land ownership pattern makes it very difficult for the FFO to provide public access and meet this demand. Resolving this issue requires making decisions that define the pattern of public land ownership in the future and how access will be provided to these lands.

Issue 2: Fire and Fuels

Fire suppression and fuels management are issues of intense public interest. Suppression activities in the planning area are the responsibility of the California Department of Forestry and Fire Protection (CDF). Fuels management is the responsibility of the FFO.

The extensive development of rural properties for residential use increases adjacent to public land, coupled with extremely volatile fuel types and a long fire season, has created a very dangerous fire situation. The fire risk is high. The number of people at risk and the value of their personal property at risk are also high. This has resulted in greater demand for fuel reduction projects. These projects need to be coordinated with local Fire Safe Councils, state and local fire departments, and private landowners.

Two to three fire reduction projects are funded per year (with 300 acres treated), while about 300 fuel reduction projects are needed. This is a major concern to the public and to local and state agencies with fire suppression responsibilities in the planning area.

Issue 3: Rivers

About every 50 miles across the planning area, along the front of the Sierra Nevada Mountains, a major river flows from east to west and into the Central Valley of California. These rivers are the Yuba, the American, the Cosumnes, the Mokelumne, the Stanislaus, the Tuolumne, and the Merced. Each of these rivers has two to three forks that are rivers in their own right. The management of public land near these rivers is a major issue. The rivers have played a historical role in the economic, social, and environmental development of the region.

Portions of three rivers are designated as wild and scenic rivers. These rivers include the North Fork American, the Tuolumne, and the Merced. The South Yuba River has been found eligible and suitable for designation as a wild and scenic river, but it has not been designated as such to date, and one river has been identified as a study river under Public Law 90-542, the Wild and Scenic Rivers Act. The purpose of the Wild and Scenic Rivers Act is to preserve the free-flowing state of rivers listed in the National Wild and Scenic Rivers System or under study for inclusion in the system because of their outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. Rivers in the system are classified as wild, scenic, or recreational. The act establishes requirements applicable to water resource projects and protects both the river, or river segments and the land immediately surrounding them.

One of the most significant issues to be dealt with in the RMP is whether any of the rivers and creeks of the planning area are considered eligible and suitable for designation as wild and scenic rivers. Studies are being conducted as part of the RMP process to determine whether any of the rivers possess the outstandingly remarkable values necessary for designation.

Issue 4: Recreation Management

The enormous increase in population in the planning area has intensified the demand for recreation on public land. Not only has the demand increased, but the kinds of recreational activities taking place on public land have also increased, and conflicts are developing. Participants in off-highway vehicle (OHV) use and target shooting are facing increasing difficulties finding places to recreate where people do not object to various aspects of their activity. Noise, resource damage, fire hazards, and safety are issues of concern involving these activities.

The rivers are extremely popular as swimming and water play areas. Warm summer days bring hundreds of people to the rivers. Any place where a highway crosses a river over public land receives heavy recreational use. Conflicts with swimmers and sun bathers occur in areas where these activities are impacted by noise and siltation sometimes caused by suction dredging activities.

Excess demand for the various forms of boating has led to conflict. There is a need for rafting, beginning kayaking, and expert kayaking opportunities. Space on the river and areas at rapids, lunch and camping areas, parking areas, and put-in and take-out locations are all seeing increased demand and the need for thoughtful planning and conflict resolution.

Trails are enormously popular to a wide range of users. There is a demand for new trail systems and improvements and maintenance to existing trails. Trail use is often in conflict between motorized and non-motorized use, horses and mountain bikes, and mountain bikes and pedestrians.

Public lands are valued for the hunting opportunities they provide. Hunting demand for deer, turkey, pigs, quail, and doves is high, but such activity is becoming increasingly incompatible with increased residential development in the planning area.

Gold panning and suction dredging are also popular recreational pursuits. Meetings at one local club averages over 100 attendees. The noise and the siltation caused by their dredging activities often place them in conflict with other river users.

Caving, geo-caching, paint ball wars, Frisbee golf, and many other forms of recreation take place on public land.

The issues to be resolved are how to integrate the recreational activities within the area's land ownership pattern in a fair and equitable manner and how to allow recreational use without damaging resources or adversely affecting nearby private landowners.

Issue 5: Special Area Management

Unique and important areas, values, or resources in the planning area meet the criteria for protection and management under special area designations. These areas may have rare plants, soils, or wildlife or have special cultural, historical, visual, or recreational values. The designation and future management of these areas must be decided.

1.2.2 Issues Considered But Not Further Analyzed

The following issues raised during scoping are outside the scope of the Sierra RMP but may be addressed by the FFO at another time or through other means. These issues and a FFO response are identified below.

- **Physical and financial maintenance of fuels reduction projects.** The physical aspects of maintenance regularly will be addressed by the FFO's Fire Management Plan and annual staff work plans. Budgets for completing maintenance are controlled by Congress on an annual basis.
- **Type of rights-of-way issued.** The specifications of the rights-of-way (ROWs) vary on a case-by-case basis. The process and limitations of rights-of-way are determined by law and internal policy. All ROWs granted by the FFO must conform to the BLM guidance.
- **Removal of Red Hills soaproot from the sensitive species list.** The FFO will determine outside of the planning process whether the Red Hills soaproot should be kept on the Sensitive Species List. The field office will make an appropriate recommendation to the BLM California State Director, who will make a final decision.
- **Utilization of volunteers.** Recruitment and opportunities for volunteers is an ongoing FFO activity.
- **Issues related to trash and dumping at various locations on the public lands.** Law enforcement and clean-up priorities are not typically addressed in land use plans, but they are noted by FFO staff.
- **Campground hosting in the Merced River campgrounds.** Staffing decisions are made outside of the planning process.
- **Mariposite as a locatable mineral.** This determination is outside the land use planning process.
- **County land zoning impacts on adjacent public land use.** County zoning of rural residential and high density residential properties will continue to impact public lands with respect to the FFO's ability to protect key resources and control levels and kinds of acceptable use in the newly zoned environment. Uses that were once acceptable on public land (i.e., shooting,

OHV use, livestock grazing) are no longer acceptable to neighboring land owners.

Issues that will not be addressed are identified and explained below.

- **Conversion of undeveloped private land to urban and agricultural uses.** BLM does not have jurisdiction over the uses of private land.
- **Impacts of the Cinnabar development project near the North Fork Cosumnes River.** BLM does not have jurisdiction over the use of these lands.
- **Wilderness designation for the Merced River Wilderness Study Area.** Congress is the only authority capable of designating or releasing Wilderness Study Areas (WSAs).

1.3 Planning Criteria

1. The Sierra RMP and accompanying EIS will be developed in compliance with the Federal Land Policy and Management Act of 1976 (FLPMA), the National Environmental Policy Act (NEPA), BLM planning regulations and guidelines, and other applicable laws, rules, and regulations.
2. The planning area will be described by eight assessment areas, based on the major river watersheds.
3. OHV area and route selections will be made for all FFO-managed lands in the planning area.
4. Rangeland Health Standards and Guidelines will be incorporated into the RMP.
5. All data collected, analyzed, and presented in the planning process will meet national standards.
6. The planning process will involve the public as well as state and local governments, other agencies, organizations, tribal governments, and any other interested parties.
7. Planning decisions will be feasible. Planning actions and capital developments will be subject to financial constraints and availability of funds.
8. Recently developed activity and community-based plans will be incorporated into the RMP.

1.4 Planning Process

BLM has developed a process of land use planning to plan for and manage public lands consistently with the requirements of the FLPMA. This act requires the planning process to focus on the management of public lands, involve the public, and work toward BLM's mission of multiple use and sustained yield. BLM combines the planning process with the process to develop an EIS to comply with NEPA. The steps in the planning process are shown in Figure 1-1.

1.5 Related Plans

1.5.1 County/City Plans

The planning area encompasses all or portions of 15 central California counties (Map 1). The FFO administers federal surface acres in ten of the counties. Four of the remaining five counties do not have FFO-managed federal surface acres. These four counties, Colusa, Sutter, San Joaquin, and Merced, are located in the Central Valley Assessment Area. In the remaining one county (Alpine), BLM-administered land is administered by the Carson City District Office in Nevada.

The FFO routinely coordinates management activities across its scattered land pattern with the ten counties in which there is federal surface ownership. County planning staff, supervisors, and local law enforcement are the primary points of coordination. While planning efforts such as the RMP and the county general plan process provide an opportunity to evaluate consistency, the process of coordination and consistency review is ongoing.

The rapid population growth in the foothills and the changes in zoning patterns in the counties create a need for an adaptive management approach by FFO. Table 1-2 shows the general plan implementation dates for each of the ten counties with federal surface ownership.

Another form of local plan coordination that FFO has used is community-based planning. The FFO has completed four plans with the active participation of local landowners and land users. The FFO has completed two plans in Nevada County (the Inimim Forest Management Plan and the Round Mountain Management Plan); one plan has been completed in YRAA (the South Yuba River Comprehensive Management Plan); and one plan has been completed in ARAA (the South Fork American Management Plan). Two other community-based plans are nearing completion: the Iowa Hill Management Plan and the Cronan Ranch Management Plan, both located in the ARAA.

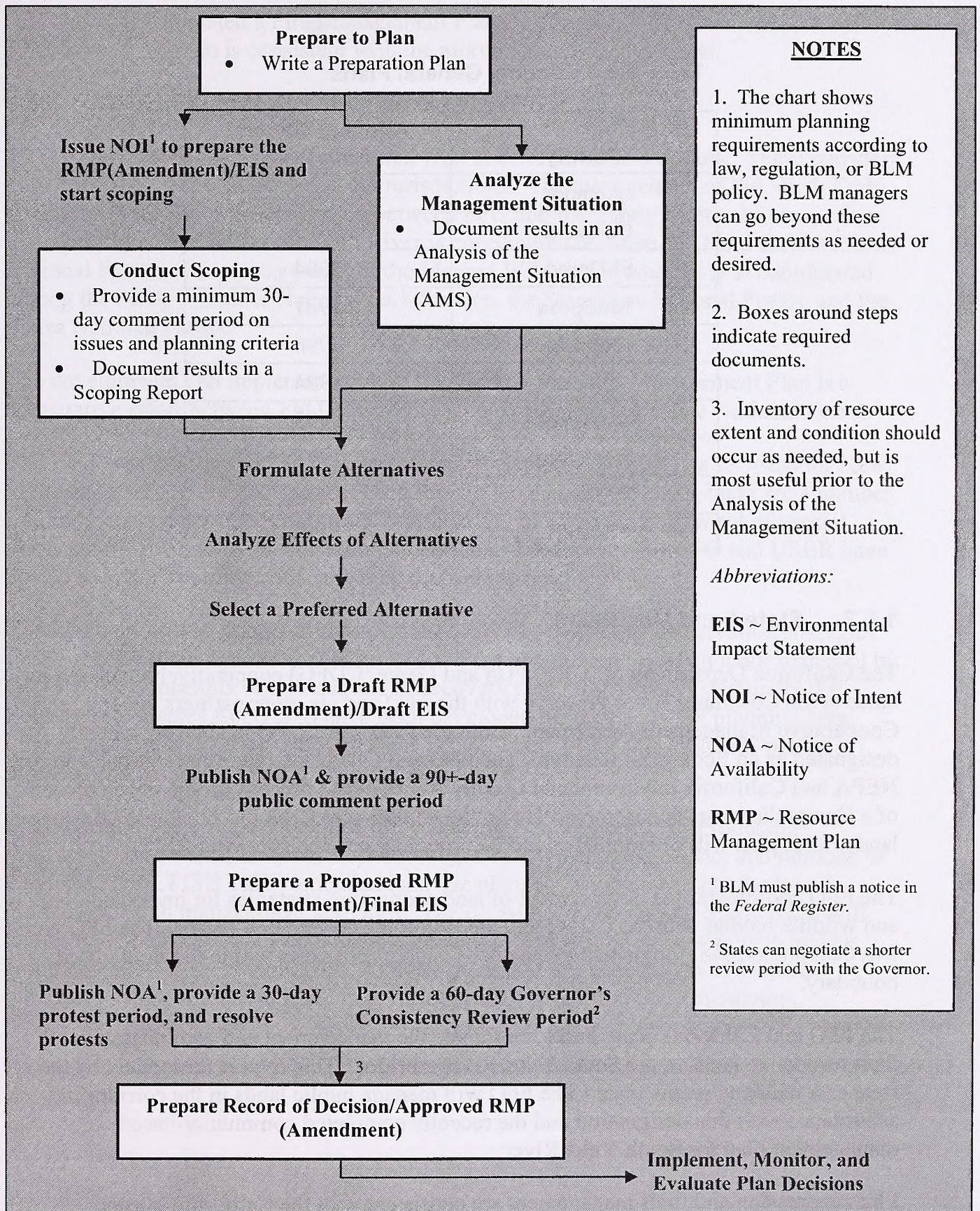


Figure 1-1 Steps in the Planning Process

**Table 1-2 County General Plans
Considered in the RMP**

County	Adopted General Plan Date
Amador	2005
Calaveras	2003
El Dorado	2004
Mariposa	1981
Nevada	1996
Placer	1994
Sacramento	1993
Stanislaus	1994
Tuolumne	1998
Yuba	1996

1.5.2 State Land Use Plans

The California Department of (CRP) Fish and Game (CDFG) cooperatively manages its lands at the Cosumnes River Preserve with the FFO and six other partners under a Cooperative Management Agreement. Both the FFO and CDFG lands were recently designated as an Ecological Reserve. The FFO and CDFG are the respective leads in the NEPA and California Environmental Quality Act (CEQA) process for the development of a Comprehensive Management Plan on the 45,000-acre CRP and Ecological Reserve lands. This plan will be completed and incorporated into the approved RMP.

The FFO coordinates the development of land acquisition strategies for important plant and wildlife habitat with the CDFG and the Wildlife Conservation Board. The FFO has two Comprehensive Acquisition Protection Plan (CAPP) areas within the field office boundary.

The FFO and California State Parks coordinate the management and administration of their respective lands in the South Yuba River corridor. This river is designated by the state as a wild and scenic river. The FFO will manage public lands in the corridor in accordance with this designation and the recently completed community-based management plan for South Yuba River.

Fire suppression and fuels management are consistent with the California Master Agreement between the U.S. Department of Agriculture, U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), Bureau of Indian Affairs (BIA), National Park Service (NPS), CDF, and the FFO, and with the Interagency Agreement for Cooperative Use of Prescribed Fire in California between USFS, USFWS, BIA, NPS, CDF, and BLM.

FFO has also completed a Fire Management Plan (FMP) for all the public lands in the RMP area. This plan is consistent with the aforementioned agreements.

1.5.3 Other Federal Agency Plans

The FFO manages lands in three national wild and scenic river corridors. These corridors pass through as many as three federal jurisdictions. The management of the North Fork American Wild River is coordinated between FFO and the Tahoe National Forest. The management of the Tuolumne Wild River is coordinated between FFO and the Stanislaus National Forest. The management of the Merced Wild and Scenic River is coordinated among the FFO, Yosemite National Park Service, the Stanislaus National Forest, and the Sierra National Forest.

The development and implementation of the South Fork Yuba Management Plan is a cooperative effort between FFO, California State Parks, and the Tahoe National Forest.

The FFO coordinates with the U.S. Bureau of Reclamation (USBR) on its plans for New Melones Reservoir and the Auburn Dam Project Area. In these areas, there are a number of joint management issues requiring coordination, including management of special status plants, fire and fuels, recreation, access, and recreation. The FFO and USBR have agreed to better coordinate management on these issues.

The FFO has worked cooperatively with the USFWS to develop conservation strategies for all special status species that occur or have the potential to occur on lands managed by the FFO (see Appendix A). A number of recovery plans for species listed under the Endangered Species Act (ESA) have been developed for species in the planning area. FFO management is consistent with these plans. These plans and strategies will be assessed and incorporated into the planning process.

The Interim Management Strategies for Managing Anadromous Fish-Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH 1995) amended land use plans to include these standards and guidelines for all management activities. The decisions in the revised Sierra RMP will incorporate the PACFISH standards and guidelines and will be consistent with and/or complementary to these strategies. Activity plans and implementation of projects pursuant to a revised Sierra RMP may further refine PACFISH implementation.

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Chapter 2

Alternatives

2.0 Introduction

This chapter describes management scenarios for the land and resources managed by the FFO. These scenarios include a “no action” alternative (called Alternative A) and three “action” alternatives (called Alternatives B, C, and D). The alternatives represent a reasonable range of approaches to managing land and activities consistent with law, regulation, and policy. Development of these management alternatives has been guided by the NEPA, FLPMA, and regulations, policy, and public input during the scoping process.

In some cases, the alternatives include specific actions and action plans to make necessary changes in resource management within the planning area. However, not all issues can be resolved in a RMP; some will require subsequent actions to determine how to reach desired conditions or achieve a desired result.

The FFO has the discretion to select an alternative in its entirety or to combine elements of the alternatives presented in this draft to develop the proposed RMP, which is the next step in the planning process. The reader may also select or combine elements of the various alternatives when providing comments on the plan. NEPA requires developing and testing several alternatives, including a No Action Alternative, to analyze the potential impacts that a set of actions could have on the area. According to NEPA, the FFO must consider these impacts in developing the RMP for the planning area, as described in Chapter 1.

This chapter starts with a discussion of how the alternatives were developed; summarizes the four alternatives and identifies the preferred alternative; discusses alternatives considered but eliminated from detailed analysis; describes each of the four alternatives in a narrative form; and then lists specific proposed actions by FFO program (i.e., soil resources, recreation, energy and minerals, etc.). The tables in the Executive Summary section compare key proposed actions and designations under each of the four alternatives. Where the existing plan, described in Alternative A, does not provide specific guidance on issues or program areas, overarching laws, regulations, and policies guide management. Alternatives B, C, and D provide additional guidance and direction for meeting relevant laws, regulations, and policy.

The combined input from guiding legislation/policies, public scoping, and interagency discussions led to a framework of alternatives that cover a relatively focused range of options.

2.0.1 Alternatives Development

The basic goal of developing alternatives was to explore the range of use options, protection options, and management tools that would achieve a balance between protection of the planning area's natural character and a variety of resource uses and management issues. Alternatives must: meet the project purpose and need (see Chapter 1); be viable and reasonable; provide a mix of resource protection, management use, and development; be responsive to issues identified in scoping; and meet the established planning criteria (see Chapter 1), federal laws and regulations, and BLM planning policy.

The alternatives identify different strategies for accomplishing the FFO's goals and meeting a variety of public needs. Alternative A (the No Action Alternative) is a continuation of current management and was developed from existing planning decisions, policies, land use allocations, and programs. Alternatives B, C, and D were developed with input from public scoping, discussions with governmental entities, and the collaborative work of the FFO interdisciplinary planning team.

Goals, which are broad statements of desired outcomes, were derived from law, policy, and the Department of the Interior's strategic plan. Objectives state more specifically a measurable target or targets associated with achieving goals. Management actions and allowable uses are the ways in which the BLM achieves its objectives and goals.

2.0.2 Summary of Alternatives

- **Alternative A** – Continues the present management direction. Because many of the decisions in existing plans are outdated or have been implemented, the description of Alternative A includes only portions of existing plans deemed relevant for analysis purposes.
- **Alternative B** – Emphasizes protection and preservation of natural and cultural resources. The alternative would allow only new activities that would enhance protection of natural and cultural resources found on FFO-managed lands.
- **Alternative C** – Emphasizes public use of FFO-managed land. Additional facilities would be provided to increase/promote public use of FFO-managed lands, additional timber would be harvested, grazing consumption would be increased, and land ownership adjustment would have the goal of consolidating public land in popular recreation areas.
- **Alternative D** – This is the preferred alternative. It balances environmental protection with public use of FFO-managed land.

2.0.3 Alternatives Considered but Eliminated from Detailed Analysis

Alternatives Increasing OHV Opportunities

Because the land ownership pattern in the planning area is scattered, with the FFO managing few contiguous blocks of land, the FFO did not analyze in detail alternatives that would increase OHV opportunities. These alternatives would exacerbate conflicts with adjacent private landowners and were not considered feasible.

Alternatives Inconsistent with Multiple Use and Sustained Yield

Alternatives which were appealing to some organizations and individuals but inconsistent with law and policy were not analyzed in detail. These potential alternatives included elimination of grazing, mining, timber harvests, and OHV use. Alternatives that promoted one land use to the exclusion of all others were also eliminated from consideration because they were inconsistent with BLM's multiple use mission. However, the alternatives analyzed in detail did include various combinations of eliminating or maximizing various resource uses and values in areas where conflicts exist.

Alternatives not Feasible

Such potential alternatives included those considered so costly that implementation was improbable. In this category were alternatives that required budget resources and investments in infrastructure, land treatments, and law enforcement at levels considered improbable to achieve. Alternatives were considered improbable where funding requirements were greater than have ever been allocated or where staffing levels needed to implement a plan were outside any reasonable expectation of achievement.

Alternatives Designating Utility Corridors

Because the land ownership pattern in the planning area is scattered, with the FFO managing few contiguous blocks of land, the FFO did not analyze in detail alternatives designating utility corridors. See the Lands and Realty section for decisions related to land use authorizations.

2.0.4 Narrative Description of Alternatives

Alternative A (Continues Present Management Direction)

Alternative A is derived from examining past planning decisions and outcomes and extending them into the future. The basis for this alternative is the Sierra MFP and land use decisions made in the absence of specific decisions or management direction provided by that plan. The plan was developed in the early 1980s and is quite general—typical of land use plans of that period. The general nature of the plan required many land use decisions based on an immediate interpretation of policy and management necessity. Overall, the outcome of this approach has been favorable, and many initiatives derived from this approach have received widespread public support. In some cases, the

FFO's assistance was needed by various partners at local, state, and federal government levels and led to specific land use decisions, such as the FFO's participation in the Pine Hill Preserve in the American River Assessment Area and the Cosumnes River Preserve in the Central Valley Assessment Area.

Collaboration with local communities has been accomplished using a "community based planning" approach which involves public involvement in every stage of planning, from scoping to implementation. This process has proven to be very effective in producing plans that have widespread public support. Community based planning appears to be very useful in planning for the management of the isolated and scattered public lands in the Sierra Nevada foothills. Several plans have been completed using this process with great success; however, the disadvantage of community based planning is that it is very time consuming. Under Alternative A (as well as the other alternatives), the 'Inimim, Round Mountain, South Fork American River, South Yuba River, and other community based plans would remain in effect. The community based planning process would continue into the future as the FFO's primary land use planning tool at the community level.

Under Alternative A, the right-of-way (ROW) and other land use authorizations would be issued on a case-by-case basis and would average about 50 cases per year (about half of which would be transfers of existing ROW interest). It is possible that land exchanges would be completed to provide improve access to FFO-managed, consolidate public land ownership along river corridors, and acquire special status species habitat and significant cultural resources; however, existing plans provide little specific direction. Land tenure changes have focused on the North and South Forks of the American River, the North Fork and Main Stem Cosumnes River, the North Fork and Main Stem Merced River, the Red Hills Area of Critical Environmental Concern, and the Pine Hill and Cosumnes River preserves. An average of 300 acres per year has been acquired. Land donations would be accepted where they advance the public interest. This would usually be riverfront property, rare plant or animal habitat, and access points to FFO-managed land. In this manner, 200 to 300 acres per year may be acquired. Land would be purchased if Land and Water Conservation Funds are provided by Congress. Historically, this is most applicable to the Pine Hill and Cosumnes River Preserves. About 200 acres per year have been acquired by this means. Public land sales rarely occur. When they do, they generally involve an inadvertent trespass involving a home being built partially on FFO-managed land.

Fire suppression would continue to be a high priority in every assessment area, although the current plan does not provide comprehensive direction. Fuels management projects are needed across the whole planning area. There are about 300 potential fuels reduction projects in total. The FFO would likely be limited by fiscal resources to three or five fuels projects per year for the foreseeable future. The FFO would continue to coordinate with 26 fire safe councils and over 100 communities at risk.

Recreation demand would continue to increase. The current plan does not provide guidance for the increases in recreation demand experienced in the planning area. White water boating, hiking, equestrian activities, shooting, hunting, OHV use, and suction

dredging would be the most popular uses, with other forms of recreation growing in popularity and affecting public land use demands. The demand comes from both private individuals and commercial organizations. There would be increasing competition between users. Under Alternative A, additional trails would be built, and existing trails would receive increased use.

Shooting and OHV use demand would remain strong. The existing plan provides little direction for managing these uses. Conflicts with the increasing urbanization of rural areas are not addressed. Existing use areas may eventually be closed due to public complaints of incompatible land use on FFO-managed land next to residential areas.

Heavy use of volunteers and local stewards would continue; however, the demand for recreation and the dispersal of recreational uses onto isolated public land parcels would exceed the FFO's ability to effectively administer these uses.

Mining claim administration for locatable minerals would continue at a level of about 1,200 claims (with about ten plans of operations and 20 notices filed per year). Most plans of operations involve gold prospecting in underground mine workings or suction dredging in rivers and large creeks. The plans are subject to environmental restrictions that ensure the protection of significant biological and cultural resources. Suction dredging in wild and scenic rivers would be allowed under approved plans as long as it does not impact significant biological and cultural resources or the river's outstandingly remarkable values. It is likely only a few claims would be developed into industrial mining operations.

The existing plan allows mineral material sales and free use in most of the planning area. Most free use permits have been limited to existing pits used primarily by local government. Interest in sand and gravel sales in the Yuba Goldfields would continue.

Oil and gas would be available for lease on 37,000 acres with high potential in the CVAA and the YRAA. Lands within national wildlife refuges would not be available. Historic development of federally managed oil and gas deposits in the planning area has been low and is expected to remain at relatively low levels in the future (refer to the Reasonably Foreseeable Development scenario for the planning area in Appendix D).

The existing plan calls for the FFO to increase forage production and manage grazing to provide 700 pounds per acre of residual mulch. However, grazing use has declined. Many ranchers are selling their ranches and getting out of the grazing business. Most grazing leases are held by individuals who do not depend on grazing for a central source of income (some of whom have no livestock). Many of these leases are relinquished upon renewal, and this trend may likely continue. An average of four leases is relinquished each year. Renewal of leases is determined on a case-by-case and is based on validity of the lease, size of the lease, resource condition, and economic considerations of both the lessee and the FFO.

The existing plan calls for the FFO to manage timber for a production base in accordance with Sustained Yield Unit-15. SYU-15's age was based on an inventory of the forestland

and harvest calculations that are now archaic. Thus, the FFO's management has over the years become increasingly focused on responsive management, emphasizing forest health. Since the mid-1980s, the FFO's timber harvest levels have varied, with highs of 2.5 million board feet in some years. In recent years, however, production has dropped substantially; most timber sales have normally involved the salvage of timber damaged by insects, disease, and fire. The existing plan allows for between 2.5 and 4 million board feet per year. The average salvage has been less than 250,000 board feet per year.

Under Alternative A, areas of critical environmental concern (ACECs), preserves, wild and scenic rivers, habitat for rare plants and animals, and significant cultural resources would continue to be the focal points of management planning, implementation, and land acquisition. Existing ACECs include the Ione Soil ACEC (85 acres), the Ione Manzanita ACEC (122 acres), the El Dorado Manzanita ACEC (73 acres), the Red Hills ACEC (6,610 acres), the Limestone Salamander ACEC (1,728 acres), and the Merced River ACEC (2,836 acres). Existing federal wild and scenic rivers include the North Fork American River (11 miles), the Tuolumne River (5 miles), and the Merced River (15 miles). The South Yuba is a state wild and scenic river (10 miles) however, as it has been determined to be eligible and suitable for the national system, FFO manages it as a federal wild and scenic river. Existing preserves include the Pine Hill Preserve (3,236 acres of FFO-managed land) and the Cosumnes River Preserve (2,035 acres of FFO-managed land). No new ACECs or other special management areas would be designated.

Alternative B

Alternative B would emphasize new activities that enhance protection and preservation of natural and cultural resources found on FFO-managed lands. Regardless of this emphasis, Alternative B (as well as the other alternatives) would adopt the decisions of the 'Inimim, Round Mountain, South Fork American River, South Yuba River, and other community based plans. The community based planning process would continue into the future as the FFO's primary land use planning tool at the community level.

Alternative B's emphasis on preservation of natural and cultural resources responds to the rapid growth and development occurring in central California. Placer, El Dorado, Sacramento, and Nevada counties are among the fastest growing counties in the state. With this growth, there has been significant decline in available habitat for sensitive plants and animals, and severe fragmentation of the remaining habitat. Scoping identified protection of significant biological and cultural resources as important public values. FFO-managed lands in the planning area have 23 federally listed species and 29 BLM sensitive species. The CDFG has 37 Conceptual Area Protection Plans within the planning area for acquisition and protection of important habitat for wildlife. Archaeologists have identified numerous significant cultural resources within the planning area, including prehistoric villages and historic-era townsites, trails, and gold mills.

The demands of increased population and development have resulted in a corresponding demand for more recreation sites, habitat mitigation for developers and municipalities, ROWs, fuel reduction next to homes, open space for parks, and noxious weed control. In

many cases, the demands increase the level of threat to special status species and wildlife in general. Cultural resources require greater levels of protection against damage and looting due to improved access to sensitive archaeological sites and OHV capabilities. In some cases, FFO-managed lands have become the islands of high quality biological and cultural resources remaining in a geographic area where five of the ten fastest growing counties in California are located.

Under Alternative B, ROWs and other land use authorizations would still be addressed on a case-by-case basis; however, the number of approved authorizations would likely decline because of increasing conflicts with resource protection needs. The number of acres of land acquired under this alternative would not vary significantly from Alternative A. However, the emphasis on land exchanges, land donations, and Land and Water Conservation Fund (LWCF) acquisitions would be to acquire special status species habitat, riparian forest, blue oak woodland, Central Valley wetlands, grassland vernal pool habitats, and significant cultural resource. The protection and management of three national wild and scenic river corridors would continue, with the focus being on preserving their primitive experience and maintaining their outstandingly remarkable geological, biological, cultural, and other resource values. Land donations from private nonprofits and counties would be accepted where they advance the public interest. Land acquisition would occur when purchased with LWCF or through partnerships with other organizations, particularly using grants from the California Bay Delta Program (CALFED), Central Valley Project Improvement Act, and state proposition funding. These funds are used on projects with significant public and political support.

Fire suppression would continue to be a high priority in all assessment areas. Vegetation management projects would emphasize the reduction of fuels to reduce threat of catastrophic fire and its adverse impacts on special status species habitat and significant cultural resources. Any potential fuel suppression projects would be weighted to give a higher score for implementation when the project benefits both the environment and communities at risk.

Much of the increased recreation demand would not be met, due to closure of FFO-managed lands to protect sensitive environmental resources. Under this alternative, FFO-managed lands may be closed or recreational activities may be restricted if the recreational use adversely impacts water quality, special status species, outstanding visual resources, significant cultural and paleontological resources, wild and scenic river suitability, and adjacent property.

Under Alternative B, additional trails would not be constructed and FFO-managed lands would not be generally available for target shooting. Motorized vehicle use (including use by OHVs) would be limited to designated routes. The FFO would allocate lands for disposal for recreation purposes to local government or organizations on a case-by-case basis.

Local watershed councils would be used to develop a volunteer base to monitor water quality, wildlife, vegetation, and cultural resources. This monitoring would determine

actions that volunteers could perform to enhance and protect sensitive resources in their watershed.

Under Alternative B, mining claim administration for locatable minerals would continue at a level of about 1,200 claims (with about 10 plans of operation and 20 notices filed per year). Most plans of operations involve gold prospecting in underground mine workings or suction dredging in rivers and large creeks. The plans are subject to environmental restrictions that ensure the protection of significant biological and cultural resources. Suction dredging in wild and scenic rivers would be allowed under approved plans as long as it does not impact significant biological and cultural resources or the river's outstandingly remarkable values. It is likely that only a few claims would be developed into industrial mining operations.

Mineral material sales would be limited to existing pits used primarily by local government and new areas where there would be no impacts to significant natural and cultural resources. Interest in sand and gravel sales in the Yuba Goldfields would continue, and, under this alternative, any permitted sand and gravel extraction at the Yuba Goldfields would be used to conduct a massive restoration effort on 3,600 to 5,000 acres of federally owned property (following a potential transfer of lands from the U.S. Army Corps of Engineers [USACE] to the FFO and an adjustment in ownership of these lands through land exchanges).

Oil and gas leasing would be available on 37,000 acres with high potential in the CVAA and YRAA. Lands within national wildlife refuges would not be available for leasing, except in the unlikely case of a drainage problem. Historic development of federally managed oil and gas deposits in the planning area has been low and is expected to remain at relatively low levels in the future.

Grazing use would be reduced under Alternative B. Grazing leases of less than 100 animal unit months (AUMs) would be cancelled or relinquished upon renewal. The size of the lease and the cost associated with administration of leases of this size makes them unmanageable. Any grazing lease which is determined to adversely impact special status species habitat or significant cultural resources would be modified or cancelled. Approximately 32 allotments and 1,300 AUMs would become unavailable over the next five to ten years under this alternative.

The FFO's forestry program would focus on forest health, with an emphasis on moving forestlands towards old growth conditions. Old growth conifer forest is rare in the planning area, especially on FFO-managed land. A number of sensitive species rely on old growth habitat. Green timber sales would consist primarily of thinning efforts to enhance habitat for certain plants and animal species, with average sales of 50,000 board feet per year. It is possible that green timber sales would be initiated in response to other FFO programs (i.e., ROW authorization, fuel break construction, etc.) and decisions made in community based plans. Timber sales that involve the salvage of timber damaged by insects or fire would continue. The average salvage sale has been less than 250,000 board feet per year and would probably remain at this level.

Special areas would be the highest priority under this alternative. ACECs, wild and scenic rivers, preserves, significant cultural resources, and habitat for rare plants and animals would be the focus of management planning, implementation, and land acquisition. Seven new areas, totaling 12,415 acres, would be designated as ACECs. These areas are the Cosumnes River Preserve (FFO-administered land only), Pine Hill Preserve (FFO-administered land only), Spivey Pond area, Deadman's Flat area, Dutch Flat/Indiana Hill area, Brownsville area, and Bagby serpentine soils area. Three existing ACECs (the Red Hills, Ione Manzanita, and Limestone Salamander) would be expanded. The South Yuba, North American, South Fork American, and Merced Rivers would be placed into Special Recreation Management Areas (SRMAs). The Red Hills ACEC is another popular recreation area. It would not be given a SRMA designation under Alternative B; protecting the rare plants that occur in the area would be the management priority for this ACEC.

Seven river segments found to have outstandingly remarkable values would be recommended as suitable to become part of the national wild and scenic river system. This includes about 152 miles of river and 27,000 acres of FFO-managed land.

Alternative C

This alternative would increase public access to and use of FFO-managed lands. Recreational and consumptive uses would be a management priority; however, the FFO would continue to comply fully with environmental laws, regulations, and policies. In general, public access to FFO-managed land would be enhanced through land tenure adjustment, additional facilities would be developed to support and promote increases in recreational use, additional timber sales would be allocated, current grazing use would increase, and all existing open routes would remain open to OHV/motorized vehicle use. This alternative (as well as the other alternatives) would adopt the 'Inimim, Round Mountain, South Fork American River, South Yuba River, and other community based plans. The community based planning process would continue into the future as the FFO's primary land use planning tool at the community level.

Central California is experiencing rapid and exponential growth in the both the Central Valley and Sierra foothills regions. Alternative C emphasizes meeting the needs of the recreating public and local government, and increasing levels of consumptive uses in timber, grazing, and mineral development.

Under Alternative C, ROWs and other land use authorizations would be issued on a case-by-case basis averaging about 50 per year. The number of acres of land acquired under this alternative would not vary significantly from other alternatives; however, land exchanges would be completed to improve public access and to consolidate FFO-managed land ownership in SRMAs. Land donations would be accepted where they would be advance the public interest in the recreation areas. This would usually be riverfront property, access points, and potential sites to establish facilities to support recreation. Land would be acquired when LWCFs are provided by Congress or through partnerships with organizations. Acquisitions would focus on lands that support recreation along the three national wild and scenic river corridors and along one suitable

river. A greater emphasis would be placed on obtaining high-quality recreation lands as opposed to rare plant and animal habitat or significant cultural resources. The disposal of land would have greater priority to consolidate public land holdings and reduce overall administrative cost for the agency. Public land disposals would reduce the number of scattered and unmanageable parcels. FFO-managed lands would be transferred to counties to enhance their growth and development, sold to private individuals for resolving trespass issues, auctioned for sale to private individuals, or transferred to other entities.

Recreation opportunities would be focused on newly established SRMAs and existing wild and scenic rivers. The South Yuba River, North Fork American River, South Fork American River, and Merced River corridors, and the Red Hills ACEC would be placed into SRMAs. The SRMA plans would be developed that adopt existing plan decisions and enhance recreational opportunities for the public. The South Fork American River would be recommended as suitable for consideration as a wild and scenic river due to its outstandingly remarkable recreation and cultural resource values. Additional facilities and access points would be constructed to support the growing public demand for recreation sites and destinations in the Sierra Nevada foothills region. White water boating, hiking, equestrian activities, shooting, hunting, OHV use, and suction dredging are the more popular forms of recreation affecting FFO-managed land. Opportunities for recreation activities appropriate to the SRMA would be enhanced. Additional non-motorized trails would be built in SRMAs, and existing trails would be maintained to support increasing demands for equestrian, mountain biking, and pedestrian use. Suitable locations in SRMAs would be evaluated for barrier-free access.

Extensive Recreation Management Areas (ERMAs) would be managed in accordance with BLM's recreation guidelines. Significant investment in ERMAs would occur only on a case-by-case basis. Some development could occur on ERMAs in support of OHV use and target shooting opportunities. Support of these types of recreation use would occur in areas where local county zoning is compatible. The demand for these activities in designated areas is growing from both private individuals and commercial organizations.

Fire suppression and prevention would continue to be a high priority in all assessment areas. Fuel reduction projects in high density recreation areas and communities at risk would have the highest priority.

Under Alternative C, mining claim administration for locatable minerals would continue at a level of about 1,200 claims (with about ten plans of operation and 20 notices filed per year). Most plans of operations involve gold prospecting in underground mine workings or suction dredging in rivers and large creeks. The plans are subject to environmental restrictions that ensure the protection of significant biological and cultural resources. Suction dredging in wild and scenic rivers would be allowed under approved plans as long as it does not impact significant biological and cultural resources or a river's outstandingly remarkable values. It is likely only a few claims would be developed into industrial mining operations.

Mineral material sales would be expanded to accommodate county growth and construction needs. There would be continued interest in sand and gravel mining in the Yuba Goldfields.

Oil and gas leasing would be available in the CVAA and the YRAA. Approximately 76,000 acres with high potential would be available for exploration and development. These include 39,000 acres within national wildlife refuges, though the no surface occupancy stipulation would apply to these lands. Historic development of federally managed oil and gas deposits in the planning area has been low and is expected to remain at relatively low levels in the future.

Grazing use would increase above current levels. Suitable rangelands outside of SRMAs and other specially designated areas would be available for livestock grazing. Additional grazing use would be allocated on FFO-managed lands to assist with fuel reduction efforts. Smaller leases would begin to increase.

Timber production would increase above current levels. The FFO would be required to complete inventories of its existing forestland and timber volume. Green timber sales would be based on sustained yield calculations derived from these inventories. The average yield annually would gradually increase to approximately 3 million board feet over a 20-year period.¹ The increase in timber production would require the FFO to put more emphasis on plantations and other reforestation projects. Fuels projects would be needed to maintain plantations.

Existing special designated areas such as ACECs and wild and scenic rivers would continue to be protected under the respective authorities and designation guidelines. No new ACECs would be designated. One river segment – the South Fork American (Chili Bar to Salmon Falls) found to have outstandingly remarkable recreation and cultural values would be recommended as suitable to become part of the national wild and scenic river system. This includes about 22 miles of river and 2,100 acres of FFO-managed land.

Special status species would be protected under existing laws, regulations, and policies on a case-by-case basis. Significant cultural resources would be protected under existing laws, regulations, and policies.

Alternative D

Alternative D is the preferred alternative. It balances environmental protection with recreational and consumptive uses of the FFO-managed lands. Under this alternative, existing activity and community based plans would be adopted, including the 'Inimim, Round Mountain, South Fork American River, South Yuba River, and other plans.

¹ This figure is based on Sustained Yield Unit (SYU)-15 yield data for the planning area. SYU-15's yield data are now outdated. New inventories would be needed to determine potential harvest levels.

Alternative D considers evolving use patterns and needs identified during the past 20 years. This alternative steps up protection for areas with significant biological, cultural, and paleontological resources; enhances recreation opportunities for areas with high levels of public use; and makes community based planning the primary tool to determine appropriate levels of protection and use on FFO-managed lands at the local area.

Recreation opportunities would focus on FFO-managed lands along the South Yuba, North Fork American, South Fork American, and Merced rivers. These four areas would be placed into SRMAs. SRMA plans would be developed. These plans would, where applicable, adopt existing activity and community based plans. In some cases, the SRMA would require the preparation of a new activity plan. The new plans would emphasize the enhancement of recreational opportunities appropriate to the SRMA. The South Fork American River would be recommended to Congress as suitable for designation as a wild and scenic river due to its outstanding recreational and cultural values. The North Fork and main Mokelumne River segment would also be recommended as suitable for designation as a wild and scenic river due to its outstanding cultural, scenic, and water quality values. Recreation demand would continue to increase. White water boating, hiking, equestrian activities, shooting, hunting, OHV use, and suction dredging would be the more popular uses, with other forms of recreation affecting public land use demands. Only those recreational opportunities appropriate to the SMRA would be enhanced. Additional trails would be built in SRMAs, and existing trails would receive increased use. The ERMAs would be managed in accordance with BLM recreation guidelines. Significant investment in ERMAs would not be expected but could be adjusted based on community based plans.

Shooting and OHV use demand would remain strong. The demand would come from both private individuals and commercial organizations. There would be increasing competition between users. SRMA management would attempt to resolve or alleviate conflicts between user groups, especially in parcels next to residential areas. The FFO would coordinate with local governments to provide lands in areas properly zoned for these activities. The local governments and organizations would be encouraged to become the managers of shooting facilities, perhaps through Recreation and Public Purposes Act lease. OHV/motorized vehicle use would be limited to designated routes. The goals of the designation process are to protect the environment, reduce potential impacts to private property, and provide motorists with safe and viable routes.

Under Alternative D, ROWs and other land use authorizations would be issued on a case-by-case basis, averaging about 50 per year. The number of acres of land acquired under this alternative would not vary significantly from other alternatives. Land exchanges would be undertaken to improve access to FFO-managed lands, to consolidate FFO-managed lands along rivers (particularly within SRMAs and wild and scenic river corridors), to expand ACECs and preserves, and to acquire significant or unique cultural and natural resources. The focus would be on the North and South Forks of the American River, the North and Middle Forks of the Cosumnes River, the Merced River, the Red Hills ACEC, and the Pine Hill and Cosumnes preserves. In addition, new ACEC designations or expansions of existing ACECs would be a greater acquisition priority.

Land donations would be accepted where they would advance the public interest. This would usually be riverfront property, rare plant or animal habitat, significant cultural resources, and access points to FFO-managed land. Land would be purchased when funds from the LWCF are provided by Congress. These funds would be used as specified by Congress probably on designated SRMAs, ACECs, and wild and scenic river corridors.

Fire suppression and prevention would continue to be a high priority in all assessment areas. Fuels reduction projects in high density recreation areas and around communities at risk would have the highest priority. Vegetation management projects would emphasize the reduction of fuels to reduce threat of catastrophic fire and its adverse impacts on special status species habitat and sensitive cultural resources. Projects would be weighted to give a higher score for implementation when the project would benefit both the environment and communities at risk.

Mining claim administration for locatable minerals would continue at a level of about 1,200 claims (with about 10 plans of operations and 20 notices filed per year). Most plans of operations involve gold prospecting in underground mine workings or suction dredging in rivers and large creeks. The plans are subject to environmental restrictions that ensure the protection of significant biological and cultural resources. Suction dredging in wild and scenic rivers would be allowed under approved plans as long as it does not impact significant biological and cultural resources or the river's outstandingly remarkable values. It is likely that only a few claims would be developed into industrial mining operations.

Mineral material sales would be limited to existing pits used primarily by local government. Sales would be allowed in new areas where significant cultural and natural resources could be avoided or minimized. There would be continued interest in sand and gravel sales in the Yuba Goldfields. Under this alternative, sales and free use of mineral material in the Yuba Goldfields would be authorized for the purpose of reclaiming lands (restoring wetlands) disturbed by past mining operations.

Oil and gas leasing would be available on 37,000 acres with high potential in the CVAA and the YRAA. Lands within National Wildlife Refuges (NWRs) would not be available, except in the unlikely event of a drainage problem. Historic development of federally managed oil and gas deposits has been low and is expected to remain at relatively low levels in the future.

Grazing leases of less than 25 AUMs would not be available for grazing upon renewal or relinquishment. Special circumstances may preclude the relinquishment of certain leases under 25 AUMs. Leases of less than 100 AUMs would continue to decline due to conflicts with other public land uses and manageability in an increasingly urban environment. Many of these leases would be relinquished upon renewal. This trend would continue at a rate of one or two leases per year for the next five to ten years. Renewal of leases would be determined on a case-by-case and would be based on the validity of the lease, size of the lease, resource conditions, and economic considerations of both the lessee and the FFO.

The FFO's forestry program would focus on forest health. Timber sales would normally involve salvage of timber damaged by insects or fire. Average salvage sales have totaled less than 250,000 board feet per year. The trend would continue under Alternative D. Green timber sales would result from other FFO program actions. Green timber sales would also be based on sustained yield calculations derived from community based plans developed specifically to address FFO-managed forestland issues. Currently, the average green sales generate 100,000 board feet per year. The sustained yield of green cuts would increase as community based plans are completed and implemented. The annual yield may reach 250,000 board feet in the future. It is anticipated that minimal reforestation would be needed. Existing plantations would be maintained through fuels reduction and other work.

Special areas would continue to be a priority for management. The SRMAs, ACECs, preserves, wild and scenic rivers, and areas with significant natural and cultural resources would be the focal points of management and land acquisition. FFO-managed land in the Pine Hill Preserve, Cosumnes River Preserve, Spivey Pond area, Deadman's Flat area, and Bagby area would be designated ACECs. The Red Hills, Ione Manzanita, and Limestone Salamander ACECs would be expanded to include additional habitat for rare and special status species. The Dutch Flat/Indiana Hill area would be designated as a Research Natural Area, which is a type of ACEC.

Under Alternative D, two river segments – the South Fork American and the North Fork/Main Stem Mokelumne – would be recommended as suitable to become part of the national wild and scenic river system. The rivers were found to have outstandingly remarkable recreation, cultural, and water quality values. This includes about 42 miles of river and 5,800 acres of FFO-managed land.

2.1 Air Quality

Goal

- Protect public health and safety, and sensitive natural resources.

Objectives

- Contribute to the attainment of air quality standards in all air basins and air quality districts.
- Minimize air pollution and airborne hazards.

Alternative A

No existing decisions would be made specifically addressing air quality. Air quality would be managed according to existing laws, regulations, and policy.

Common to Alternatives B, C, and D

Actions

- Cooperate with local counties and contribute to attainment of air quality standards in the Mountain and Valley Air Basins.
- Comply with National Ambient Air Quality Standards, California State Ambient Air Quality Standards, State Implementation Plans, and applicable federal, state, and local air quality regulations.
- Approval of all actions that require permits from the local air pollution control districts (APCDs) would include measures necessary for the phased reduction of pollutants in accordance with the Air Quality Attainment Plan for the local air basin. This would include authorizations for construction, road maintenance and improvement, mineral development, and OHV authorizations.
- Management actions should be conducted in a manner which conforms to the objectives and strategies of local APCDs for attainment of federal and state air quality standards.
- Mitigate for ground disturbing activities and prescribed fire projects to reduce the generation of particulate matter.
- Require smoke management plans for all prescribed fire.

- Coordinate prescribed fire activities with the appropriate air district. Prepare required smoke management plans and permit applications and submit them for approval.
- Post signage to inform users that naturally occurring asbestos (NOA) is present in areas found to contain NOA amounts greater than 0.25 percent (per specimen) or where airborne NOA is found at hazardous levels. Coordinate these actions with appropriate federal, state, and local agencies.

Alternative B

Action

- Prohibit ground-disturbing activities on soils bearing NOA.
- Reduce motorized vehicle travel on dirt roads.

Alternatives C and D

Action

Avoid, where possible, ground-disturbing activities on soils bearing NOA.

2.2 Soil Resources

Goal

- Manage soils so the biological and physical characteristics are appropriate to the soil's type, climate, and landform.

Objectives

- Maintain soil cover and organic matter.
- Maintain soil productivity and stability and provide for restoration where elements are below potential.
- Minimize harmful consequences of erosion and surface runoff.
- Preserve and protect the tertiary oxisol soil formation in the MoRAA.

Alternative A

Action

- Maintain productivity and minimize erosion.

Common to Alternatives B, C, and D

Actions

- Stabilize erosion on Truro Mine, Rewinkle, and Boulder Mine roads (ARAA).
- Stabilize OHV trail erosion on the Bald Mountain parcel (TRAA).
- See the Lands and Realty section for alternatives related to acquisition for soil resources.

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2.3 Water Resources

Goal

- Restore and maintain the ecological health of watersheds and aquatic ecosystems on FFO-managed lands and, to the extent possible, partner with other landowners and stakeholders to coordinate restoration efforts across watersheds.

Objectives

- Maintain and improve surface water and groundwater quality consistent with applicable state and federal water quality standards.
- Provide water to facilitate authorized uses.

Alternative A

Actions

- Inventory roads and trails for erosion potential in the South Yuba River area, and control effects as needed.
- Inventory mining areas for erosion and discharge of toxics such as mercury in the South Yuba River area, and control effects as needed.
- Decrease toxics in Humbug Creek in the South Yuba River area.
- Quantify in-stream flows in the South Yuba River area.

Common to Alternatives B, C, and D

Actions

- Conduct management actions in a manner that conforms to State Water Quality Control Board objectives developed as required by the Federal Water Pollution Control Act. Best management practices (BMPs) would be developed as needed in accordance with BLM guidance and policy.
- Remediate water quality contamination from sources on FFO-managed land.
- Coordinate with at least one watershed organization in each assessment area to work on water quality issues.
- Remediate the mercury hazard at the Pond Mine (ARAA).
- Remediate the mercury hazard at the Poore Mine (YRAA).

- Inventory roads and trails for erosion potential in the South Yuba River area and control effects as needed.
- Inventory mining areas for erosion and discharge of toxics such as mercury in the South Yuba River area, and control effects as needed.
- Remediate mercury hazard in Humbug Creek (YRAA).

2.4 Vegetative Communities

Goal

- Promote a healthy and diverse mix of plant communities and provide a wide spectrum of organisms, ecosystem processes, and human resource needs that depend upon these plant communities.

Objectives

- Conserve and restore oak woodland, coniferous forest, chaparral, riparian, Central Valley wetland, and grassland habitats to support long-term viability of native bird species, sensitive species, and the associated natural diversity of these habitats.
- Use vegetation manipulation practices (including invasive weed removal) to improve habitat conditions for target species.
- Use vegetation manipulation practices to control invasive weed infestations and reduce hazardous fuel loading to prevent catastrophic wildfire.

Alternative A

Actions

- Fence livestock from springs where necessary to protect riparian vegetation.
- Prevent, eliminate, and/or control undesired non-native vegetation in selected areas.
- Prevent, eliminate, and/or control undesired non-native vegetation in selected areas as mandated in the South Yuba River Comprehensive Management Plan.
- Improve riparian vegetation in select areas as mandated in the South Yuba River Comprehensive Management Plan.
- Implement and meet national BLM policies consistent with the Partners Against Weed Initiative (U.S. Department of the Interior [DOI] 1998) and Executive Order 13112.

Common to Alternatives B, C, and D

Actions

- See the Lands and Realty section for land acquisition alternatives related to vegetation.

- See the Fire Management section for fuel reduction actions/priorities.
- Improve habitat condition for special status species through vegetation manipulation in Central Valley wetlands, oak woodlands, coniferous forests, grasslands, riparian forest, and riverine habitats. Vegetation manipulation practices consist of water management or irrigation of managed wetlands, prescribed fire to reduce understory brush in conifer and hardwood forest areas, prescribed fire in grasslands to promote native species, removal of invasive tree species in riparian forests, brush and tree mastication practices for conifer forest health, and propagation of native plants and vegetation communities.
- Prevent, eliminate, and/or control undesired non-native vegetation in selected areas as mandated in the South Yuba River Comprehensive Management Plan.
- Improve riparian vegetation in select areas as mandated in the South Yuba River Comprehensive Management Plan.
- Implement and meet national BLM policies consistent with the Partners Against Weed Initiative (DOI 1998) and Executive Order 13112.

Alternative B

Actions

- Control and eradicate noxious weeds in important habitat for special status species.
- Use prescribed fire, mechanical mastication, herbicide application, manual removal, or combinations of each to promote healthy and diverse vegetation.
- Conduct water management on designated wetland management units in the Cosumnes River Preserve (CVAA; see Cosumnes River Preserve Comprehensive Management Plan).

Alternative C

Actions

- Control and eradicate noxious weeds in areas of high recreation and consumptive uses (emphasis on improved recreation, increased productivity for timber, fuel wood, grazing, and reduced fuel hazards).
- Use prescribed fire, mechanical mastication, herbicide application, manual removal, or combinations of each.

Alternative D

Actions

- Continue weed inventory, control, and monitoring. Prioritize the habitat for special status species and High Use recreation areas.
- Use prescribed fire, mechanical mastication, herbicides, manual removal, or combinations of these methods to promote healthy and diverse vegetation.
- Conduct water management on designated wetland management units in the Cosumnes River Preserve. Water management consists of periodic irrigation and control of water levels on managed public wetlands to achieve desired habitat for wildlife endemic to the Central Valley.
- Construct fences and take other actions to keep livestock out of riparian areas.

Alternative A

Actions

- Implement measures to protect designated areas, such as riparian areas, and riparian areas.
- Conduct prescribed burns to improve wildlife habitat.
- Identify and protect migratory routes in the South Yuba River area.
- Preserve a portion of riparian habitat in the South Yuba River area.
- Preserve riparian habitat in the South Yuba River area.

Alternatives B, C, and D

Actions

- See Land Use and Quality sections for information regarding riparian areas and riparian areas.
- Allow for the control of non-native wildlife species that are negatively impacting native species.

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2.5 Fish and Wildlife

Goal

- Maintain, improve, or enhance native fish and wildlife populations and the ecosystems upon which they depend.
- Provide opportunities for research and education.

Objectives

- Restore disturbed or altered habitat to attain desired native plant communities while providing for wildlife/fisheries needs and soil stability.
- Reduce habitat fragmentation and maintain altitudinal migratory corridors (from about 1,500 to 3,500 feet).
- Prevent and control infestations of non-native species that negatively impact native and game species.

Alternative A

Actions

- Implement measures to protect snags, riparian areas, oaks, and wildlife on all timber sales.
- Conduct prescribed burns to improve wildlife habitat.
- Identify and protect migratory routes in the South Yuba River area.
- Preserve a quota of snags in the South Yuba River area.
- Prescribed burn Knight Creek/Rose Creek to improve winter deer habitat.

Alternatives B, C, and D

Actions

- See Lands and Realty section for fish and wildlife related alternatives to land acquisition.
- Allow lethal control of non-native wildlife species that are negatively impacting native species.

Alternative B

Action

- Use Partners in Flight focus species to determine relative health of key habitat for birds in the 0- to 3,500-foot elevation zone. Work with agencies and conservation entities to maintain and enhance these habitats.

Alternative C

Action

- Identify, maintain, and enhance deer herd altitudinal migratory routes. The important foothill routes are located in the 2,500 to 3,500-foot elevation range. Connectivity and size are both important. Work with agencies and conservation entities to maintain and enhance migratory routes for deer and other migratory terrestrial animals.

Alternative D

Actions

- Use Partners in Flight focus species to determine the relative health of key habitat for birds in the 0 to 3,500-foot elevation zone. Work with agencies and conservation entities to maintain and enhance these habitats.
- Identify, maintain, and enhance deer herd altitudinal migratory routes through land acquisition and consolidation of public land patterns along the migratory routes. In addition, conduct enhancement through vegetation manipulation to achieve desired habitat condition for important deer herd areas. The important foothill routes are located in the 2,500- to 3,500-foot elevation range. Connectivity and size are both important. Work with agencies and conservation entities to maintain and enhance migratory routes for deer and other migratory terrestrial animals.

2.6 Special Status Species

Goals

- Ensure that all management activities and FFO authorizations are consistent with the conservation needs for special status species.
- Manage special status species habitat to assist in the recovery of listed species.

Objectives

- Preserve habitat for special status species.
- Coordinate with the USFWS on implementation of recovery plans and conservation strategies for special status species.

Alternative A

Actions

- Coordinate with the USFWS on all actions that may affect federally listed species or species proposed for federal listing, pursuant to the Endangered Species Act.
- Protect bald eagle roosting sites at Don Pedro Reservoir and Lake McClure.
- Amend the Red Hills Management Plan to address lands acquired expressly for addition to this ACEC. In the plan, make status changes to special status species that occur in the Red Hills ACEC.
- Address newly emerging threats to federally listed and other special status species, such as the spread of the pathogen *Phytophthora cinnamomi*, which threatens the remaining stands of federally listed Ione manzanita.
- Conduct inventories and monitoring in the Limestone Salamander ACEC.
- Inventory and map rare biota in the South Yuba River wild and scenic river corridor.
- Coordinate with the CDFG to conduct spotted owl inventory.
- Implement Spivey Pond Management Area plan.

Common to Alternatives B, C, and D

Actions

- The FFO would consult with the USFWS and the National Marine Fisheries Service (NMFS) as appropriate to ensure FFO actions do not jeopardize the continued existence of plant or animal species listed as threatened or endangered, proposed for listing, or a candidate for listing, pursuant to the ESAO. The FFO would actively promote the recovery of listed species and would continue to work toward improving the status of candidate and special status species to eliminate the need to officially list these species.
- Preserve and protect species (and their habitats) that have been given special status by either BLM or the State of California. The FFO would coordinate as often as possible with CDFG and other state and local government agencies to accomplish this action.
- Implement Spivey Pond Management Area Plan.
- Develop a new Red Hills ACEC Management Plan to address current issues and to address the management of lands acquired expressly for addition to this ACEC. In the plan, make status changes to special status species that occur in the Red Hills ACEC.
- Develop a Pine Hill Preserve Management Plan that directs management activities toward the Pine Hill Preserve's mission to conserve in perpetuity the rare plant species and plant communities of the western El Dorado County gabbro formation.
- Address newly emerging threats to federally listed and other special status species, such as the spread of the pathogen *Phytophthora cinnamomi*, which threatens the remaining stands of federally listed Ione manzanita.
- Conduct surveys to prioritize areas based on potential threats to special status plants and areas supporting listed species or sensitive species that are the rarest or most threatened across their ranges. In some areas, a cadastral survey would be necessary.
- Determine locations for the New Priest Grade Rawhide Hill onion population and the Kanaka Creek Layne's butterweed population.

Alternative B

Actions

- Implement conservation strategies developed in coordination with the USFWS and NMFS for FFO-managed special status species (see Appendix B).

- Designate the Spivey Pond management area (ARAA) as the Spivey Pond ACEC for the protection of California red-legged frogs. Also see Special Designations section (2.19).
- Designate all FFO-managed land in the Pine Hill Preserve (ARAA) as the Pine Hill Preserve ACEC for rare plant protection. Also see Special Designations section (2.19).
- Implement the recovery plan for the gabbro soil plants of the central Sierra Nevada foothills.
- Designate all FFO-managed land in the Cosumnes River Preserve (CVAA) as the Cosumnes River Preserve ACEC for wetland habitat protection. Also see Special Designations section (2.19).
- Designate FFO-managed lands in the Deadman's Flat area (YRAA) as the Deadman's Flat ACEC for rare plant protection. Also see Special Designations section (2.19).
- Protect four sensitive bat species located in the Crystal Palace cave complex (SRAA).
- Designate FFO-managed land in the Brownsville area (YRAA) as the Yuba Brownsville ACEC for rare plant protection. Also see Special Designations section (2.19).
- Designate FFO-managed serpentine soils in the Bagby area (MRAA) as the Bagby Serpentine ACEC for rare plant protection. Also see Special Designations section (2.19).
- Expand the Red Hills ACEC (TRAA) to include FFO-managed lands acquired for addition to the ACEC and other FFO-managed lands in the Red Hills east of Don Pedro Reservoir that support a similar suite of rare plants. Also see Special Designations section (2.19).
- Expand the Limestone Salamander ACEC (MRAA) to include FFO-managed land where the limestone salamander or habitat for the limestone salamander has been identified. Also see Special Designations section (2.19).
- Prohibit surface-disturbing activity in important limestone salamander habitat in the Merced River corridor (MRAA), specifically disturbance of north- and east-facing talus slopes.
- Expand the Ione Manzanita ACEC (MoRAA) to include FFO-managed lands in the area of the ACEC that supports federally listed species of the Ione Formation. Also see Special Designations section (2.19).

Alternative C

- Same as Alternative A.

Alternative D

Actions

- Implement conservation strategies developed in coordination with the USFWS and NMFS for FFO-managed special status species (see Appendix B).
- Designate the Spivey Pond management area (ARAA) as an ACEC for the protection of the California red-legged frog. Also see Special Designations Section (2.19).
- Designate all FFO-managed land in the Pine Hill Preserve (ARAA) as the Pine Hill Preserve ACEC for special status plant protection. Also see Special Designations Section (2.19).
- Designate all FFO-managed land in the Cosumnes River Preserve (CVAA) as the Cosumnes River Preserve ACEC. Also see Special Designations Section (2.19).
- Designate FFO-managed lands in the Deadman's Flat area (YRAA) as the Deadman's Flat ACEC for special status plant protection. Also see Special Designations Section (2.19).
- Designate FFO-managed serpentine soils in the Bagby area, Merced River canyon (MRAA) as the Bagby Serpentine ACEC for rare plant protection. Also see Special Designations Section (2.19).
- Expand the Red Hills ACEC (TRAA) to include FFO-managed lands acquired for addition to the ACEC and other FFO-managed lands in the Red Hills east of Don Pedro Reservoir that support a similar suite of special status plants. (Also see Special Designations Section (2.19)).
- Expand the Limestone Salamander ACEC (MRAA) to include FFO-managed land where the limestone salamander or habitat for the limestone salamander has been identified. (Also see Special Designations Section (2.19)).
- Expand the Ione Manzanita ACEC (MoRAA) to include FFO-managed lands in the area of the ACEC that support special status species of the Ione Formation. (Also see Special Designations Section (2.19)).

2.7 Wildland Fire Ecology and Management

Goals

- Establish a fire management program that is cost efficient and commensurate with threats to life, property, public safety, and resources.
- Use fire to restore and/or sustain ecosystem health.
- Cooperate with communities at risk within the WUI to develop plans for risk reduction.
- Cooperate with regional partners in fire and resource management across agency boundaries.
- Reduce human-caused fires, with a special emphasis on reductions in developed areas such as communities, campgrounds, and transportation corridors.

Objectives

- Wildfire Suppression
 - Provide for firefighter and public safety in all fire management activities.
 - Provide an appropriate management response for all wildland fires, emphasizing firefighter and public safety. ACECs, SRMAs, wilderness areas, WSAs, wild and scenic rivers (designated or under study), and certain other FFO-managed lands would require modified suppression techniques to protect the known values. Modified suppression techniques will be identified in the FFO FMP.
 - Limit the intensity of fire suppression efforts to the most economical response consistent with the human and resource values that are at risk.
 - Protect sensitive biological, cultural, and paleontological resources from damage by fire and/or fire suppression actions.
- Fuels Management
 - Reduce the risk of fire in WUI communities.
 - Reduce the risk of catastrophic wildfire through fuels management.
 - Promote greater diversity within plant communities on BLM-administered land within the planning area with the use of fire.

- Use prescribed burn as a natural land management tool for the control and eradication of noxious weeds.
- Use prescribed burn as a management tool to improve the ecological condition of the area.
- Use prescribed burn to reduce the fuel hazard in the chaparral community, improve wildlife habitat, increase local water yield, and enhance watersheds.
- Fire Rehabilitation, Stabilization, and Restoration
 - Rehabilitate burned areas to mitigate adverse effects of fire on soils, water, cultural resources, and vegetation.
- Prevention, Risk Mitigation, and Education
 - Increase the public’s knowledge of fire’s natural role in the ecosystem and the hazards and risks associated with living in the WUI.
 - Educate the public on fire safety and prevention measures.
- Work with the CDF to suppress 90 percent of all wildfires to less than 10 acres.

Common to All Alternatives

Action

- Implement and maintain the FFO’s FMP. This plan is available for public review and comment through the BLM’s Folsom Field Office in Folsom, California. An electronic version of the FMP may also be available online at the following site (pending web accessibility):
<http://www.ca.blm.gov/folsom/>.

Alternative A

Actions

- Use prescribed burns to reduce fuel hazards.
- Coordinate fire suppression within Limestone Salamander ACEC.
- Implement an aggressive attack with a goal of limiting 90 percent of all wildfires to less than 10 acres.
- Use suppression methods that have the least impact on the environment.

- Reduce heavy fuel loading by prescribed burning 500 to 2,000 acres per year.
- Implement modified or constrained suppression in 'Inimim, Round Mountain, all wild and scenic river corridors, Merced River Wilderness Study Area, Pine Hill Preserve, and all ACECs.
- Implement full suppression in all other areas.
- Reduce hazardous fuels in WUI areas and communities at risk. The FFO would place special emphasis on implementing fuels reduction projects specified in community based plans.

Alternative B

Action

- Prioritize fuel reduction projects that would benefit significant biological resources and provide additional protection for sensitive cultural resources.

Alternative C

Action

- Prioritize fuel reduction projects in high density recreation areas and communities at risk.

Alternative D

Action

- Prioritize fuel reduction projects to benefit both communities at risk and significant natural and cultural resources.

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2.8 Cultural Resources

Goals

- Identify, preserve, and protect significant cultural resources and ensure they are available for appropriate uses by present and future generations.
- Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflicts with other resource uses.

Objectives

- Prevent or resolve conflicts between land uses and cultural resources.
- Plan for the appropriate uses of cultural resources (using the use allocations in Table 2-1). These uses pertain specifically to cultural resources and not to areas of land.

Table 2-1 Cultural Use Allocations and Desired Outcomes

Use Allocation ¹	Desired Outcomes
a. Scientific use	Preserved until research potential is realized
b. Conservation for future use	Preserved until conditions for use are met
c. Traditional use	Long-term preservation
d. Public use	Long-term preservation, on-site interpretation
e. Experimental use	Protected until used
f. Discharged from management	No use after recordation; not preserved

¹ The majority of the cultural properties in a given geographic area will fall into categories a and f. The less-common properties in categories b through e are likely to be associated with particular settings that can be delineated geographically in the planning process. As the plan is developed, properties in categories b through d will require the most attention to balance their proactive uses with other land and resource uses.

Alternative A

Actions

- The FFO would make a reasonable and good faith effort to identify and consider significant cultural resources that could be potentially affected by its undertakings. Where necessary, the FFO would work to avoid, minimize, or mitigate adverse effects to significant cultural resources, pursuant to the Section 106 regulations.
- Identify and protect significant cultural resources, Native American graves (and associated funerary objects), and archaeological resources subject to the National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and

other authorities. Place special emphasis on inventorying and protecting cultural resources in the SRAA.

- Develop an interpretive program for cultural resources in the South Yuba River Comprehensive Management Plan area.
- Develop a preservation plan for the Excelsior Ditch as mandated by the South Yuba River Comprehensive Management Plan.
- Develop an interpretive program for cultural resources in the South Fork American River Management Plan area.

Common to B, C, and D

Actions

- The FFO would make a reasonable and good faith effort to identify and consider significant cultural resources that could potentially be affected by its undertakings. Where necessary, the FFO would work to avoid, minimize, or mitigate adverse effects to significant cultural resources pursuant to the Section 106 regulations.
- All cultural resources on FFO-managed land within the planning area would be allocated to the uses listed in Table 2-1 according to their nature and preservation value. These use allocations pertain to only cultural resources, not to areas of land.
- Preserve and protect significant cultural resources, Native American graves (and associated funerary objects), and archaeological resources subject to the NHPA, Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and other authorities.
- Create an alternate access point for the Stevens Trails (ARAA). This trailhead would be maintained in addition to the existing trailhead location.
- Increase protection for cemeteries, graves, and other human burial sites by preventing surface disturbing activities at these sites. Specifically protect graves at Railroad Flat along the Merced River.
- Develop an interpretive program for cultural resources in the South Fork Yuba Comprehensive Management Plan area.
- Develop a preservation plan for the Excelsior Ditch as mandated by the South Yuba River Comprehensive Management Plan.
- Develop an interpretive program for cultural resources in the South Fork American River Management Plan area.

Alternative B

Actions

- Allow no developments on FFO-managed land that would degrade the viewshed and setting of the Westside and Cherry Valley Railroad Trail, located near Tuolumne City (TRAA). The FFO would regulate use of the trail so that the integrity of this historic-era railroad resource is not further compromised. Maintain the interpretive panel.
- Close the driveway to the Ophir Mine, near Arrastraville (TRAA).
- Prohibit motorized vehicle use in the Campo Seco parcel (MoRAA).
- Prohibit motorized vehicle use in the Rancheria townsite parcel (MoRAA).
- Develop a management plan and cooperative agreement with El Dorado County for the monitoring and protection of Indian Diggings (CRAA).
- Obtain permanent legal access to Schroeder Mine (MRAA). Nominate the mine to the National Register of Historic Places.
- Close the road to Governor/Live Oak Mine to motorized vehicle use (MRAA).
- Close motorized vehicle access to the Longfellow Mill, near Big Oak Flat (TRAA).

Alternative C

Actions

- Restore 2 miles of the Blue Wing Trail (ARAA).
- Develop interpretive information for the public at the Indian Diggings Cemetery (exclude the archaeological resources from this interpretation) (CRAA).
- Develop interpretive information for the public in the Merced River area.
- Seek ways to preserve and interpret the Davis-Randolph Mill (YRAA).

Alternative D

Actions

- Close the driveway to the Ophir Mine, near Arrastraville (TRAA).
- Restore 2 miles of the Blue Wing Trail (ARAA).

- Allow no developments on FFO-managed land that would degrade the viewshed and setting of the Westside and Cherry Valley Railroad Trail, located near Tuolumne City (TRAA). The FFO would regulate use of the trail so that the integrity of this historic-era railroad resource is not further compromised. Maintain the interpretive panel.
- Prohibit motorized vehicle use in the Campo Seco parcel (MoRAA).
- Prohibit motorized vehicle use in the Rancheria townsite parcel (MoRAA).
- Develop a management plan and cooperative agreement with El Dorado County for the monitoring and protection of Indian Diggings (CRAA).
- Develop interpretive information for the public in the Merced River area.
- Develop interpretive information for the public at the Indian Diggings Cemetery (exclude the archaeological resources from this interpretation) (CRAA).
- Obtain permanent legal access to the Schroeder Mine (MRAA). Nominate this mine to the National Register of Historic Places.
- Seek ways to preserve and interpret the Davis-Randolph Mill (YRAA).
- Close motorized vehicle access to the Longfellow Mill, near Big Oak Flat (TRAA).

2.9 Paleontological Resources

Goal

- Identify, preserve, and protect significant paleontological resources and ensure they are available for appropriate uses by present and future generations.

Objectives

- Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses.
- Expand opportunities for scientific study, interpretation, and other educational uses of paleontological resources. Of concern are significant paleontological localities with high scientific research potential.

Alternative A

- No existing land use plan decisions specifically address paleontological resources. Resources are managed in compliance with existing laws, regulation, and policy.

Common to Alternatives B, C, and D

Action

- Protect paleontological resources by assessing any threat to these resources and implementing measures designed to reduce or eliminate the threat and mitigate any impacts.

Alternative B and D

Actions

- Designate the Dutch Flat/Indiana Hill area as the Dutch Flat/Indiana Hill Research Natural Area (ARAA), as depicted on Map 5a.
- Close all motorized access to Dutch Flat/Indiana Hill area except for research and administrative purposes (ARAA).
- Inventory paleontological resources. Evaluate the scientific research potential of resources identified during the inventory.

Alternative C

- No actions beyond those common to Alternatives B, C, and D.

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2.10 Visual Resources

Goal

- Protect and enhance the scenic qualities and visual integrity of the characteristic landscapes in the Sierra Planning Area.

Objective

- Maintain the existing visual quality of the following areas:
 - ‘Inimim Forest Management Plan area (YRAA).
 - South Yuba River (including the South Yuba River Comprehensive Management Plan area and proposed SRMA).
 - North Fork American Wild and Scenic River (including proposed SRMA).
 - South Fork American River (including the South Fork American River Management Plan area and proposed SRMA, but excluding the Clark Mountain area).
 - Clark Mountain area, located along the South Fork American River.
 - Pine Hill Preserve (ARAA).
 - Cosumnes River (main stem, proposed wild and scenic river).
 - North Fork Cosumnes River (proposed wild and scenic river).
 - Middle Fork Cosumnes River (proposed wild and scenic river).
 - Cosumnes River Preserve (CVAA, including FFO-managed land only).
 - North Fork/Main Stem Mokelumne River (proposed wild and scenic river).
 - Middle Fork Mokelumne River (wild and scenic river study area).
 - South Fork Mokelumne River (wild and scenic river study area).
 - New Melones Reservoir/Stanislaus River area (including the South Fork Stanislaus and Stony Gulch).
 - North Fork Tuolumne River (proposed wild and scenic river).
 - Turnback Creek area (TRAA).

- Red Hills (TRAA, including the Red Hills ACEC and proposed Red Hills ACEC addition and SRMA).
- Lake Don Pedro/Highway 49 viewshed (TRAA).
- Lake McClure/Highway 49 viewshed (MRAA).
- Merced Wild and Scenic River (lower, wild section).
- North Fork Merced River (proposed wild and scenic river).
- Merced River WSA (excluding Merced Wild and Scenic River and North Fork Merced [proposed wild and scenic] River).
- All remaining FFO-managed land in the planning area.

Alternative A

Action

- Manage for:
 - Visual Resources Management (VRM) Class II in the South Yuba River Management Plan area and proposed SRMA.
 - VRM Class I in the North Fork American Wild and Scenic River corridor and proposed SRMA.
 - VRM Class II in the South Fork American River Management Plan area (excluding Clark Mountain area).
 - VRM Class I in the Clark Mountain area, along the South Fork American River.
 - VRM Class I in the Tuolumne Wild and Scenic River corridor.
 - VRM Class I in the Merced Wild and Scenic River corridor (lower section only).
 - VRM Class I in the Merced River Wilderness Study Area.
 - VRM class would be decided in activity level plans (including community based plans) or on a case-by-case basis for all other FFO-managed areas.

Common to Alternatives B, C, and D*Actions*

- Complete visual contrast ratings for all proposed surface-disturbing projects to ensure they meet VRM Class Objectives.
- Complete visual contrast ratings for existing roads and facilities, and identify opportunities to reduce existing visual impacts through modification or rehabilitation.
- Complete inventory of existing and potential key scenic vista points along road and trail corridors within the Sierra Planning Area.
- Design projects and facilities to meet the objectives of the established visual classifications.
- Mitigate all surface-disturbing actions that do not meet VRM objectives to reduce visual impacts.
- Ensure developments do not detract from the scenic integrity of the area by working with counties, agencies, and other entities with management jurisdiction (ARAA).

Alternative B*Action*

- Manage for:
 - VRM Class II in the ‘Inimum Forest Management Plan area.
 - VRM Class II in the South Yuba River Comprehensive Management Plan area and proposed SRMA.
 - VRM Class I in the North Fork American Wild and Scenic River corridor and proposed SRMA.
 - VRM Class II in the South Fork American River Management Plan area (excluding the Clark Mountain area).
 - VRM Class I in the Clark Mountain area, located along the South Fork American River.
 - VRM Class II in the Pine Hill Preserve (ARAA).
 - VRM Class II in the Cosumnes River area (main stem, proposed wild and scenic river corridor).

- VRM Class II in the North Fork Cosumnes River area (proposed wild and scenic river corridor).
- VRM Class II in the Middle Fork Cosumnes River area (proposed wild and scenic river corridor).
- VRM Class II in the Cosumnes River Preserve (FFO-managed land only including the proposed ACEC).
- VRM Class I in the North Fork/Main Stem Mokelumne River area (proposed wild and scenic river corridor).
- VRM Class I in the Middle Fork Mokelumne River area (wild and scenic river study area).
- VRM Class I in the South Fork Mokelumne River area (wild and scenic river study area).
- VRM Class II in the New Melones Reservoir /Stanislaus River area (including the South Fork Stanislaus River and Stony Gulch).
- VRM Class I in the Tuolumne Wild and Scenic River corridor (lower).
- VRM Class I in the North Fork Tuolumne River (proposed wild and – scenic river corridor).
- VRM Class I Turnback Creek area (TRAA).
- VRM Class II in the Red Hills area (including the Red Hills ACEC and the proposed Red Hills ACEC addition and SRMA).
- VRM Class II in the Lake Don Pedro/Highway 49 viewshed (TRAA).
- VRM Class II in the Lake McClure/Highway 49 viewshed (MRAA).
- VRM Class I in the Merced Wild and Scenic River corridor (lower section only).
- VRM Class I in the North Fork Merced River area (proposed wild and scenic river corridor)
- VRM Class I in the Merced River Wilderness Study Area, excluding the Merced Wild and Scenic River (wild section) and the proposed North Fork Merced Wild and Scenic River corridor.
- VRM Class II in other FFO-managed areas not specifically identified.

Alternative C

Action

- Manage for:
 - VRM Class II in the 'Inimum Forest Management Plan area.
 - VRM Class II in the South Yuba River Comprehensive Management Plan area and proposed SRMA.
 - VRM Class I in the North Fork American Wild and Scenic River corridor and proposed SRMA.
 - VRM Class II in the South Fork American River Management Plan area (excluding the Clark Mountain area).
 - VRM Class I in the Clark Mountain area, located along the South Fork American River.
 - VRM Class III in the Pine Hill Preserve (ARAA).
 - VRM Class III in the Cosumnes River area (main stem, proposed wild and scenic river corridor).
 - VRM Class III in the North Fork Cosumnes River area (proposed wild and scenic river corridor).
 - VRM Class III in the Middle Fork Cosumnes River area (proposed wild and scenic river corridor).
 - VRM Class III in the Cosumnes River Preserve (FFO-managed land only including the proposed ACEC).
 - VRM Class II in the North Fork/Main Stem Mokelumne River area (proposed wild and scenic river corridor).
 - VRM Class III in the Middle Fork Mokelumne River area (wild and scenic river study area).
 - VRM Class III in the South Fork Mokelumne River area (wild and scenic river study area).
 - VRM Class III in the New Melones Reservoir/Stanislaus River area (including the South Fork Stanislaus River and Stony Gulch)
 - VRM Class I in the Tuolumne Wild and Scenic River corridor (lower).

- VRM Class II in the North Fork Tuolumne River (proposed wild and scenic river corridor).
- VRM Class II Turnback Creek area (TRAA).
- VRM Class III in the Red Hills area (including the Red Hills ACEC and the proposed Red Hills ACEC addition and SRMA).
- VRM Class III in the Lake Don Pedro/Highway 49 viewshed (TRAA).
- VRM Class III in the Lake McClure/Highway 49 viewshed (MRAA).
- VRM Class I in the Merced Wild and Scenic River corridor (lower section only).
- VRM Class II in the North Fork Merced River area (proposed wild and scenic river corridor, excluding Merced River Wilderness Study Area).
- VRM Class III in the Merced River Wilderness Study Area, excluding the Merced Wild and Scenic River (wild section) and the proposed North Fork Merced Wild and Scenic River corridor.
- VRM Class III in other FFO-managed areas not specifically identified.

Alternative D

Action

- Manage for:
 - VRM Class II in the ‘Inimum Forest Management Plan area.
 - VRM Class II in the South Yuba River Comprehensive Management Plan area and proposed SRMA.
 - VRM Class I in the North Fork American Wild and Scenic River corridor and proposed SRMA.
 - VRM Class II in the South Fork American River Management Plan area (excluding the Clark Mountain area).
 - VRM Class I in the Clark Mountain area, located along the South Fork American River.
 - VRM Class II in the Pine Hill Preserve (ARAA).
 - VRM Class II in the Cosumnes River area (main stem, proposed wild and scenic river corridor).

- VRM Class II in the North Fork Cosumnes River area (proposed wild and scenic river corridor).
- VRM Class II in the Middle Fork Cosumnes River area (proposed wild and scenic river corridor).
- VRM Class II in the Cosumnes River Preserve (FFO-managed land only including the proposed ACEC).
- VRM Class I in the North Fork/Main Stem Mokelumne River area (proposed wild and scenic river corridor).
- VRM Class I in the Middle Fork Mokelumne River area (wild and scenic river study area).
- VRM Class II in the South Fork Mokelumne River area (wild and scenic river study area).
- VRM Class II in the New Melones Reservoir/Stanislaus River area (including the South Fork Stanislaus River and Stony Gulch).
- VRM Class I in the Tuolumne Wild and Scenic River corridor (lower).
- VRM Class I in the North Fork Tuolumne River (proposed wild and scenic river corridor).
- VRM Class II Turnback Creek area (TRAA).
- VRM Class II in the Red Hills area (including the Red Hills ACEC and the proposed Red Hills ACEC addition and SRMA).
- VRM Class III in the Lake Don Pedro/Highway 49 viewshed (TRAA).
- VRM Class II in the Lake McClure/Highway 49 viewshed (MRAA).
- VRM Class I in the Merced Wild and Scenic River corridor (lower section only).
- VRM Class I in the North Fork Merced River area (proposed wild and scenic river corridor).
- VRM Class II in the Merced River Wilderness Study Area, excluding the Merced Wild and Scenic River (wild section) and the proposed North Fork Merced Wild and Scenic River corridor.
- VRM Class III in other FFO-managed areas not specifically identified.

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2.11 Cave Resources

Goal

- Protect and maintain significant cave resources.

Objective

- Inventory, document, and evaluate cave resources in limestone formation on FFO-managed lands in the planning area.

Alternative A

- No existing decisions on caves.

Alternative B

Actions

- Complete a geospatial survey of the entrance to Crystal Palace Cave (SRAA) to determine its location in proximity to FFO-managed land and USFS land.
- Complete a preliminary survey of the characteristics of Crystal Palace Cave to establish if the cave meets the criteria to be nominated as significant cave resource under 43 Code of Federal Regulations (CFR) 37.11.
- Implement a protection plan for Crystal Palace Cave.

Alternatives C and D

Action

- Complete a geospatial survey of the entrance to Crystal Palace Cave to determine its location in proximity to FFO-managed land and USFS land.

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2.12 Forestry and Woodlands

Goal

- Manage all forests and woodlands under the principles of multiple use, sustained yield, and protection of the environment in accordance with federal laws, regulations, and policies.

Objectives

- Focus on the ecological condition of forests and woodlands, expressed in terms of forest health and characterized by such factors as age, structure, composition, function, vigor, and resilience to disturbances from extensive insect and disease epidemics, catastrophic wildfires, or other factors.
- Encourage natural processes of growth and decay to reestablish late-succession forest conditions, such as multi-layered canopies, large snags and downed logs, large-diameter trees, and organic matter-rich forest floors.

Alternative A

Actions

- Manage timber lands for production consistent with environmental quality; employ intensive forest management practices.
- Manage timber production base as per the Sustained Yield Unit (SYU)-15 Management Plan.
- Prescribed fire to improve timber production.
- Manage FFO-managed forestlands in the San Juan Ridge area (YRAA) in accordance with the 'Inimim Forest Management Plan.
- Manage FFO-managed forestlands in the Round Mountain Area (YRAA) in accordance with the Round Mountain Management Plan.
- Manage FFO-managed forestlands in the Iowa Hill Area (ARAA) in accordance with the Iowa Hill Forest Management Plan.

Common to Alternatives B, C, and D

Actions

- Update and refine forest and woodland inventories as part of community based or activity-level planning.
- Subject timber harvests to guidelines described in Appendix C.

- Manage FFO-managed forestlands in the San Juan Ridge area (YRAA) in accordance with the ‘Inimim Forest Management Plan.
- Manage FFO-managed forestlands in the Round Mountain Area (YRAA) in accordance with the Round Mountain Management Plan.
- Manage FFO-managed forestlands in the Iowa Hill Area (ARAA) in accordance with the Iowa Hill Forest Management Plan.
- Allow timber sales for salvage of damaged timber.

Alternative B

Actions

- Manage conifer forest toward old-growth seral conditions.
- Implement thinning for forest health and to enhance special status species habitat.

Alternative C

Actions

- Increase overall production of timber stands.
- Maintain timber plantation sites through thinning.
- Implement thinning for forest health and fuels reduction.
- Revise SYU-15 harvest levels by completing a new inventory of timber lands. Develop allowable harvest levels and available commercial timber from this inventory.

Alternative D

Actions

- Implement thinning for forest health and fuels reduction.
- Maintain timber plantations through thinning.
- Develop allowable harvest levels and available commercial timber from community based and activity-level plans.

2.13 Livestock Grazing

Goal

- Livestock management will be manageable and achieve the four fundamentals of rangeland health:
 - Watersheds are properly functioning;
 - Ecological processes are in order;
 - Water quality complies with state standards; and
 - Habitats of protected species are in order.

Objectives

- Ensure soils exhibit functional biological and physical characteristics appropriate to soil type, climate, and land form.
- Maintain or enhance healthy, productive, and diverse populations of native species, including special status species.
- Ensure riparian/wetland vegetation and structure and associated stream channels and floodplains are functioning properly, achieving an advanced ecological status, or making significant progress toward these conditions.
- Ensure surface and groundwater quality complies with California or other appropriate water quality standards.

Alternative A

Actions

- Manage grazing to provide 700 pounds per acre of residual mulch.
- Manage to increase forage production.
- Develop an allotment management plan for Hunter Valley Mountain (MRAA).
- Eliminate grazing between the Merced River and the Merced River campground access road.
- Prohibit grazing in the Ponderosa parcel and the Planning Unit C parcel, both located along the South Fork American River.

Common to Alternatives B, C, and D

Actions

- In areas not available for livestock grazing, allow prescriptive grazing on an as-needed basis for weed control, fuel reduction, and habitat management.
- Reduce or terminate authorized grazing preference if there is excessive soil erosion or poor range conditions to provide forage for wildlife or to enhance recreational use.
- Change authorized grazing preference and season of use to meet or make progress toward meeting standards established by the Central California Standards and Guidelines for Livestock Grazing (dated June 2000).
- Direct range improvements at resolving resource concerns, improving wetland/riparian areas, overall vegetation/ground cover, and water quality, and meeting or making significant progress toward meeting standards.
- Temporarily suspend grazing use on lease areas where monitoring has shown special status species are being negatively impacted by grazing.

Alternative B

Actions

- Make allotments with less than 100 AUMs unavailable for livestock grazing upon relinquishment of current leases. There are 14,497 acres of FFO-managed land that would no longer be available for livestock grazing, with a reduced allocation of 1,309 AUMs.
- Cancel grazing use on leases where monitoring has shown grazing is negatively impacting significant biological and cultural resources.

Alternative C

Actions

- Make available for livestock grazing all FFO-managed lands outside of SRMAs and special designation areas. There would likely be 69,178 acres grazed in 62 allotments with an allocation of 7,140 AUMs, based on demand levels from 10 years ago when there was more emphasis on maintaining smaller grazing units.
- Use grazing as a tool for hazardous fuels reduction.

Alternative D

Actions

- Make unavailable for livestock grazing allotments with less than 25 AUMs upon relinquishment of current leases. Special circumstances may preclude the relinquishment of a few of these leases. Manageability of the remaining leases would be analyzed on a case-by-case basis. This analysis would include size and validity of the lease, resource conditions, and economic considerations of both the leasee and the FFO. There are 1,429 acres of FFO-managed land that would no longer be available, with a reduced allocation of 156 AUMs. There would be 57,482 of land available for livestock grazing in 34 allotments with an allocation of 5,567 AUMs.

Alternative B

Alt B

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2.14 Energy and Minerals

2.14.1 Leasable Minerals

Goal

- Provide opportunities for the exploration and development of oil and gas resources.

Objectives

- Minimize impacts to other resource values.
- Ensure completion of reclamation of lands disturbed by exploration and drilling activities.
- Determine appropriate entry and development scenarios for lessees.

Common to Alternatives A, B, and D

Actions

- Issue oil and gas leases within areas having a high potential for the development of natural gas as follows:
 - Lease under Standard Stipulations areas that do not require special stipulations.
 - Lease under Timing Limitation Stipulations areas that have sensitive seasonal wildlife habitat.
 - Lease under Controlled Surface Use Stipulations lands acquired by other federal agencies. Obtain concurrence from these agencies before leasing.
 - Lease under the No Surface Occupancy Stipulation lands in Special Recreation Management Areas; Special Management Areas (ACECs, wild and scenic river areas, the Merced River Wilderness Study Area); areas with special status species; and areas with significant cultural resources.
 - Prohibit leasing of lands within national wildlife refuges, in incorporated cities, or in areas zoned for residential use.
 - Lease lands in the “No Leasing” category should they become subject to the drainage of federal gas deposits by wells in adjacent privately owned mineral estate. Lease under the No Surface Occupancy Stipulation.
 - Process applications for permits to drill and other proposals for the exploration and development of oil and gas.

Alternative C

Actions

- Issue oil and gas leases within areas having a high potential for the development of natural gas as follows:
 - Lease under Standard Stipulations areas that do not require special stipulations.
 - Lease under Timing Limitation Stipulations areas that have sensitive seasonal wildlife habitat.
 - Lease under Controlled Surface Use Stipulations lands acquired by other federal agencies. Obtain concurrence from these agencies before leasing.
 - Lease under the No Surface Occupancy Stipulation lands in Special Recreation Management Areas; Special Management Areas (ACECs, wild and scenic river areas, the Merced River Wilderness Study Area); areas with special status species; and areas with significant cultural resources.
 - Prohibit leasing of lands in incorporated cities or in areas zoned for residential use.
 - Allow leasing of lands within national wildlife refuges. Lease under the No Surface Occupancy Stipulation.
 - Lease lands in the “No Leasing” category should become subject to the drainage of federal gas deposits by wells in adjacent privately owned mineral estate. Lease under the No Surface Occupancy Stipulation.
 - Process applications for permits to drill and other proposals for the exploration and development of oil and gas.

2.14.2 Locatable Minerals

Goal

- Provide opportunities for the exploration of locatable mineral resources, the location of mining claims (including mill and tunnel sites), and the mining of locatable mineral deposits.

Objectives

- Minimize impacts to other resource values.
- Ensure that reclamation of lands disturbed by exploration and mining activities is completed.

Common to All Alternatives

Actions

- Implement surface management and occupancy regulations 43 CFR 3715 and 3809. The storing of personal property, equipment, and other items on a mining claim for more than 14 days in any 90-day period, even if not associated with residential occupancy, would not be regarded as casual use (43 CFR 3809.5 Casual Use (2)).
- Establish all areas with special designations as special status areas as defined in 43 CFR 3809.11 to protect resource values from impacts associated with mining claim operations. Claim operations that would exceed the level of casual use in these areas or in areas known to contain federally proposed or listed threatened or endangered species or their proposed or designated important habitat may only proceed under a BLM-approved plan of operations.
- Propose mineral entry withdrawals on those FFO-managed lands with special designations. New operations on preexisting claims within the South Fork American River Management Plan area and elsewhere on lands withdrawn from mineral entry may not exceed casual use unless valid existing rights are verified through a validity determination conducted by BLM mineral examiners (43 CFR 3809.100). Operations under previously accepted Notices or approved Plans of Operations may continue without verification of valid existing right (VER) if they do not interfere with the purposes of the withdrawal
- Conduct patent (validity) examinations if/when the moratorium on accepting mining claim patent applications is lifted.

2.14.3 Salable Minerals

Goal

- Provide opportunities for the exploration and orderly development of mineral materials in the Sierra Planning Area.

Common to All Alternatives

Actions

- Complete reclamation of mineral material sites per the terms and conditions of the permit.
- Allow, without a permit, collecting for personal use up to 1 cubic yard (two pickup loads) of sand, gravel, rocks or other mineral materials per year using

only hand tools. No use of mechanized earth-moving equipment would be allowed. No collection of either archaeological or paleontological resources (i.e., petrified wood, plant impressions, ammonites, crinoids, etc.) would be allowed.

- Dispose of all mercury recovered during the processing of construction aggregate (sand and gravel) deposits in which a gold recovery circuit is used, per the terms and conditions of sales contracts or free use permits.

Alternative B

Actions

- Limit mineral material sales to existing pits, except as follows:
 - FFO-managed land in the Yuba Goldfields would be available for mineral material sales. Sales of material would be used for the restoration of wetland and riparian habitat on FFO-managed lands.

Alternative C

Actions

- Expand mineral material sales on a case-by-case basis.
- FFO-managed land in the Yuba Goldfields would be available for mineral material sales. Sales of material could be used for the restoration of wetland and riparian habitat on FFO-managed lands.

Alternative D

Actions

- Limit mineral material sales to existing pits and to sites where only minor impacts to other resources would occur, except as follows:
- FFO-managed land in the Yuba Goldfields would be available for mineral material sales. Sales of material would be used for the restoration of wetland and riparian habitat on FFO-managed lands.

2.15 Recreation

Under Alternatives B, C, and D, FFO-managed lands in the planning area would be identified as either in a SRMA or an ERMA. SRMAs are areas in which the FFO would focus recreational management to produce described recreational experiences or opportunities. ERMAs are all FFO-managed lands outside of SRMAs. The management of ERMAs would consist primarily of custodial actions. No SRMAs or ERMAs would be created under Alternative A.

2.15.1 Terms and Definitions

Recreational uses are categorized into one of the following:

- **Non-motorized Recreation:** includes white water rafting, hiking, backpacking, bird and wildlife viewing, equestrian use, environmental education, sightseeing, picnicking, and photography. Non-motorized recreation does not include activities listed as motorized or mechanized recreation.
- **Mechanized Recreation:** includes cycling, mountain biking, hang gliding, and rock-climbing using assistive devices.
- **Motorized Recreation:** includes the use of OHVs (as described in the Transportation and Access section) and car touring.

The Recreation Opportunities Spectrum (ROS) is used to identify key broad categories of recreation activities and experiences that occur in the proposed SRMAs. If these recreation activities can be identified, these opportunities can be administered by managing the setting, facilities, signing, level of management presence and law enforcement, and kinds of access to these areas. The terminology for this ROS has been customized to fit the scattered land tract pattern in the planning area's river corridors. The definitions and categories are directed toward summer, peak-use, and water- and trail-oriented activities. Other recreation activities may be important and equally valued, but may not require ROS characterizations for management purposes.

The recreation opportunities for the proposed SRMAs are organized into three major categories, followed by the recreation experiences associated with that area. The three areas are described as follows:

1. **High Use Areas:** providing opportunities for high levels of social interaction, characterized by high levels of use with people in close proximity.
2. **Transition Areas:** providing opportunities for moderate levels of social interaction, characterized by moderate levels of use with people in close to moderate proximity to each other.

3. **Remote Areas:** providing opportunities for low levels of social interaction, characterized by a focus on appreciation and a sense of solitude or remoteness.

2.15.2 General Proposed Actions

Goals

- Ensure the continued availability of outdoor recreational opportunities sought by the public while protecting other resources and resource uses.

Objectives

- Develop recreation management strategy for the large blocks of FFO-managed land located in river corridors.
- Develop recreation sites that meet public health and safety standards.
- Mitigate conflicts between recreation users as well as conflicts with other types of resource uses.
- Maintain existing visitor center, campground, trail, and day use facilities to accepted BLM standards.
- Manage recreation for a remote experience on the wild segments of the North Fork American, Tuolumne, and Merced rivers pursuant to the Wild and Scenic Rivers Act.

Common to Alternatives B and D

Action

- Designate the following as SRMAs (see Map 4, Appendix A):
 - South Yuba River
 - North Fork American River
 - South Fork American River
 - Merced River

Alternative C

Action

- Designate the following as SRMAs (see Map 4, Appendix A):
 - South Yuba River
 - North Fork American River
 - South Fork American River
 - Merced River
 - Red Hills

2.15.3 Proposed South Yuba River SRMA

The proposed South Yuba River SRMA would contain High Use Area, Transitional Area, and Remote Area zones, as defined above. This proposed ROS zoning strategy is shown in Map 4a (Appendix A). All FFO-managed lands in the proposed SRMA would be managed in accordance with the South Yuba River Comprehensive Management Plan.

Alternative A

Actions

- Provide recreation opportunities.
- Prohibit discharge of firearms on FFO-managed land in the South Yuba River Comprehensive Management Plan area.
- Improve signing and trails.

Common to Alternatives B, C, and D

Actions

- Prohibit shooting (hunting or target) in the South Yuba River corridor (0.25 mile from the centerline of the river).

2.15.4 Proposed North Fork American River SRMA

Alternative A

Actions

- Maintain and improve Stevens Trail and parking area/trailheads.

- Acquire/develop trailhead for Blue Wing Trail; maintain/improve trail.
- Develop campground, picnic area, and toilets in Gold Run Addition.
- Maintain Truro Mine Road and develop parking.
- Develop parking and overlook at Lover's Leap.
- Close and rehabilitate roads between Garrett Road and the river.
- Manage recreation consistent with North Fork American Wild and Scenic River designation.
- Regulate all commercial activities through permit program.

Common to Alternatives B, C, and D

The proposed North Fork American River SRMA would contain High Use Area, Transitional Area, and Remote Area zones, as defined above. This proposed ROS zoning strategy is shown in Map 4b (Appendix A). All FFO-managed lands in the proposed SRMA would be managed in accordance with the North Fork American River Wild and Scenic River Management Plan (to be developed).

Alternative B

Actions and Allowable Uses

- Limit facility development to areas zoned as High Use.
- No target shooting.
- Prohibit commercial uses.
- Area closed to mechanized recreational uses.

Alternative C

Actions and Allowable Uses

- Improve and develop parking areas and access points in areas zoned as High Use and Transitional.
- Allow target shooting in designated locations, if any.
- Allow commercial uses through special recreation use permits.
- Area open to mechanized recreational uses.

Alternative D

Actions and Allowable Uses

- Improve and develop parking areas and access points in areas zoned as High Use and Transitional.
- Target shooting in designated locations, if any. Shooting would only be allowed if there is public cooperation, including maintenance of the shooting location by designated groups and individuals.
- Commercial uses would be allowed through special recreation use permits.
- Area closed to mechanized recreational uses.

2.15.5 Proposed South Fork American River SRMA

The proposed South Fork American River SRMA would contain High Use Area, Transitional Area, and Remote Area zones, as defined above. This proposed ROS zoning strategy is shown on Map 4c (Appendix A). All FFO-managed land within the proposed SRMA would be managed in accordance with the South Fork American River Management Plan and its amendments.

Common to Alternatives A, B, C, and D

Actions and Allowable Uses

- Limit equestrian use to designated trails; open routes only when signed open.
- Limit OHV use to designated routes; routes would be open only when signed open.
- Limit mechanical use to designated routes; routes would be open only when signed open.
- No target shooting.
- Allow hunting in designated areas only.
- Allow camping in designated areas only.
- Allow commercial uses through special recreation use permits.
- Expand trail network.
- Increase public access.
- Develop facilities for interpretation and sanitation.

2.15.6 Proposed Merced River SRMA

The proposed Merced River SRMA would contain High Use Area, Transitional Area, and Remote Area zones, as defined above. This proposed ROS zoning strategy is shown in Map 4e (Appendix A). All FFO-managed land within the proposed SRMA would be managed in accordance with the Merced River Wild and Scenic Management Plan.

Common to All Alternatives

Objective

- Manage for white water recreation on river concurrent with other types of recreation.

Actions and Allowable Uses

- No discharge of firearms within 0.5 mile of Merced River.
- Street legal motorized vehicle use only on the Merced River campground access road.
- Suction dredging not allowed on the designated wild segment, except within mining claims (predating the river's wild and scenic designation) under approved plans of operations.
- Prohibit camping on FFO-managed land on the south side of the Merced River (unless the FFO gives written permission).
- Work toward the goal of building a non-motorized trail along the Merced River from Bagby to El Portal.

2.15.7 Extensive Recreation Management Areas

Common to B, C, and D

Actions and Allowable Uses

- Manage ERMAs with priority consideration for air quality, significant biological and cultural resources, watershed protection, and public health and safety.
- Limit camping to 14 days within a 90-day consecutive period.
- Prohibit cutting of live vegetation and firewood for camping purposes in developed recreation sites.
- Allow recreational suction dredging through permit only.

- 2.16 • Generally allow hunting unless signed closed.
- Goal • Target shooting is generally allowed unless signed closed. Any shooting on FFO-managed land must meet state laws and regulations concerning the discharge of firearms. No shooting within 150 yards of any human-occupied dwelling, house, residence, barn, or other outbuilding used in connection therewith. No shooting within 150 yards of trails or other recreational developments, transmission towers, telecommunications structures, and other facilities on FFO-managed land. Shooters are responsible for understanding gun safety and for finding FFO-managed land that is appropriate and safe for shooting, including land where there is minimal ricochet potential and suitable backstops to prevent continued bullet/projectile travel.

Criterion 10: Alternative 10A, B, C, and D

10.000

- Designate the proposed route of travel as a FFO-managed land area under the BLM Wildlife Management Policy for Landowner Withdrawal.
- Designate the rest of the planning area as closed to FFO and outbuilding use. Travel not at designated routes is not allowed.
- Closed routes and areas may be authorized for use only after a permit has been approved in compliance with review by the BLM Field Manager.
- Designations for FFOs do not apply to "any vehicle which is in operation authorized by the authorized official or otherwise officially approved" (43 CFR 8140.0-5(a)(3)).
- Vehicular travel in closed areas, particularly wildlife habitats and during seasonal periods, would be restricted, seasonally, as necessary to prevent beds, deer ranges, riparian nesting areas.
- All routes not specifically marked as open to FFO use are closed to FFO use.
- The criteria for closure of routes to FFO use are as follows:
 - The route is not critical to FFO-managed land users.
 - The route is located on FFO-managed land that is too small to buffer off enough to accommodate that use. There are no viable curbs, berms, or other systems and impacts or activities that are necessary to prevent, avoid, or minimize environmental damages, etc. that are reasonably foreseeable.

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2.16 Transportation and Access

Goal

- Provide for appropriate levels of motorized vehicular, pedestrian, equestrian, and mountain bike uses commensurate with other resources and resource uses.

Alternative A

Allowable Use

- All areas in the planning area are open to OHV and motorized use, unless previously closed.

Common to Alternatives B, C, and D

Actions

- Designate the Merced River WSA as closed to OHV and motorized use, per the BLM Interim Management Policy for Lands under Wilderness Review.
- Designate the rest of the planning area as limited to OHV and motorized use. Travel off of designated routes is not allowed.
- Closed routes and areas may be authorized for use on a case-by-case basis, after appropriate environmental review, by the BLM Field Manager.
- Designations for OHVs do not apply to “any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved” (43 CFR 8340.0-5(a)(3)).
- Vehicular travel in crucial and important wildlife habitats and during important periods would be restricted seasonally, as necessary (spawning beds, deer ranges, raptor nesting areas).
- All routes not specifically marked/signed open for OHV use are closed to OHV use.
- The criteria for closure of a route to OHV use are as follows:
 - The route is not critical to FFO-managed land access.
 - The route is located on FFO-managed parcels that are too small in terms of acreage to accommodate this use. There are no viable circuits, loops, or route systems, and impacts to adjacent private property (trespass, noise, environmental damages, etc.) are reasonably foreseeable.

- Air, soil, watershed, cultural, paleontological, and biological resources (including ACEC values) are threatened and could be damaged or destroyed by motorized vehicle use.
- It would not be feasible for the FFO to properly fix or maintain routes.
- Closing the route would prevent dumping and other illegal activities in areas where there is a history of this kind of abuse of public land. Wildfire ignition, occupancy trespass, and other problems are also reasonably foreseeable based on our experience. The situation cannot be sufficiently policed with anticipated funding levels.
- The route was created without FFO authorization.
- The criteria for allowing OHV use on a route are as follows:
 - The route provides access to public land.
 - The route has been used as an important through-road for decades.
 - Opening the route would not threaten air, watershed, soil, cultural, and biological resources.
 - The route is located in a parcel that is large enough in size to handle motorized vehicle use. Impacts to adjacent private land are not foreseeable.
- Close Burnt Flat Road to motorized vehicle use (ARAA).
- Close Truro Mine Road to motorized vehicle use at the North Fork American Wild and Scenic River boundary, at a point 0.25 mile from the south bank of the river (ARAA).
- Develop improved access for the Blue Wing trailhead (ARAA).
- Close Western States Trail to motorized vehicle use (ARAA).
- Coordinate with El Dorado County to establish a non-motorized trail system from Bucks Bar to Mount Aukum or the Grizzly Flat area (CRAA).
- Work towards implementing the Hetch Hetchy Railroad rails-to-trails project (TRAA).
- Maintain closure of Red Hills mitigation road to motorized vehicle use (TRAA).
- Maintain and reconstruct the North Fork Merced foot trail.

- Close all unauthorized access points into the Merced River WSA and, subsequently, the wild segment of the Merced Wild and Scenic River. Close the unauthorized road between the North Fork Merced and Lake McClure near Bagby.
- Prohibit camping on the south side of Merced River unless the FFO gives written authorization.
- Close all roads on the Bald Mountain parcel to motorized vehicle use (TRAA).
- Work toward implementing the Mokelumne River Coast to Crest Trail initiative (MoRAA).
- Restore 2 miles of the historic Blue Wing Trail (ARAA).
- Prohibit motorized vehicle use in the Rancheria townsite parcel (MoRAA).
- Prohibit motorized vehicle use in the Campo Seco parcel (MoRAA).
- Close the driveway to the Ophir Mine, Arrastraville (TRAA) to motorized vehicle use.
- Close the road to Governor/Live Oak Mine to motorized vehicle use (MRAA).
- Close to motorized vehicle use and rehabilitate roads between Garrett Road and the North Fork American River (ARAA).
- Close Rewinkle Road to motorized vehicle use (ARAA).
- Establish road closure criteria for the Merced River campground access road.

Alternative C

Action

- Limit motorized vehicle/OHV use to existing, open routes, except routes discussed in the proposed actions under Common to Alternatives B, C, and D (above), and those routes that have been closed through a previous action.

Alternatives B and D

Actions

- Limit motorized vehicle/OHV use to the designated routes shown on Map 6 (a-g). Routes on FFO-managed land not shown as designated on Map 6 (a-g) would be unavailable for motorized vehicle/OHV use by the general public, unless the route is:

- A public road/highway maintained by the county or state;
 - A public highway as determined by established principles of state law regarding public easements;
 - Part of an official FFO-managed parking area at a trailhead, campground, boat launch, etc.
- Undesignated routes may be used by parties holding specific BLM authorizations (i.e., a right-of-way, permit, etc.), and may be used by BLM and its contractors as needed for management purposes.
 - Designated routes shown as “interim” on Map 6 (a-g) would be open to motorized vehicle use. However these routes (or portions of these routes) may eventually be closed, after further environmental review, by the BLM Field Manager.

Alternative C

Action

- Designate existing, open routes, except as in common to Alternatives B, C, and D, as available for motorized/OHV use.

2.17 Lands and Realty

Goals

- Develop a public land pattern which enhances resource values and uses.
- Respond to demand for land use authorizations.

Objectives

- Manage the FFO-managed lands to support the goals and objectives of other resource programs.
- Adjust 15,000 acres of FFO-managed land and private land through acquisition or disposal in ten years.

Alternative A

Actions

- Consider ROW applications on a case-by-case basis.
- Acquire scenic easements and in-holdings within the North Fork American Wild and Scenic River corridor.
- Dispose of land through sale or exchange to decrease management costs.
- Retain lands identified by counties for retention.
- Transfer lands to the USFS that may be better managed by USFS.
- Retain riverfront parcels on the Mokelumne River.
- Transfer lands within the Tuolumne Wild and Scenic River corridor to the national forest boundary.
- Acquire lands along the Merced River.
- Acquire lands in support of the Limestone Salamander ACEC.
- Acquire easements or fee land in support of ecological preserves for rare plants (ARAA).
- Avoid disposal of FFO-managed lands within the Round Mountain area.

Common to Alternatives B, C, and D

- Lands and realty management actions are divided into four groups: land ownership adjustments, land use authorizations, withdrawals/classifications, and access.

2.17.1 Land Ownership Adjustment

Common to All Alternatives

- FFO-managed lands not identified for retention would be available for disposal on a case-by-case basis when they are determined to meet the disposal criteria identified in the Federal Land Policy and Management Act (see below).
- Prior to any disposal, a site-specific analysis must determine that the lands considered:
 - Contain no significant recreation, biological, cultural, or other values the loss of which could not be mitigated;
 - Have no overriding public values;
 - Are not within or adjacent to a special designation area;
 - Represent no substantial public investments (including part of a water or power development); and
 - Serve the public interest.
- Lands would be provided to government entities through sale, exchange, or Recreation and Public Purposes Act sale or lease when the lands identified conform to the disposal criteria. The FFO would work with local government to dispose of sanitary landfills and transfer stations currently authorized under Recreation and Public Purposes Act sales and leases.
- Unauthorized land uses would be resolved. If circumstances warrant, the issuance of a permit, lease, or ROW authorizing the use could occur to resolve trespass. Disposal of land through sale or exchange may be considered to resolve trespasses provided the lands conform to the disposal criteria.
- Land exchanges would be the preferred method of disposal, followed by sale and then Recreation and Public Purposes Act transfer.
- Expand FFO ownership within existing and proposed wild and scenic river corridors. Any acquisitions would be based on a willing buyer/willing seller relationship.

- Accept management responsibility of federally owned lands in the Yuba Goldfields through a transfer from the Army Corp of Engineers.
- Work towards settling title disputes and facilitating salable mineral development, reclamation, and public use of federal lands in the Yuba Goldfields (YRAA) through land exchanges, land sales, or other appropriate means.
- Convey mineral interest on lands designated for potential disposal that are determined to have low potential for mineral development.

Alternative B

Actions

- FFO-managed lands within wild and scenic river corridors, proposed wild and scenic river corridors (as identified for Alternative B in the Special Designation section), the Merced River WSA, ACECs, preserves, proposed ACECs and ACEC additions (as identified for Alternative B in the Special Designation section), and proposed SRMAs (as identified for Alternative B in the Recreation section) would be retained in BLM ownership. BLM would also retain lands withdrawn for water projects, lands with significant cultural resources, and lands with special status species and state listed species. Other lands meet the disposal criteria in Section 203 of the Federal Lands Policy and Management Act and would be available for potential disposal, subject to the process, the criteria common to all alternatives, and other requirements. Lands shown on Map 9b are identified for retention; therefore the balance of lands (subject to the process and criteria common to all alternatives) would be available for potential disposal.
- Lands identified for potential disposal (lands not identified specifically for retention) would be disposed of only if no significant natural or cultural resource values are present or if lands being acquired through exchange have higher natural or cultural resource values than the FFO-managed lands being disposed of.
- Consider acquisition of lands or interest in lands to facilitate various resource management objectives. Concentrate acquisition efforts within and adjacent to special designation areas and important habitat for special status species. Acquisitions must conform to the acquisition criteria delineated below.
- Acquire lands capable of sustaining Central Valley wetlands. Work in partnership with Central Valley Joint Venture, state, and local government for the conservation and protection of this habitat, including the following projects:

- The Coon Creek and Auburn Ravine riparian/wetlands project with Central Valley Joint Venture and Placer and Sutter Counties (CVAA).
- The Honcut Creek and Goldfields riparian/wetlands project with Central Valley Joint Venture and Yuba County (YRAA).
- The Cosumnes River Preserve riparian and wetlands project.
- Acquire riparian forest and riverine habitat in support of Riparian Habitat Joint Venture, Central Valley Joint Venture, and Partners in Flight.
- Acquire blue oak woodlands in association with local and state government objectives for Habitat Conservation areas and Department Of Fish and Game Conceptual Areas for Preservation and Protection.
- Acquire habitat for special status species.
- Acquire an additional 4,000 acres of wetland habitat/riparian in the CVAA in support of giant garter snake, sandhill crane, and Swainson's hawk preservation efforts.
- Acquire additional lands on Table Mountain to support vernal pool swale complex (SRAA and TRAA).
- Acquire land supporting habitat for Chinese Camp brodiaea and California verbena.
- Pursue land acquisition adjacent to rivers as opportunities arise.
- Acquire cultural resources that have National Register of Historic Places and/or National Landmark status or qualities.

Alternative C

Actions

- FFO-managed lands within wild and scenic river corridors, proposed wild and scenic river corridors (as identified for Alternative C in the Special Designation section), the Merced River WSA, ACECs, preserves, all proposed ACECs and ACEC additions (as identified for Alternative C in the Special Designation section), and proposed SRMAs (as identified for Alternative C in the Recreation section) would be retained in BLM ownership. BLM would also retain lands withdrawn for water projects, lands with significant cultural resources, and lands with federally listed species. Other lands meet the disposal criteria in Section 203 of the Federal Lands Policy and Management Act and would be available for potential disposal, subject to the process, the criteria common to all alternatives, and other requirements. Lands shown on

Map 9c are identified for retention; therefore, the balance of lands (subject to the process and criteria common to all alternatives) would be available for potential disposal.

- Acquisition of lands or interest in lands would be considered to facilitate various resource management objectives. Acquisition efforts would be concentrated within and adjacent to SRMAs. Acquisitions must conform to the acquisition criteria below:
 - Acquire lands within and adjacent to SRMAs.
 - Acquire lands within wild and scenic river corridors.
 - Acquire lands in support of public recreation opportunities, such as trail access, trail development, hunting, fishing, and OHV.
 - Exchange lands to improve public access and consolidate FFO-managed lands in SRMAs.
 - FFO-managed lands within ACECs, proposed SRMAs, the Merced River WSA, and wild and scenic river corridors (as identified for Alternative C in the Special Management and Recreation sections) would be retained in federal ownership.
 - Any specific land disposal must meet the criteria and process common to all alternatives.
- Make FFO-managed lands available for transfer and/or lease under the Recreation and Public Purposes Act. Transfers currently under consideration include:
 - Big Oak Flat Little League Field of Tuolumne County.
 - Tuolumne County Youth Camp.
 - Brownsville sanitation transfer site to Yuba County.
 - Mariposa County parkland site.
 - Foresthill Range and Gun Club shooting range site.
- Priority for disposal of lands would be given to lands that would contribute to community or economic development.

Alternative D

Actions

- FFO-managed lands within wild and scenic river corridors, proposed wild and scenic river corridors (as identified for Alternative D in the Special Designation section), the Merced River WSA, ACECs, preserves, all proposed ACECs and ACEC additions (as identified for Alternative D in the Special Designation section), and proposed SRMAs (as identified for Alternative D in the Recreation section) would be retained in BLM ownership. BLM would also retain lands withdrawn for water projects, lands with significant cultural resources, and lands with federally listed species. Other lands meet the disposal criteria in Section 203 of the Federal Lands Policy and Management Act and would be available for potential disposal, subject to the process, the criteria common to all alternatives, and other requirements. Lands shown on Map 9d are identified for retention; therefore, the balance of lands (subject to the process and criteria common to all alternatives) would be available for potential disposal.
- Make FFO-managed lands available for transfer and/or lease under the Recreation and Public Purposes Act. Transfers currently under consideration include:
 - Big Oak Flat Little League Field to Tuolumne County.
 - Tuolumne County Youth Camp.
 - Brownsville sanitation transfer site to Yuba County. This transfer is contingent on the resolution of special status species issues. The surrounding land is being considered for ACEC designation.
 - Mariposa County parkland site.
 - Foresthill Range and Gun Club shooting range site.
- Acquisition of lands or interest in lands would be considered to facilitate various resource management objectives. Acquisitions must conform to the acquisition criteria below:
 - Acquire lands within and adjacent to SRMAs proposed under Alternative D.
 - Acquire lands and/or easements to complete the South Fork American River Trail system (AARR).
 - Acquire lands within wild and scenic river corridors.

- Acquire lands and/or easements that provide public access to other public lands identified for retention.
- Acquire lands in or adjacent to areas with special designations or lands suitable to be incorporated into areas with special designations.
- Acquire blue oak woodlands in association with local and state government objectives for Habitat Conservation areas and Department Of Fish and Game Conceptual Areas for Preservation and Protection.
- Acquire habitat for special status species.
- Acquire lands capable of sustaining Central Valley wetlands. Work in partnership with Central Valley Joint Venture, state, and local governments for the conservation and protection of this habitat, including the following projects:
 - Coon and Auburn Ravine Creek riparian/wetlands project with Central Valley Joint Venture, and Placer and Sutter Counties (CVAA)
 - Honcut Creek and Goldfields riparian/wetlands project with Yuba County (CVAA).
 - Cosumnes River Preserve riparian/wetlands project.
- Acquire an additional 2,000 acres of wetland habitat/riparian in the CVAA in support of giant garter snake, sandhill crane, and Swainson’s hawk preservation efforts.
- Acquire additional land on Table Mountain that support vernal pool swale complex (SRAA and TRAA).
- Acquire lands supporting habitat of Chinese Camp brodiaea and California verbena in the vicinity of the Red Hills (TRAA).
- Acquire cultural resources that have National Register of Historic Places and/or National Landmark status and/or qualities.

2.17.2 Land Use Authorizations

Common to All Alternatives

Actions

- Designate ACECs, WSAs, WSR corridors, and SRMAs as avoidance areas for ROWs, permits, and leases.

- Do not designate ROW corridors due to the scattered public land pattern in an area that is predominately composed of private land.
- Give preference to areas with existing communication sites as locations for future ROW communication site leases.

Alternative B

Action

- Approve ROWs and other land use authorizations only if the authorizations meet visual resource management objectives.

Alternative C

Action

- Approve ROWs and land use authorizations on a case-by-case basis.

Alternative D

Action

- Approve ROWs and land use authorizations on a case-by-case basis.

2.17.3 Land Classifications and Withdrawals

Common to All Alternatives

Actions

- Process withdrawals and classifications to protect important resource values.
- Propose revocation of withdrawals which no longer serve a purpose for which they were established.
- Prior to final revocation, review withdrawn lands to determine if any other resource values require withdrawal protection.

Alternative B

Actions

- Propose mineral withdrawals for all FFO-managed lands within wild and scenic river corridors and ACEC boundaries.
- Include FFO-managed lands on Andrews Creek in the proposed mineral withdrawal for the Red Hills ACEC (TRAA).

- Propose mineral withdrawal for all FFO-managed lands in the Yuba Goldfields (YRAA). The mineral withdrawal would not prevent sales of solid mineral materials in the Yuba Goldfields.

Alternative C

Action

- No mineral withdrawals proposed.

Alternative D

Actions

- Propose mineral withdrawals for all FFO-managed lands within wild and scenic river corridors and ACEC boundaries.
- Include FFO-managed lands on Andrews Creek in the proposed mineral withdrawal for the Red Hills ACEC (TRAA).
- Propose mineral withdrawal for all FFO-managed lands in the Yuba Goldfields (YRAA). The mineral withdrawal would not prevent sales of solid mineral materials in the Yuba Goldfields.

2.17.4 Access

Common to All Alternatives

Action

- Identify key access points to FFO-managed lands in each assessment area.
- Pursue easements when practical to provide access to FFO-managed lands for recreational, cultural/historical, special designation areas, and other resource needs.
- Where necessary and consistent with designations, close or restrict access in specific areas to protect public health and safety and to protect significant environmental resources.

Alternative C

Actions

- Acquire Blue Wing Trail access, where possible (ARAA).
- Acquire Canyon Creek Trail and trailhead access, where possible (ARAA).

- Acquire and develop Bucks Bar Trail and trailhead access, where possible (CRAA).

Alternative D

Actions

- Acquire Blue Wing Trail access, where possible (ARAA).
- Acquire Canyon Creek Trail and trailhead access, where possible (ARAA).
- Acquire and develop Bucks Bar Trail and trailhead access, where possible (CRAA).

2.18 Hazardous Materials/Abandoned Mine Lands

Goal

- Minimize hazardous conditions on FFO-managed lands to reduce risks to the public and to ensure environmental health and safety.

Objectives

- Prevent hazardous materials and waste contamination due to BLM-authorized actions.
- Integrate hazardous materials and waste management policies and controls into all BLM programs.
- Remediate physical safety hazards and water quality impacts associated with abandoned mine lands.

Common to All Alternatives

Actions

- Implement precautionary measures to guard against releases or spills into the environment for all FFO-authorized activities that involve hazardous materials or their use.
- Provide appropriate public warnings of safety hazards resulting from hazardous waste spills on FFO-managed lands.
- Notify public of any storage or disposal of hazardous materials on public lands prior to the sale or disposal of those lands.
- Secure and clean up FFO-managed public lands contaminated with hazardous wastes in accordance with applicable federal and state regulations and contingency plans. Parties responsible would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations.
- Remediate physical hazards at abandoned mine land (AML) sites as funding allows. The highest priority would be given to sites near high visitor use areas, such as developed campgrounds and recreation areas, sites located near residences on adjacent private property, sites impacting water quality, and sites close to frequently traveled roads on FFO-managed public lands.

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2.19 Special Designations

2.19.1 Congressional Designations

Goal

- Continue to manage Congressional designated lands in accordance with Congressional designations.

Objectives

- Update the North Fork American Wild and Scenic River Plan.
- Work with the USFS to update the Tuolumne Wild and Scenic River Plan.
- Expand FFO ownership within existing and proposed wild and scenic river corridors.

Common to All Alternatives

The following are Congressional wild and scenic river designations; the BLM has no authority to change these designations:

- Merced Wild and Scenic River (15 miles classified as wild and recreational).
- North Fork American Wild and Scenic River (11 miles classified as wild and scenic).
- Tuolumne Wild and Scenic River (5 miles classified as wild).

2.19.2 Administrative Designations

Goal

- Provide protection for or management of significant resources on FFO-managed lands.

Objectives

- Maintain the natural character of Merced River Wilderness Study Area (in accordance with the BLM Interim Management Policy for Lands under Wilderness Review) until it is designated as a wilderness area or released by Congress.
- Provide protection for relevant and important biological and cultural resources.

- Protect rivers eligible and suitable to become part of the wild and scenic river system.
- Protect significant geologic, paleontological, and biological resources for research and study.
- Provide wildlife viewing opportunities for the public.

Actions

- Merced River WSA
 - Continue to implement the WSA Interim Management Policy and the 43 CFR 3802 regulations pertaining to mining claim operations in the Merced River WSA. Until Congress decides on designating the WSA as a Wilderness Area or releases the area from study, no operations that would impair the suitability of the area for such designation would be allowed. This means that no activities that would require the approval of a plan of operations under 43 CFR 3802.1-1 would be allowed.
 - If released by Congress from WSA designation, manage the area outside of the Merced Wild and Scenic River corridor in accordance with ERMA guidance. The FFO would conduct route designation studies for the released lands. The FFO would place a special emphasis on managing the released lands in a way that does not impact the designated outstanding remarkable values of the Merced Wild and Scenic River corridor.

2.19.2.1 Wild and Scenic River Suitability Determination

In accordance with the Wild and Scenic Rivers Act (16 U.S. Code 1271-1287) and as part of the RMP process, the FFO evaluated river segments in the planning area to determine whether they are eligible to become part of the national wild and scenic river system (NWSRS). The FFO evaluated only those river segments with sufficient FFO-managed land within the proposed wild and scenic corridor. The FFO determined that seven river segments have outstanding remarkable values and would be eligible to become part of the NWSRS (see Map 8, Appendix A).

Following the evaluation of eligibility, the FFO makes recommendations to Congress concerning the suitability of eligible river segments for inclusion in the wild and scenic rivers system through the land use planning process.

The following protective management measures would apply to river segments identified as suitable:

- **Free-flowing Values:** The free-flowing characteristics of river segments could not be modified to allow stream impoundments, diversions,

channelization, and/or rip-rapping to the extent the BLM is authorized under the law.

- **River-related Values:** Each segment would be managed to protect identified outstandingly remarkable values (subject to valid existing rights) and, to the extent practicable, such values would be enhanced.
- **Classification Impacts:** Management and development of the river and its corridor could not be modified, subject to valid existing rights, to the degree that its eligibility or suitability classification would be affected.

See Appendix E for a description of the evaluation process and proposed wild and scenic rivers.

Alternative A

No additional rivers would be recommended as suitable to Congress for wild and scenic river designation.

Alternative B

The following eligible river segments would be recommended as suitable to Congress for wild and scenic river designation (see Map 8, Appendix A):

- South Fork American (22.2 miles, classified as recreational).
- North Fork Cosumnes (25.1 miles, classified as scenic).
- Middle Fork Cosumnes (20.2 miles, classified as scenic).
- Cosumnes (10.4 miles, classified as scenic).
- North Fork Mokelumne/Main (20.2 miles, classified as wild, scenic, and recreational).
- North Fork Tuolumne (7.2 miles, classified as wild).
- North Fork Merced (6.4 miles, classified as wild).

Alternative C

The following eligible river segment would be recommended as suitable to Congress for wild and scenic river designation (see Map 8, Appendix A):

- South Fork American (22.2 miles, classified as recreational).

Alternative D

The following river segments will be recommended as suitable to Congress for wild and scenic river designation (see Map 8, Appendix A):

- South Fork American (22.2 miles, classified as recreational)
- North Fork Mokelumne/Main (20.2 miles, classified as wild, scenic, and recreational)

2.19.2.2 Designation of Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACECs) are areas of public land where special management attention is required to protect relevant and important natural and/or cultural resource values. An ACEC designation indicates to the public that the BLM recognizes these important values and has established special management measures to protect them.

Common to all Alternatives

- The following six existing ACECs would remain designated.
 - Ione Manzanita ACEC (127 acres).
 - Ione Tertiary Oxisol Soils ACEC (85 acres).
 - Limestone Salamander ACEC (1,728 acres).
 - Merced River ACEC (2,837 acres).
 - Nissenan Manzanita ACEC (73 acres).
 - Red Hills ACEC (6,611 acres).

Common to Alternatives B, C, and D

The following use restrictions would apply to all existing and new ACECs in the planning area:

- No new grazing leases would be granted unless there has been a determination that it would benefit the values (i.e., special status plants) for which the ACEC was designated.
- ROWs, leases for civic uses (i.e., Recreation and Public Purposes Act leases), and other land use authorizations would be confined to areas that lack the values for which the ACEC was designated.
- Fuels reduction projects are to be designed to minimize impacts on ACEC values.

- In cases where an ACEC is to be expanded, existing use restrictions for the ACEC would apply to the added land.

Common to Alternatives B and D

The following additional use restriction apply only to the proposed Pine Hill Preserve ACEC:

- Prohibit target shooting.
- Allow hunting.
- Prohibit overnight camping.
- Commercial uses would be allowed through special recreation use permits.
- Creation of unauthorized trails is prohibited.
- Proposals for new trail development would be considered on a case-by-case basis.
- The FFO would grant no new ROWs that would negatively impact rare plant populations or contribute to further fragmentation of rare plant habitat within the ACEC boundaries.
- Equestrian and mountain bike use is limited to existing designated trails. Creation of unauthorized trails is prohibited. Proposals for new trail development would be considered on a case-by-case basis. Trails may be designated closed to equestrian and mountain bike use due to impacts to ACEC habitat values, visual qualities, and other factors on a case-by-case basis and with appropriate public comment.

The following additional use restrictions apply only to the Red Hills ACEC and the proposed Red Hills ACEC addition:

- Continue management in accordance with Red Hills ACEC Management Plan. Develop a new Red Hills ACEC Management Plan that addresses current issues (i.e., discovery of populations of new listed species, increased recreation, etc.).
- Prohibit target shooting.
- Allow hunting.
- Prohibit overnight camping.
- Allow commercial uses through special recreation use permits.

- Maintain existing facilities to support pedestrian and equestrian activities.
- Non-motorized recreation use only.
- Equestrian and mountain bike use is limited to existing trails. Creation of unauthorized trails is prohibited. Proposals for new trail development would be considered on a case-by-case basis. Trails may be designated closed to equestrian and mountain bike use due to impacts to ACEC habitat values, visual qualities, and other factors on a case-by-case basis and with appropriate public comment.
- Clearly define Red Hills ACEC boundaries by survey and a fence property line.

Alternative A

- No new ACECs would be designated.

Alternative B

- Designate FFO-managed land (3,236 acres) in the Pine Hill Preserve (ARAA) as the Pine Hill Preserve ACEC, as depicted on Map 5b. Manage lands in accordance with the Pine Hill Preserve Management Plan. The relevant and important values attributable to the Pine Hill Preserve that require special management include: Rescue series soils derived from gabbro and pyroxenite, five federally listed plant species (*Calystegia stebbinsii*, *Ceanothus roderickii*, *Fremontodendron decumbens*, *Galium californicum sierrae*, and *Packera layneae*), BLM sensitive species (*Chlorogalum grandiflorum*, *Helianthemum suffrutescens*, and *Wyethia reticulata*), and the northern gabbroic mixed chaparral plant community.
- Expand the Red Hills ACEC by 2,824 acres, as depicted on Map 5d. Manage lands in accordance with the Red Hills ACEC Management Plan. The relevant and important values attributable to the lands added to the Red Hills ACEC requiring special management include: Delpiedra soils derived from dunite and serpentine, two federally listed species (*Verbena californica* and *Packera layneae*), four BLM sensitive species (*Allium tuolumnense*, *Chlorogalum grandiflorum*, *Lomatium congdonii*, and *Senecio clevelandii heterophyllus*), and the serpentine buckbrush chaparral plant community. The federally listed threatened species *Brodiaea pallida* occurs close to the Red Hills ACEC, and habitat for this species would be added to the ACEC.
- Expand the Ione Manzanita ACEC (MoRAA) by 141 acres, as depicted on Map 5c. The relevant and important values attributable to the public lands added to these two ACECs that require special management include exposed older landforms of the Ione Formation and associated Valley Springs and Mehrten Formations, relict soils formed under a tropical weathering regime,

two federally listed plant species (*Arctostaphylos myrtifolia* and *Eriogonum apricum*), BLM sensitive species (*Horkelia parryi*, *Helianthemum suffrutescens* and *Eryngium pinnatisectum*), and the lone chaparral plant community adapted to this highly acidic, low nutrient, high aluminum substrate.

- Designate the Spivey Pond Management Area (54 acres, ARAA) as the Spivey Pond ACEC, as depicted on Map 5b. Manage this area in accordance with the Spivey Pond Management Plan. The relevant and important value attributable to the Spivey Pond Management Area that requires special management is the federally threatened California red-legged frog.
- Designate public lands in the Deadman's Flat area (796 acres, YRAA) as the Deadman's Flat ACEC, as depicted on Map 5a. The relevant and important values attributable to the Deadman's Flat area that require special management include: gabbro; massive diabase and serpentine substrates with Secca and Dubakella series soils developed above, supporting leather oak chaparral and a diverse chaparral resembling northern gabbroic mixed chaparral; one federally listed endangered plant species, *Calystegia stebbinsii*; and a dwarf *Fremontodendron* closely related to another federally listed endangered species, Pine Hill flannelbush. Priority will be given to the protection of federally listed endangered species *Calystegia stebbinsii* (Stebbins' morning glory) plants, habitat and potential habitat. Similar protection will be afforded to the dwarf flannelbush found at the ACEC, related to the federally listed endangered species Pine Hill flannelbush.
- Designate FFO-managed land (2,035 acres) in the Cosumnes River Preserve (CVAA) as the Cosumnes River Preserve ACEC, as depicted on Map 5c. Manage lands in accordance with the Cosumnes River Preserve Comprehensive Management Plan. The relevant and important values attributable to the Cosumnes River Preserve that require special management are the existence of and/or potential for restoration of: (1) valley oak (*Quercus lobata*) riparian forest; (2) seasonal wetlands; (3) vernal pools; (4) oak (*Quercus* spp.) savannah; and (5) agricultural lands such as irrigated pasture and crops that provide habitat for sandhill cranes (*Grus Canadensis*) and a buffer for existing Preserve properties.
- Designate public lands in the Brownsville area (198 acres, YRAA) as the Yuba Brownsville ACEC, as depicted on Map 5a. The relevant and important values attributable to the Brownsville area that require special management are the Mildred series soils developed on gabbro substrate that support an unusual, diverse chaparral (including less common elements like McNab cypress, chaparral pea, Brewer's oak, leather oak, silk tassel), resembling northern gabbroic mixed chaparral, and one federally listed threatened species, *Packera layneae*, and a dwarf *Fremontodendron* closely related to a federally listed endangered species, Pine Hill flannelbush. Give priority to the protection of federally listed threatened species *Packera layneae* (Layne's

butterweed) plants, habitat, and potential habitat. Similar protection to be afforded to the dwarf flannelbush found at the ACEC, related to the federally listed endangered species Pine Hill flannelbush.

- Designate FFO-managed land within the Bagby area (5,775 acres, MRAA) as the Bagby Serpentine ACEC, as depicted on Map 5d. The relevant and important values attributable to the Bagby area that require special management are Henneke soil series soils developed on a serpentine substrate supporting at least two BLM sensitive serpentine endemic species (*Lupinus spectabilis* and *Cryptantha mariposae*) and other serpentine endemic species, and the serpentine buckbrush chaparral plant community.
- Expand the Limestone Salamander ACEC (473 acres, MRAA), as depicted in Map 5d. The relevant and important values attributable to the lands added to this ACEC requiring special management are limestone salamanders and habitat for limestone salamander.

Alternative C

- No additional ACECs would be designated.

Alternative D

- Designate FFO-managed land (3,236 acres) in the Pine Hill Preserve (ARAA) as the Pine Hill Preserve ACEC, as depicted on Map 5b. Manage lands in accordance with the Pine Hill Preserve Management Plan. The relevant and important values attributable to the Pine Hill Preserve that require special management include: Rescue series soils derived from gabbro and pyroxenite, five federally listed plant species (*Calystegia stebbinsii*, *Ceanothus roderickii*, *Fremontodendron decumbens*, *Galium californicum sierrae*, and *Packera layneae*), BLM sensitive species (*Chlorogalum grandiflorum*, *Helianthemum suffrutescens*, and *Wyethia reticulata*), and the northern gabbroic mixed chaparral plant community. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attribute values, and (3) are located in the vicinity of the Pine Hill Preserve ACEC would become part of the Pine Hill Preserve ACEC without an RMP amendment.
- Expand the Red Hills ACEC by 2,824 acres, as depicted on Map 5d. Manage lands in accordance with the Red Hills ACEC Management Plan. The relevant and important values attributable to the lands added to the Red Hills ACEC requiring special management include: Delpiedra soils derived from dunite and serpentine, two federally listed species (*Verbena californica* and *Packera layneae*), four BLM sensitive species (*Allium tuolumnense*, *Chlorogalum grandiflorum*, *Lomatium congdonii*, and *Senecio clevelandii heterophyllus*), and the serpentine buckbrush chaparral plant community. The federally listed threatened species *Brodiaea pallida* occurs close to the Red

Hills ACEC, and habitat for this species would be added to the ACEC. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attribute values, and (3) are located in the vicinity of the Red Hills ACEC would become part of the Red Hills ACEC without an RMP amendment.

- Expand the Ione Manzanita ACEC (MoRAA) by 141 acres, as depicted on Map 5c. The relevant and important values attributable to the public lands added to these two ACECs that require special management include: exposed older landforms of the Ione Formation and associated Valley Springs and Mehrten Formations, relict soils formed under a tropical weathering regime, two federally listed plant species (*Arctostaphylos myrtifolia* and *Eriogonum apricum*), BLM sensitive species (*Horkelia parryi*, *Helianthemum suffrutescens* and *Eryngium pinnatisectum*), and the Ione chaparral plant community adapted to this highly acidic, low nutrient, high aluminum substrate. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attribute values, and (3) are located in the vicinity of the Ione Manzanita ACEC would become part of the Ione Manzanita ACEC without an RMP amendment.
- Designate the Spivey Pond Management Area (54 acres, ARAA) as the Spivey Pond ACEC, as depicted on Map 5b. Manage lands in accordance with the Spivey Pond Management Plan. The relevant and important value attributable to the Spivey Pond Management Area that requires special management is the federally threatened California red-legged frog.
- Designate FFO-managed lands in the Deadman's Flat area (796 acres, YRAA) as the Deadman's Flat ACEC, as depicted on Map 5a. The relevant and important values attributable to the Deadman's Flat area that require special management includes: gabbro; massive diabase and serpentine substrates with Secca and Dubakella soils series soils developed above, supporting leather oak chaparral and a diverse chaparral resembling northern gabbroic mixed chaparral; one federally listed endangered plant species *Calystegia stebbinsii*; and a dwarf *Fremontodendron* closely related to another federally listed endangered species, Pine Hill flannelbush. Priority will be given to the protection of federally listed endangered species *Calystegia stebbinsii* (Stebbins' morning glory) plants, habitat, and potential habitat. Similar protection will be afforded to the dwarf flannelbush found at the ACEC, related to the federally listed endangered species Pine Hill flannelbush.
- Designate FFO-managed lands in the Cosumnes River Preserve (2,035 acres, CVAA) as the Cosumnes River Preserve ACEC, as depicted on Map 5c. Manage lands in accordance with the Cosumnes River Preserve Comprehensive Management Plan. The relevant and important values attributable to the Cosumnes River Preserve that require special management are the existence of and/or potential for restoration of: (1) valley oak (*Quercus lobata*) riparian forest; (2) seasonal wetlands; (3) vernal pools;

(4) oak (*Quercus* spp.) savannah; and (5) agricultural lands such as irrigated pasture and crops that provide habitat for sandhill cranes (*Grus Canadensis*) and a buffer for existing Preserve properties. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attributes, and (3) are located in the vicinity of the Cosumnes River Preserve ACEC would become part of the Cosumnes River Preserve ACEC without an RMP amendment.

- Designate FFO-managed land within the Bagby area (5,775 acres, MRAA) as the Bagby Serpentine ACEC, as depicted on Map 5d. The relevant and important values attributable to the Bagby area that require special management are Henneke soil series soils developed on a serpentine substrate, which supports at least two BLM sensitive serpentine endemic species (*Lupinus spectabilis* and *Cryptantha mariposae*) and other serpentine endemic species, and the serpentine buckbrush chaparral plant community. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attribute values, and (3) are located in the vicinity of the Bagby serpentine ACEC would become part of the Bagby serpentine ACEC without an RMP amendment.
- Expand the Limestone Salamander ACEC (MRAA) by 473 acres, as depicted in Map 5d. The relevant and important values attributable to the lands added to this ACEC requiring special management include: limestone salamanders and habitat for limestone salamanders. Lands acquired that (1) possess one or more of these attributes, (2) are acquired to conserve one or more of these attribute values, and (3) are located in the vicinity of the Limestone Salamander ACEC would become part of the Limestone Salamander ACEC without an RMP amendment.

2.19.2.3 Designation of Research Natural Areas

A Research Natural Area (RNA) is a type of ACEC that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics:

- A typical representation of a common plant or animal association;
- An unusual plant or animal association;
- A threatened or endangered plant or animal species;
- Outstanding or unusual geologic, soil, or water features; or
- A typical representation of common geologic, soil, or water features.

Alternatives A and C

- No RNAs would be designated.

Alternatives B, and D

Designate the Dutch Flat/Indiana Hill area (320 acres) as a RNA, as depicted on Map 5a. The relevant and important values attributable to the Dutch Flat/Indiana Hill area that require special management include geologic exposures of Tertiary-age ancestral Yuba River deposits, where abundant plant macro-fossils are found in the deposits and where those macro-fossils have high scientific value. Acquired lands that (1) possess these attributes, (2) are acquired for purposes of conserving these values, and (3) are located in the vicinity of the Dutch Flat/Indiana Hill RNA will become part of the Dutch Flat/Indiana Hill RNA without an RMP amendment.

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2.20 Social and Economic Conditions

There are no proposed management actions specified for social and economic conditions in the Sierra Planning Area.

3.0 Introduction

As part of BLM's planning process, the FFO must evaluate available resources and other information to determine the planning area, provide the current management plan, and identify the planning area. The FFO must also identify the planning area and provide a summary of the results of this analysis. Chapter 2 summarizes the results of this analysis and identifies the FFO plan to 2025. This plan includes objectives for system characteristics and objectives for FFO resources. The plan is physical and biological processes on these lands that affect environmental health, the welfare of individual environmental resources, and soil, water, vegetative communities, and wildlife. The plan also identifies the resources and the current management plan. The plan also identifies the resources and the current management plan. The plan also identifies the resources and the current management plan.

3.0.1 Overview of Affected Environment

The FFO is directly responsible for the management of 20,000 acres of public land scattered throughout the Sierra Nevada. The land is within the boundary of the Sierra Nevada State Park, Yuba County in the north and Mariposa County in the south.

Some FFO managed lands occur along river corridors, or in the Central Valley. These lands are important to riparian systems. The scattered nature and small size of FFO managed public lands in the planning area make management and boundary determination a challenge for both the FFO and the public.

The importance of these public lands for recreation, habitat, and riparian systems is increasing with the growth of the Sierra Nevada and the Central Valley. The FFO managed FFO lands are important and contribute to riparian systems.

The FFO manages land with various types of the lower elevations (below 4,000 feet) of the west slope Sierra Nevada Range, including mixed conifer, oak woodland, chaparral, streamside, and riparian communities. About 7,000 acres of land within the planning area are managed for timber production.

Most of the public lands under the jurisdiction of the FFO are available for outdoor recreational use by the public. Activities such as hiking, picnicking, hunting, horseback riding, mountain biking, and camping are popular. Four campgrounds are located within the planning area: the South Fork River and River Bend Campgrounds.

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Chapter 3

Affected Environment

3.0 Introduction

As part of BLM's land-use planning process, the FFO must analyze available inventory data and other information to characterize the planning area, portray the current management situation, and identify management opportunities that respond to issues identified during scoping. This analysis sets the stage for formulating a range of reasonable alternatives. Chapter 3 summarizes the results of this analysis undertaken by FFO staff in 2005. This chapter describes: the present characteristics and condition of FFO-managed lands; the status of physical and biological processes on these lands that affect environmental health; the condition of individual environmental resources such as soil, water, vegetative communities, and wildlife; the relative value and scarcity of these resources; and the current trends in uses of the lands. This analysis of the existing management situation is, in part, the basis for the "no action" alternative and creates a framework from which to resolve the planning issues through the development of the three "action" alternatives.

3.0.1 Overview of Affected Environment

The FFO is directly responsible for the management of 231,386 acres of public land scattered throughout ten central California counties. Most of the acreage is within the historic Mother Lode region of the Sierra Nevada Range between Yuba County in the north and Mariposa County in the south.

Some FFO-managed lands, mostly along river corridors or in the Central Valley, have been acquired from private owners. The scattered nature and odd shapes of FFO-managed public lands in the planning area make management and boundary identification a challenge for both the FFO and the public.

The importance of these public lands for recreation, important habitat, and open space is increasing within the foothill counties as more people and businesses move to the region. The FFO-managed WUI is extensive and continuing to expand.

The FFO manages land with habitats typical of the lower elevations (below 4,000 feet) of the west slope Sierra Nevada Range, including annual grassland, oak woodland, chaparral, stream side, and mixed coniferous forest. About 27,000 acres of federal land within the planning area are managed for timber production.

Most of the public lands under the jurisdiction of the FFO are available for casual recreational use by the public. Activities such as hiking, picnicking, hunting, horseback riding, nature study, and camping are popular. Four campgrounds are located within the planning area, one on the South Yuba River and three along the lower Merced River.

Some areas, such as the Red Hills in the Tuolumne River Assessment Area, are noted for spectacular wildflower displays in the spring.

The FFO manages recreation on the South Yuba River, the North and South Forks of the American River, the Mokelumne River, the lower Merced River, and a portion of the Tuolumne River. Permits are issued to private concessionaires to conduct whitewater rafting trips down the rivers. The planning area has one wilderness study area.

The FFO is currently involved in the management of the Cosumnes River Preserve in the Central Valley Assessment Area as a participant in a unique public-private partnership that includes The Nature Conservancy, Ducks Unlimited, California Department of Fish and Game, and the County of Sacramento. The purpose of the Preserve is to provide waterfowl habitat on both existing and former agricultural lands. This is part of a coordinated federal-state effort to preserve wetlands and riparian forests. The Preserve is open to the public for wildlife-compatible recreational activities, including hiking, canoeing, picnicking, and nature watching. The FFO is also co-manager of the Pine Hill Preserve. This multi-agency partnership was formed to establish a preserve consisting of several distinct units, running from the Salmon Falls, on the South Fork American River, southeasterly to the Cameron Park Shopping Center area. This preserve protects rare plants endemic to rare gabbro soils.

Six separate ACECs are currently designated within the planning area. Each of these has special or unique qualities that requires management attention. The FFO also manages three federal wild and scenic rivers (the North Fork American River, the Tuolumne River, and the Merced River) and one state wild and scenic river (the South Yuba River). The Inimim Forest is located on San Juan Ridge in the Yuba River Assessment Area and is managed by the FFO in cooperation with local residents.

More detailed information about the FFO's existing management situation is discussed by program/resource in the rest of this chapter.

3.1 Air Quality

3.1.0 Resources

The planning area is primarily in the Mountain Counties Air Basin, as defined by the California Air Resources Board. This air basin covers the central and northern Sierra Nevada mountains, including the following counties: Plumas, Sierra, Nevada, Central Placer, Western El Dorado, Amador, Calaveras, Tuolumne, and Mariposa.

The Clean Air Act as amended in 1990 requires federal agencies to comply with all federal, state, and local air pollution requirements. The FFO is required to comply with the California State Implementation Plan (SIP) for achievement of National Ambient Air Quality Standards (NAAQS) for criteria pollutants. Prevention of Significant Deterioration (PSD) goals guide protection of air quality and visibility in wilderness areas and national parks, and local Air Pollution Control Districts' rules and regulations.

3.1.1 Current Condition

Because many people commute from this area to jobs in other areas, the largest source of air pollutants in the basin has become motor vehicles. Motor vehicles account for 53 percent of oxides of nitrogen (NO_x) emissions, 28 percent of reactive organic gasses (ROG) emissions, 36 percent of carbon monoxide (CO) emissions, and 1 percent of PM₁₀ (particulate matter with an aerodynamic diameter of less than 10 μm) emissions. Of the criteria pollutants, portions of the Mountain Counties Air Basin violate the State ozone and PM₁₀ standards (see Table 3-1 – Non-attainment Areas).

Table 3-1 Non-attainment Areas

County	Ozone	PM ₁₀
Plumas		Non-attainment
Sierra		Non-attainment
Nevada	Non-attainment	Non-attainment
Placer	Non-attainment	Non-attainment
El Dorado	Non-attainment	Non-attainment
Amador	Non-attainment	
Calaveras	Non-attainment	Non-attainment
Tuolumne	Non-attainment	
Mariposa	Non-attainment	Non-attainment

3.1.2 Trend/Forecast

FFO actions have an insignificant impact on ozone attainment as the major contributing activity is motor vehicle travel, particularly commuting to jobs outside of the basin, and FFO management has little to no impact on motor vehicle travel or commuting patterns.

If current trends in population growth continue in the planning area, commuting distances and patterns are likely to contribute increasingly to non-attainment of ozone standards. OHV recreation use contributes a minor amount of ozone to the air basin; however, OHV use only occurs in a few locations and is not a major recreational use.

FFO fire and fuels management has the potential to impact PM10 and other criteria pollutants. FFO prepares smoke management plans for every prescribed burn in coordination with the local air quality management district to mitigate these impacts and ensure compliance with standards. Wildland fires often result in a negative short-term effect on air quality. Wildland fire suppression activities and fuels reduction projects have a beneficial effect on air quality by reducing impacts from wildland fire. The U.S. Environmental Protection Agency (EPA) has published an Interim Policy on Fire, which integrates two public policy goals. The first is to allow fire to function as nearly as possible in its natural role in maintaining healthy wildland ecosystems; the second is to protect public health and welfare by mitigating the impacts of air pollutant emissions on air quality and visibility. EPA'S Natural Events Policy addresses events that lead to violations of the NAAQS.

Fugitive dust, particularly during the dry portions of the year and occurring with OHV use, construction activities, road and trail maintenance, and general vehicular travel on unpaved roads and trails, contributes to PM10 within the planning area. The FFO makes an effort to minimize fugitive dust from construction activities and road maintenance by including dust-abatement stipulations in the permits that authorize these activities.

3.2 Soil Resources

3.2.1 Regional Geological Context

The planning area lands are within the Western Metamorphic Belt of the Sierra Nevada geomorphic province. This is a belt of steeply dipping meta-sedimentary and meta-volcanic rocks of Paleozoic (570 to 225 million years BP) and Mesozoic (225 to 65 million years BP) age that lies between the granitic Sierra Nevada batholith to the east and overlapping sediments of the Great Valley province of central California to the west. The Sierra Nevada metamorphic belt consists of northward-trending tectonic blocks (fault-bounded terranes) that accreted to the continent by subducting activity that culminated in the Late Jurassic (190 to 135 million years BP). During the Nevadan Orogeny, the sedimentary and volcanic rocks became highly deformed and weakly metamorphosed, and were intruded by plutons associated with the emplacement of the Sierra Nevada batholith.

During the first half of the Tertiary (65 to 2 million years ago) period, river systems developed in the ancestral Sierra Nevada Range that formed during the Nevadan Orogeny. These rivers probably originated in the highlands of this mountain range in western Nevada and flowed westward into a marine basin located in present day California's Central Valley. During Paleocene to Late Eocene times (ca. 65 to 40 million years BP), as the mountain mass underwent reduction due to extensive weathering and erosion, great quantities of fluvial sediments accumulated in the stream channels. These channel-fill deposits, commonly called "Tertiary gravels," accumulated in river meanders within extensive floodplains. The Tertiary gravels were overlain by volcanic flows, including rhyolitic tuffs and andesitic breccias (with interbedded sediments) deposited throughout the region from the Late Eocene to the Pliocene (ca. 40 to 5 million years BP).

Movements and faulting in the earth's crust from Middle Miocene (ca. 15 million years) to Early Pleistocene (2 million years) caused a rapid uplift of the Sierra Nevada province as it tilted westward, breaking along a fault system at its eastern limit. Thousands of feet of fault displacement caused stream erosion to accelerate dramatically, cutting the deeply incised canyons that are present today.

3.2.2 Resources

Soil is a basic resource on which vegetation and, by extension, wildlife depend. The hydrology of watersheds is also highly dependent on soil conditions. If soils are damaged, other resources may be adversely affected and possibly destroyed. This particular relationship between natural resources is important because most of the planning area soils are classified as moderately to highly erodible. Variables in site slope and soil texture interact to determine erodibility (see below). Sandy and silt loams on steep sites generally constitute the highest erosion hazard. Soil situations of this type are widely scattered throughout the planning area.

The soils of the planning area occur primarily on hilly terrain that is partially dissected by steep river canyons. Roughly 80 percent of the area has slopes between 15 and 75 percent. Thirty percent of the area is above 50 percent slope. Rock outcrops covering 10 to 25 percent of the land surface are common. Some of the soils are very stony.

The soils fall into two broad categories: soils of the foothills and soils of the mountainous uplands. These categories are, in turn, further subdivided into 18 associations (details can be found in the county-specific soils surveys published by the Natural Resource Conservation Service). The soils of the foothills are found at lower elevations and generally support annual grasses and forbs, with open stands of digger pine, oak, and shrub. Some foothill areas have dense brush. The soils of the mountainous uplands support forests of conifers and associated hardwoods, dense brush, and small areas of grasses and forbs.

Most of the area's soils developed over metasedimentary rock, coarse-grained basic and acidic igneous rocks, and volcanic tuff. Depth to bedrock ranges from very shallow (less than 10 inches) to very deep (greater than 60 inches). Surface textures are predominately loamy, while subsoil textures are loamy or clayey. Soils reaction ranges from neutral to very strongly acid.

Serpentine soils are found in some parts of the planning area. These are erosive soils that have formed from highly sheared and fractured serpentine rock containing abundant chrysotile asbestos. Many of these steep slopes lack soil or vegetative cover. The asbestos component of these soils can become airborne when the soil is dry and a surface disturbing event occurs, such as windy conditions, vehicle travel, or construction activity. Exposure to asbestos from inhaling dust originating from serpentine soils is a concern at both federal and state levels.

The water erosion hazard for most of the area is moderate to very high. Soils in the 5 to 15 percent slope range have a slight or moderate water erosion hazard rating. Those in the 15 to 50 percent range have a moderate to high rating, while those in the 50 to 75 percent have a high to very high rating. Within each category of slope range, variations in erosion potential are due to factors such as soil texture, rock fragment content, organic matter content, and clay mineralogy. Among the surface textures represented in the area, clay loams are generally the least erodible, followed by loams, sandy loams, and silt loams. The more rock fragments or organic matter in the soil, the less erodible it is. Hydrophobic layers near the surface, which sometimes develop from exposure to wildfire, can make soils, particularly granitic soils, very erodible. On any of the soils with a moderate or greater rating, accelerated surface runoff from winter precipitation is a concern, particularly where there has been off-road use of vehicles, removal or damage of riparian vegetation, and where there are fire breaks, dirt roads, and trails.

In an effort to define the erosion status of soils within the area, information was gathered at 313 sample sites on public land. Forty-nine percent of the sites were rated as "stable." Forty-seven percent evinced "slight erosion," while the remaining 4 percent displayed "moderate erosion." Most sites above a 30 percent slope were classified as having "slight erosion." Erosion was not a critical problem at any of the sample sites, though problem

areas are known to exist elsewhere on FFO-managed land. Despite the high potential for erosion of many of these soils, this study indicates soils are generally stable or experiencing slight erosion.

Although sheet erosion occurs on soils in the planning area, erosion from channeled surface runoff is the greatest source of soil erosion and resulting sediment load in rivers and streams. Many factors affect the degree of soil erodibility and the type of erosion. Rainfall intensity, slope, plant cover, and the physical and chemical properties of the soil affect the extent and type of erosion that occurs. In part, high erosion rates in the serpentine watersheds are a natural consequence of the erodible soils formed from highly sheared and fractured serpentine rock containing abundant chrysotile asbestos. Many of these soils are on steep slopes and are sparsely covered with vegetation. On these barren slopes, runoff from winter storms can cause extensive rill and gully erosion, which contributes to sediment yields in stream channels.

3.2.3 Current Condition

Soils found on FFO-managed lands are currently managed with the goal of maintaining productivity and minimizing erosion. Soil erosion is greatest in areas that have had human-related disturbances, such as road construction, domestic livestock grazing, OHV use, mineral extraction, and mechanized fire suppression and prevention activities. Where human-related disturbance is slight, soil goals have been consistently achieved.

Moderately high to extremely high rates of soil erosion appear to be concentrated near motorized vehicle routes, hillclimbs, fire breaks, and inner gorge areas adjacent to stream channels. Road and trail maintenance, physical closure of areas of illegal vehicular use, and rehabilitation of fire suppression activities are actions routinely taken by the FFO to minimize soil erosion. Efforts also are made through regulation and permitting processes at the state and local governmental levels to minimize soil erosion from human-related disturbances. Eroded soil that reaches streams is transported downstream during high flows and affects downstream land and water users. Turbidity has a harmful effect on fisheries and wildlife, and interferes with the function of agricultural and municipal water systems.

Causes of gully formation, which have been large contributors to sediment yield, include past land-use practices such as livestock grazing, uncontrolled OHV use, stream diversions, and poorly designed or maintained roads. Erosion on both barren and vegetated slopes affects soil texture, fertility, and rooting depth, and can reduce infiltration, water holding capacity, and soil productivity. However, because bedrock controls the depth of channels in most drainages in this area, gully erosion is relatively infrequent.

3.2.4 Trend/Forecast

Continued development on private land within the planning area is anticipated and will include activities that disturb the soil surface by direct displacement, compaction, and removal of protective vegetation and biological soil crusts. This will result in an

increased susceptibility to wind and water erosion. Despite regulations and enforcement, some indiscriminate vehicle use off of existing roads and trails will continue. With the growth of communities, the WUI will continue to expand, leading to an increase in activities that threaten soil integrity.

3.3 Water Resources

3.3.1 Surface Water

Unmodified surface water (rivers, creeks, streams, natural lakes, etc.) satisfied the needs of Californians until the Gold Rush of 1848, which spawned a huge population increase and an industrial and agricultural boom. Since that time, California's population has been increasing steadily and exponentially. As a result, water needs have exceeded the surface water supply. California currently has the highest level of agricultural and municipal water use in the United States. Unmodified surface water sources no longer provide adequate quantities of water to support agricultural and urban areas. To resolve this problem, almost all of California's usable surface water is now stored in almost 200 reservoirs and transported throughout the State by a network of aqueducts.

Approximately 15 reservoirs are located within the planning area, although the FFO manages few parcels near the reservoirs. Approximately 30 reservoirs are located above the FFO-managed lands, and these reservoirs feed the rivers and streams that the FFO manages. The river and stream segments that the FFO manages are greatly affected by the management (flow regulation, water quality control, etc.) of the reservoirs above. Activities on private land above the FFO-managed lands also affect the surface water managed by the FFO. Such activities include water diversions, viticulture, agriculture, logging, etc. Historic mining activities also affect water quality. Mercury has been found in a number of river and stream segments managed by the FFO. Other chemicals found in the waters managed by the FFO include zinc, copper, arsenic, Diazinon (an insecticide), and pesticide residues. The State Water Resources Board defines beneficial uses that are critical to water quality management, including the potential and existing beneficial uses for each river segment. These uses are municipal and domestic supply; agricultural supply; industrial supply; water recreation; freshwater habitat for vegetation fish, or wildlife (including invertebrates); fish and wildlife migration; and fish spawning. Although beneficial uses are not being met on all reaches of rivers, none of these deficiencies result from FFO management.

The FFO manages approximately 250 miles of perennial streams and rivers. Of these, 90.5 miles have been assessed to determine if their associated riparian areas are in Proper Functioning Condition. According to Riparian Area Management: Process for Assessing Proper Functioning Condition (BLM Manual TR 1737-9 1993): "Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize stream banks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation." Of the 90.5 miles that have been assessed, 85 miles have been classified as being in proper functioning condition. Functional-At Risk systems are those riparian-wetland areas that

are functional but susceptible to degradation. Of the 90.5 miles assessed, 3.5 miles have been classified as Functional–At Risk. The remaining 2 miles assessed have been classified as Nonfunctional, meaning they are not providing adequate vegetation, landform, or large woody debris to meet the objectives described above. These areas were determined to be nonfunctional due to grazing, water diversion, and/or reservoir influence. Water diversions and reservoir influence are beyond the control of the FFO. Three sections of stream were determined to be nonfunctional due to grazing:

1. **Gaiser Allotment:** A section of Poor Man’s Gulch was determined to be nonfunctional. A portion of this stretch was fenced off from grazing and is recovering.
2. **Rapini Allotment:** A section of a stream was determined to be nonfunctional. This is a 40-acre allotment surrounded by private land.
3. **Cathey’s Valley:** A section of a stream was determined to be nonfunctional due to unauthorized grazing.

3.3.2 Groundwater

Groundwater is contained in five principal aquifers in California and Nevada. The majority of the lands managed by the FFO are located in the Sierra Nevada foothills, which does not have a principal aquifer and, therefore, does not provide sufficient yields of groundwater to be considered a source of water. The FFO manages some lands in the Central Valley, which lies above the Central Valley Aquifer System. Much of the groundwater use in the Central Valley is for irrigated agriculture.

Over the past 70 years, water purveyors in the Central Valley have relied on groundwater for much of their agricultural and urban water needs. This reliance on groundwater has caused groundwater levels to decline.

In Sacramento County, where the FFO manages some 1,803 acres of federally owned land, groundwater levels have declined by as much as 90 feet in some areas in the past 70 years. A Sacramento County Water Resources Division Map depicts two cones of depression in south Sacramento County, centered on the Elk Grove and Galt communities. These cones sit on the north and south sides of the Cosumnes River corridor.

The FFO pumps groundwater from two domestic wells to support one administrative site and one combination administrative and public use site. All agricultural irrigation as well as wetland habitat irrigation are supported by surface water pumping from the Sacramento-San Joaquin Delta. All the water use is in support of the FFO’s Cosumnes River Preserve Project.

3.4 Vegetative Communities

Vegetative communities in the planning area are generally characterized by conifer forest in the higher elevations, chaparral and live oak woodlands in the mid to lower elevations, eventually transitioning into blue oak woodland/savannah and grassland in the lowest elevations. Riparian areas traverse the entire length of the planning area along river corridors. The area's most uncommon vegetative communities occur in association with rare soil types: gabbro-based soil types, serpentine based soil types, and soils associated with the Ione Formation. Rare plants are often found in association with these soil types, including some plant species that are endemic to these soils. More information about these unique soil types and the rare plants associated with them can be found in section 3.19, "Special Designations."

Noxious weeds are present on many FFO-managed parcels within the planning area. According to "Pulling Together: National Strategy for Invasive Plant Management," noxious weeds are already present on over 100 million acres throughout the United States (on both public and private lands), and this number increases by approximately 3 million acres each year. Noxious weeds threaten agricultural production, biodiversity, and native habitats. The habitat of over 60 percent of special status species is threatened by weeds.

Noxious weed control is estimated to cost between \$3.6 and \$5.4 billion annually across the United States. Within the planning area, FFO staff document all noxious weed populations found when conducting field activities. The FFO prioritizes areas most in need of weed treatments based on several factors, including whether the weeds are threatening a special status plant or animal or a unique area, if the infestation occurs in a recreation public use area, the size of the infestation (smaller populations are more time- and cost-efficient to target), if it is a new infestation (new infestations are easier to eradicate), if the budget allows for weed control, and the most appropriate treatment type for the specific infestation. Infestations are currently treated in the Red Hills ACEC, Merced River Campgrounds, Cosumnes River Preserve, Pine Hill Preserve, Dave Moore Nature Area, Greenwood Creek, and the Mokelumne River along Electra Road. Also surveyed and treated (if necessary) are new infestations as a result of firefighting. In addition, a weed management plan has been developed for the Cosumnes River Preserve and a draft strategy has been developed for the Pine Hill Preserve. The FFO is involved with the Amador County Weed Group, El Dorado County Weed Group, Tuolumne Calaveras Central Sierra Partners Against Weeds, Nevada/Placer Weed Management Area, Southern and Central Sierra Noxious Weed Alliance, and the California Invasive Plant Council. Some of the most troublesome weeds include yellow star thistle, scotchbroom, goat grass, and rush skeleton weed. These weeds have received the most management attention by the FFO and its partners.

3.4.1 Conifer Forest

The conifer forest is an assemblage of conifer and hardwood species that generally forms a multilayered forest and occurs in the planning area at elevations from 2,500 feet to approximately 4,000 feet. Ponderosa pine, incense cedar, Douglas fir, sugar pine, white fir, and California black oak are the dominant species. This vegetative community occurs

on approximately 54,591 acres throughout the planning area. A mature forest will have trees 100 to 200 feet tall and 30 to 40 inches in diameter (at breast height). These stands will have a fuel loading of between 40 to 80 tons per acre. Mountain misery, deerbrush, white leaf and mewukka manzanitas, western mountain mahogany, and toyon are among the more common shrub species. Grasses and forbs occur on the forest floor where light can penetrate. In all, over 100 species of grasses, forbs, and shrubs contribute to the flora of the conifer habitat. The conifer forest supports an estimated 355 species of animals.

3.4.2 Blue Oak Savannah/Woodland

Blue oak woodlands mixed with gray pine tend to ring the Central Valley, ranging from elevations of 500 feet to 3,000 feet. This vegetation type covers about 13,266 acres in the planning area. Blue oak and gray pines typically comprise the overstory. The oaks rarely exceed 50 feet in height, and the pine rarely reach more than 100 feet high. Interior live oak and California buckeye are common, and the entire community is often accompanied by large areas of annual grassland. Wildlife uses this vegetation type for breeding, feeding, and cover. There are 29 species of amphibians and reptiles, 79 species of birds, and 22 species of mammals known to use this vegetation type for breeding purposes.

3.4.3 Live Oak Woodland

Live oak woodlands are scattered throughout California and are mostly found west of the Sierra Nevada at elevations from 300 feet to 9,000 feet. This vegetation type covers approximately 32,855 acres in the planning area. Live oak dominates the overstory, with some scattered knobcone pine and foothill pine. The understory can be made up of woody shrubs, annual grassland, or a combination of both. Wildlife uses this vegetation type for breeding, feeding, and cover. Scrub jays, Steller's jays, woodpeckers, and gray squirrels feed on the acorns produced by the oaks.

3.4.4 Chaparral

In the lower elevations, chaparral dominates. This is the most abundant vegetative community in the area that the FFO manages, comprising of about 78,344 acres. There are a large number of plants in this vegetation type. Up to 240 species of woody plants have been identified in mixed chaparral. This vegetation type tends to be dominated by shrubs with heavy, thick, cutinized evergreen leaves, such as scrub oak, manzanita, poison oak, and chamise. This vegetation is fire adapted. Dominant plants tend to sprout back from root crowns. Many of the large and destructive wildfires in California occur in this vegetation type.

Chaparral provides habitat for a wide variety of wildlife. Deer make extensive use of chaparral, as do a large number of rodents. A diversity of birds makes use of the seeds, fruits, insects, and protection from predators offered by the chaparral. A large number of the special status plants occur in this habitat type as well.

3.4.5 Annual Grassland

Annual grassland is mixed somewhat with the other vegetation types, especially oak and chaparral communities. Grasslands are often found on south and west aspects. This vegetative community covers approximately 10,195 acres of FFO-managed lands. These annual grasses germinate with fall rains and grow slowly during the cool season until temperatures increase and cause rapid growth. Introduced species dominate the flora. Wild oats, soft chess, ripgut brome, and foxtail are the most common grasses, and filaree and turkey mullein are the common forbs. Productive sites produce up to 2 tons of herbage per acre.

Grasslands provide wildlife foraging areas, but many species require other habitat features such as cliffs, caves, ponds, or areas with woody vegetation for breeding, resting or escape cover. Western fence lizards, garter snakes, and rattlesnakes are common. Mammals found in grasslands include the black-tailed jackrabbit, California ground squirrel, western harvest mouse, badger, and coyote. Birds include burrowing owls, short-eared owl, horned lark, western meadowlark, turkey vulture, northern harrier, American kestrel, white-tailed kite, and prairie falcon.

3.4.6 Riparian Areas

Riparian areas are common throughout the planning area, along rivers and streams. Riparian areas sometimes have an overstory of cottonwood, California sycamore, or valley oak 50 to 80 feet high. Whether or not this taller canopy is present, a lower canopy is often present with white alder, red willow, and Oregon ash as the dominant species. The understory has a shrub layer with willows, buttonwillow, wild grape, Himalayan blackberry, and poison oak. A final herbaceous layer of sedges, rushes, and grasses is usually present. The FFO manages approximately 250 miles of perennial rivers and streams and associated riparian habitat.

Riparian areas are very important to wildlife for food, escape cover, migration routes, nesting cover, and dispersal corridors. Various studies have found that 50 amphibians and reptiles, 147 bird species, and 55 species of mammals use the riparian areas. Some are year-round residents, while others use riparian habitat for specialized purposes during their life cycles.

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3.5 Fish and Wildlife

The FFO has the primary responsibility for the management of habitats within the planning area. The CDFG has the responsibility of managing species in cooperation with the FFO. Owing to administrative overlapping responsibilities, the FFO and CDFG coordinate many of their activities. The FFO's objective has been to maintain, protect, and enhance the density and diversity of native fish and wildlife resources through sound habitat management practices and actions.

The diverse fish and wildlife resources in the planning area are an essential part of healthy ecological systems while providing significant consumptive and non-consumptive recreational values. Consumptive recreational uses associated with the fish and wildlife resource include fishing and hunting (big game, small game, and upland game birds). Fishing and hunting regulations are established and enforced by CDFG. Non-consumptive uses directly associated with the fish and wildlife resource include wildlife viewing, bird watching, and catch and release fishing.

Wildlife species have unique interrelationships, which link assemblages of species on a landscape to one another and to specific habitats contained within the landscape. Often, conservation measures for one particular wildlife species or habitat are also linked to conservation of an entire assemblage of wildlife species and, in some cases, landscapes.

Wildlife species found on FFO-managed land within the planning area are representative of Sierra Nevada foothills and Sacramento Valley flora and fauna. Specific habitats of importance for the wildlife and fish species in the planning area reflect the diversity of the area. Some species are habitat generalists, occurring in a variety of habitat types, while other species are habitat specialists and occur in single habitat types.

The tremendous geologic, topographic, and climatic diversity that occurs in California creates a correspondingly high level of plant and animal diversity. However, habitats for plants and wildlife have been lost, fragmented, or altered, thus threatening this diversity. Sources include habitat conversion (to urban areas, agricultural lands, and vineyards), urban infrastructure such as roads and utility corridors, logging (creation of roads, landing areas, and open areas after trees have been removed), land ownership patterns contributing to fragmentation, frequent or infrequent fire occurrence, streambed alterations, an influx of invasive plants, grazing, and degradation due to recreation (which includes OHV use, target shooting, hiking, bicycling, equestrian use, and other activities), and historical mining.

Table 3-2 Habitat Types and Associated Species for FFO-Managed Land

Habitat Type	Associated Species and Activities
Mixed conifer	<ul style="list-style-type: none"> • Game species, mountain lion, important raptor nesting, and roosting. • Special Status species include California spotted owl, northern goshawk, great gray owl, pacific fisher.
Blue Oak Woodland	<ul style="list-style-type: none"> • Game species, mountain lion, large variety of reptiles, important raptor nesting, and roosting. • Special status species include western spadefoot toad.
Mixed Chaparral	<ul style="list-style-type: none"> • Game species, mountain lion, large variety of reptiles. • Special status species include California horned lizard.
Annual Grassland	<ul style="list-style-type: none"> • Game species, mountain lion. • Special status species include western burrowing owl, Swainson's hawk.
Riparian/Wetlands	<ul style="list-style-type: none"> • Supports highest density and diversity of wildlife species, high forage production, wildlife movement corridor. • Special status species include limestone salamander, southwestern pond turtle, foothill yellow-legged frog.
Lacustrine (Reservoirs)	<ul style="list-style-type: none"> • Supports raptor nesting and a high density and diversity of fish species. • Special status species includes bald eagle.

3.5.1 Fisheries

The FFO manages lands on seven major rivers (Yuba, North Fork American, South Fork American, Cosumnes, Mokelumne, Tuolumne, and Merced) and hundreds of streams and tributaries. Areas with limited or constrained riparian areas typically exhibit warmer temperatures, less stream stability, and increased numbers of non-native fish.

Representative cold and warm water fish species occupying or having the potential to occupy habitats in the planning area are identified in Table 3-3.

The Sierra Nevada roothill rivers and streams that occur within the planning area tend to be transitional areas, where cold water fisheries meet warm water fisheries. FFO-managed land is typically located on river reaches above existing dams/reservoirs in the 1,000 to 3,500 foot elevation. The water temperature regimes of these reaches are almost entirely dependent on dam releases, which have a direct impact on the type of fisheries present. Reservoirs, as well as the reaches just above the reservoirs, can typically be classified as warm water fisheries. At some point above the reservoirs, temperature regimes become more influenced by snowmelt and other natural factors and less influenced by the dam. This is where cold water fisheries would likely be located. The reaches managed by the FFO tend to be transitional areas that cannot be clearly identified as warm or cold water fisheries, and the exact point where the change takes place is not

always definable. The Cosumnes River is not dammed, but it has the same transitional characters due to natural physical barriers and extremely low flows in the lower reaches of this river.

During fall and winter, all of the rivers support salmon and steelhead runs, with fish spawning in gravels below physical barriers or at hatcheries. The FFO controls very little land in these reaches with the exception of the Cosumnes and Yuba Rivers.

The CDFG stocks numerous reservoirs throughout the area. In addition, there may be ponds near the FFO-managed lands that are stocked by private landowners. The stocked fish have the potential to swim upstream into areas managed by the FFO, which may introduce disease or large populations of undesirable fish species.

Table 3-3 Fish Species Found in FFO-managed Water Resources

Species	Origin	Status
Brown trout, <i>Salmo trutta</i>	non-native	Game
Rainbow trout, <i>Salmo gairdneri</i>	native	Game
Central Valley spring-run Chinook salmon, <i>Oncorhynchus tshawytscha</i>	native	Game, Federally Threatened
Central Valley fall-run Chinook salmon, <i>Oncorhynchus tshawytscha</i>	native	Game, Federal Candidate
Central Valley steelhead, <i>Oncorhynchus mykiss</i>	native	Game, Federally Threatened
California roach, <i>Lavinia symmetricus</i> (<i>Hesperoleucus symmetricus</i>)	native	Nongame
Red Hills roach, <i>Lavinia symmetricus</i> (<i>Hesperoleucus symmetricus</i>)	native	Nongame, BLM Sensitive
Common carp, <i>Cyprinus carpio</i>	non-native	Nongame
Hitch, <i>Lavinia exilicauda</i>	native	Nongame
Hardhead, <i>Mylopharodon conocephalus</i>	native	Nongame
Sacramento pike minnow (squawfish), <i>Ptychocheilus grandis</i>	native	Nongame
Sacramento sucker, <i>Catostomus occidentalis</i>	native	Nongame
Largemouth bass, <i>Micropterus salmoides</i>	non-native	Game
Smallmouth bass, <i>Micropterus dolomieu</i>	non-native	Game
Redeye bass, <i>Micropterus coosae</i>	non-native	Game

Table 3-3 Fish Species Found in FFO-managed Water Resources

Species	Origin	Status
Riffle sculpin, <i>Cottus gulosus</i>	native	Nongame
Mosquitofish, <i>Gambusia affinis</i>	non-native	Nongame
Bluegill, <i>Lepomis macrochirus</i>	non-native	Game
Green sunfish, <i>Lepomis cyanellus</i>	non-native	Game

3.5.2 Wildlife

The FFO contains a variety of habitats that possess the biological and physical attributes important in the life cycles of many wildlife species. More than 300 wildlife species occur or have the potential to occur in the planning area (approximately 250 bird species, 10 amphibians, 50 mammals, and 20 reptiles). Only key species and their habitats are accounted for in management actions and are given consideration in the RMP. These species include those of economic interest (such as upland game birds and game mammals), special status species, and other species or groups that serve as indicators of ecosystem health or indicate the effects of management activities.

Game populations are managed based on habitat condition and the quality of the animals being produced. Population levels are linked to a variety of factors, including vegetation quality and quantity, wildlife corridor quality, adequate space, shelter, cover, water distribution, and regional weather patterns and trends such as prolonged drought.

Mule Deer

The FFO manages lands within 12 CDFG Deer Management Units: Camp Beale Herd, Placerville Herd, Mariposa Herd, Salt Springs Herd, Railroad Flat Herd, Grizzly Flat Herd, Nevada City Herd, Blue Canyon Herd, Yosemite Herd, Tuolumne Herd, Stanislaus Herd, and the Sacramento Valley Herd. The Sierra Nevada foothills provide winter range habitat for many of the deer herds. As the foothill region becomes more populated by humans, often leading to habitat conversion and degradation, the FFO-managed lands become exceedingly important to the survival of the deer herds. There are two subspecies of mule deer that occur on lands managed by the FFO, the California mule deer (*Odocoileus hemionus californicus*) and the Columbian black-tailed deer (*Odocoileus hemionus columbianus*). The two subspecies interbreed, leading to large numbers of deer that exhibit characteristics of both subspecies.

Presently, no chronic wasting disease (CWD) or other debilitating illnesses are known to affect herds in California. As of March 2004, more than 1,307 tissue specimens throughout California have been collected and tested for CWD by the CDFG. All specimens have tested negative for CWD.

Habitat Requirements

Within the planning area are both migratory and non-migratory, resident herds. Resident herds occupy blue oak, chaparral, and annual grassland habitats, which provide year-round forage and cover. Oak woodlands contain a variety of oak species, including blue and valley oak, and several types of live oak. Understory vegetation in the oak woodlands is comprised mainly of annual grasslands and forbs. Resident deer also tend to occupy urban areas where homes are on fairly large parcels. In these areas, deer have enough open space for cover and forage, but they also forage in landscaped areas where homeowners water the vegetation, keeping it green year-round.

Migratory deer herds use FFO-managed lands within the planning area for wintering. Intermediate and summer ranges tend to be above the 4,500 foot elevation level, out of the planning area. Vegetation in the winter ranges is comprised of mixed conifer with mountain misery making up most of the understory, montane chaparral with manzanita and a variety of ceanothus species, oak woodlands with patches of brushy areas, grassy areas, and some conifers, and annual grasslands. Deer begin migrating to the winter ranges when the first significant snow occurs (typically during December). The migration may take up to three months. They tend to remain in the winter range until spring, typically beginning the migration back to the summer range in March.

Riparian areas along streams, with willows and wild rose, are particularly important components of deer habitat in chaparral and oak woodlands. Riparian areas, which provide water, succulent forage, thermal and fawning cover, and migratory routes, are important to both resident and migratory deer.

Population Trend

FFO-managed lands within the planning area fall within four Deer Management Units: Zones D-3, D-4, D-5, and D-6. Deer populations within these zones are stable to declining. CDFG biologists believe that long-term declines in habitat condition, starting in the 1930s and continuing today, are most responsible for the decline. Lack of appropriate habitat disturbance, especially from fire, has decreased habitat value for deer and other wildlife in much of the state's forested areas. Deer and numerous other wildlife thrive on early successional (seral) vegetation that grows back in the first few years after fire. Without periodic fire, the habitat becomes old or "decadent" and is unable to support wildlife populations as it has in the past. Indirect consequences, such as increasing competition with livestock and overuse of ranges by deer themselves, are typical.

Habitat Conditions

Vegetation is highly varied in Zones D-3 through D-6. The FFO-managed lands are low elevation (below 4,000 feet) and provide oak woodland, chaparral, hardwood, and hardwood conifer habitats. Above 4,000 feet, deer habitat is comprised of aspen, dense conifer, and alpine habitats. Generally speaking, deer populations in these areas respond favorably to vegetation disturbances that enhance brush species (wildfire and timber

harvesting). The deer population in Zone D-3 is considered stable to declining, and the populations in Zones D-4 and D-5 are considered stable to slightly declining. The population declines are due to fire suppression practices that result in decadent vegetation and weather events such as drought that limit forage production. The deer population in Zone D-6, however, is considered to be stable to increasing. Fawn survival in this area has been good for the past several years.

Feral Pig

Pigs (*Sus scrofa*) are not native to North America and did not exist in California before the early 1700s. Spanish and Russian explorers and settlers introduced domestic pigs to California and allowed them to forage freely. Wild pigs now exist in 56 of the state's 58 counties, and their numbers continue to increase.

Prior to the mid-1950s, wild pigs were unclassified under state law. During this period, wild pigs could be killed with no restrictions. In 1957, the state legislature designated the wild pig as a game mammal. Although CDFG has not established specific herd units or a designated hunting season for wild pigs in California, hunters are required to purchase wild pig license tags to hunt wild pigs.

Within the planning area, wild pigs can be found in many habitats as long as water and some cover are present. Habitats within the planning area where wild pigs can be located include oak woodlands, chaparral, riparian, and open grasslands. They are most abundant in oak woodlands interspersed with grasslands. The largest concentration of wild pigs within this field office occurs in the MRAA.

Cougar (Mountain Lion)

The cougar (*Felis concolor*) is a North American native and North America's largest cat. The status of the mountain lion in California evolved from that of "bountied predator" between 1907 and 1963, meaning monetary incentives were offered for every mountain lion killed, to "game mammal" in 1969, to "special protected mammal" in 1990. Today's population estimate ranges between 4,000-6,000 animals.

Within the planning area, mountain lions can be found in many different types of habitats, including oak woodland, pine, fir, annual and perennial grasslands, chaparral, and riparian. The mountain lion is the largest carnivore occurring in the FFO-managed area and requires large core habitat areas, abundant prey, and habitat connectivity between sub-populations. They generally are most abundant in areas with plentiful deer. An adult male's home range often spans over 100 square miles. Females generally use smaller areas, about 20 to 60 square miles. Urbanization is threatening the mountain lion populations in California. Populations are becoming fragmented as the loss of large blocks of open space become disconnected, and extensive vehicle access increases the potential for disturbance, poaching, and road kill.

Wild Turkey

Wild Turkey (*Meleagris gallopavo*) populations have grown to become an established part of much of California's mixed pine-oak woodlands resulting from numerous introductions, the first of which was reported in 1877. Current population estimates for wild turkeys in California place the population at 242,000. Turkeys are an important game bird, valued by both hunters and other wildlife enthusiasts, and turkey hunting is a growing sport in California.

Suitable wild turkey habitat contains a combination of two key components: trees and open grasslands. Trees provide food, escape cover, and roosting sites. Open grasslands provide food and open areas where turkeys can effectively forage while avoiding predation. Lateral cover, associated with nest selection, is commonly provided by shrubs, herbaceous vegetation, and woody debris. Water is also a fairly important habitat component.

Upland Game Birds

FFO-managed lands provide important habitats for upland game birds. The California or valley quail (*Callipepla californica*) is associated with a combination of brushy vegetation, woodlands, canyons, foothills, and more open grassy habitat with some water supply. The ring-necked pheasant (*Phasianus colchicus*) is associated with grasslands, farmlands, and marshes. The mourning dove (*Zenaida macroura*) occupies a variety of habitats, including farmlands, urban areas, woodlands, and grasslands.

Small Game, Non-Game, and Fur-Bearing Mammals

The FFO manages important habitats for small game, non-game, and fur-bearing mammals throughout the planning area. Small game includes desert cottontail (*Sylvilagus auduboni*), brush rabbit (*Sylvilagus bachmani*), blacktailed jackrabbit (*Lepus californicus*), and western gray squirrels (*Sciurus griseus*). Non-game species include bobcats (*Lynx rufus*), coyote (*Canis latrans*), several bat species, and California ground squirrels (*Citellus beecheyi*). Species classified by CDFG as fur-bearing species occurring in the planning area are limited to gray fox (*Urocyon cinereoargenteus*) and raccoon (*Procyon lotor*).

General habitat conditions (excellent, good, fair, and poor) for habitats used by these species or groups located in the planning area have been summarized in Table 3-4. These general characterizations reflect vegetation resource conditions, habitat quality relative to fragmentation or density of intrusions, and level of conflicts with competing resource issues as indicated by population levels. Applicable elements are footnoted for each condition class.

Table 3-4 Wildlife Habitat Conditions in the Planning Area

Species or group	Habitat Conditions	Comments
Mule deer	Poor-good ^{a-d}	Habitat conditions highly variable throughout planning area
Feral pig	Poor-good ^{a-d}	Habitat conditions highly variable throughout planning area
Mountain lion	Fair ^{b,c}	Numbers increasing throughout state, conflicts with humans continue to increase as habitat and sub-populations become further fragmented
Wild turkey	Fair ^a	Numbers increasing throughout state
Upland game birds	Fair-excellent ^a	Populations subject to wide annual fluctuations, primarily due to timing and amount of rainfall
Small game, non-game, fur-bearing	Good ^{a,d}	Population numbers generally stable to increasing

Notes:

^a Vegetation resource condition.

^b Development/density of intrusions.

^c Competition with other resources.

^d As reflected by population levels.

Raptors

FFO-managed lands include considerable habitat of value to raptors. Specific raptor species that utilize habitats provided in the planning area include the bald eagle, golden eagle, red-tailed hawk, red-shouldered hawk, rough-legged hawk, Cooper's hawk, Swainson's hawk, ferruginous hawk, sharp-shinned hawk, northern harrier, prairie falcon, American kestrel, short-eared owl, long-eared owl, spotted owl, flammulated owl, western screech owl, great horned owl, burrowing owl, and osprey. Threats to raptors include poisoning, vehicle collisions, habitat loss, illegal hunting, illegal trading and egg collecting, power lines and towers, falconry, a reduced prey base, and disturbance of nesting and roosting sites. Adult raptors have few predators and may live for 20 to 30 years. In common with other long-lived species, raptors have a slow breeding rate and a high mortality among young birds. Approximately one-quarter of raptors survive their first year, and only half of these will reach maturity and raise their own young. With a reduction in adult survivorship due to the above-mentioned causes, the population of these species has declined.

Migratory Birds

FFO-managed lands within the planning area contain habitats for multiple species of migratory birds. The Migratory Bird Treaty Act of 1918, as amended, implemented the 1916 Convention between the U.S. and Great Britain (for Canada) for the protection of

migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia). Specific provisions in the statute include the establishment of a federal prohibition, unless permitted by regulations, to: “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird.” (16 U.S.C. 703).

Threats include habitat loss, habitat fragmentation and degradation, and increased direct mortality due to communication towers, powerlines, and wind developments. Bird species on this list, known as USFWS Migratory Nongame Birds of Management Concern, occurring on lands managed by the FFO include the ferruginous hawk, short-eared owl, burrowing owl, red-shouldered hawk, rufous hummingbird, northern flicker, and tri-colored blackbird.

Amphibians

Currently, there are 21 amphibian species classified as endangered or threatened and 11 species waiting to be listed according to the USFWS Division of Environmental Quality (<http://contaminants.fws.gov/Issues/Amphibians.cfm>, 2005). Overall frog and salamander numbers are declining and the cause or causes have not been determined. Loss of habitat and habitat degradation, urbanization, pollution, and disease are factors that have been implicated in this decline. Pesticide and herbicide runoff into California's waters has also been identified as a potential cause for the decline. The California red-legged frog, listed as federally threatened, occurs on FFO-managed lands. The California Red-Legged Frog Recovery Plan was finalized by the USFWS in 2002. The foothill yellow-legged frog, limestone salamander, and western spadefoot (three sensitive species), and the more common species, which include the pacific chorus frog and the California newt, occur on FFO-managed lands.

Fish

Sedimentation of creeks, streams, and tributaries pose one of the biggest threats to anadromous fishes. Fine sediments reduce reproductive success as they settle into the substrate. Refuge pools important for gonad maturation in spring-run Chinook become filled in, adults become less efficient at building redds, salmon eggs can become buried or suffocated, and fry can become trapped before emergence. As sedimentation increases, temperatures also increase, which can shift spawning, incubation, and emergence times, slow the growth process of fry, and shift the timing of migration to the ocean. If temperatures increase significantly over time, reproduction may stop completely. Migration routes with shallow portions may become filled in over time, preventing the salmon and steelhead from reaching their spawning areas.

Fine sediments may also increase gill abrasion. Invertebrates and aquatic insects become less productive, reducing the amount of food available for salmon and steelhead. Road networks are responsible for much of the sedimentation. Activities such as logging, agriculture, and grazing near streams and rivers can increase the likelihood of sedimentation. Mining may also increase the sediment load and produce large concentrations of fines. Reduction of cover and large woody debris also pose a threat to the survival of salmon and steelhead. Cover provides shelter from predators, shade, and refugia from high- or fast-flows events. Cover also traps sediments, aids in bank and channel stability, and creates such channel characteristics as back eddies, side channels, and pools. Grazing near stream edges reduces vegetative cover.

Dams have created one of the biggest threats to anadromous fishes by blocking their migration routes. The Cosumnes River is the only river within the planning area that has not been dammed. Flows from dams must be released at the right times and at the correct levels to fit appropriate requirements of temperature and water velocity downstream. Documented hydro impacts include: (1) blockage (and mortality) of both upstream- and downstream-migrating fish by dams, diversion structures, turbines, spillways, and waterways; (2) alteration of stream and riverine habitats, natural lakes, riparian areas, and wetlands by inundation, dewatering, channelization, and filling; (3) changes in water quality, including changes in sediment transport, dissolved oxygen, and water temperature; (4) alteration of flow regimes (both increases and decreases), which make otherwise suitable riverine habitats unfit for aquatic invertebrates and fishes; and (5) fluctuating instream flows, which make habitats too unstable for full use, may degrade water quality, and affect aquatic invertebrates. Fluctuating flows have been found to interfere with salmon reproduction by reducing egg and alevin survival.

Anglers are prohibited from taking the following fish: Central Valley spring-run Chinook salmon (federally threatened), Central Valley fall-run Chinook salmon (federal candidate), winter-run Chinook salmon (federally endangered), and Central Valley steelhead (federally threatened). Research and management efforts are currently underway to improve the status of all listed species.

3.6 Special Status Species

Special status species include those plant and animal species federally listed as Threatened, Endangered, Proposed, or Candidate, as well as BLM Sensitive, California Native Plant Society List 1B species, and Federal and State of California sensitive plant and animal species. BLM Sensitive Species, CDFG Local Species of Concern, and USFWS Species of Concern will hereafter be referred to as ‘sensitive species’ for ease in reference. Candidate species are managed in a manner to prevent federal listing from occurring. The restricted distributions, specialized habitat requirements, and population pressures (human induced and natural) facing special status species contribute to a high potential for extinction; thus, their populations are of conservation interest.

“Rare” is not an official BLM category, but the term is used in this document, with “rare” defined as biological resources that are uncommon and worthy of special management attention but do not fit into BLM’s definition of special status species. Examples would include species that have only one or a few populations in the region but are more common elsewhere, newly discovered species whose extent are unknown, and genotypes whose taxonomic status are yet to be determined.

Section 7 of the ESA, as amended, directs federal departments and agencies to ensure actions authorized, funded, or carried out are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their important habitats. The ESA mandates agencies to consult when actions may affect listed species or important habitat and to confer with the appropriate Secretary whenever an action is likely to jeopardize the continued existence of any species proposed for listing as threatened or endangered, or whenever an action might result in adverse modification of important habitat proposed for listing (50 CFR 402). According to BLM manual 6840, all non-listed special status species are to be managed in a manner, “...that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed.” This includes sensitive species as well as candidate species. The following tables (Tables 3-5 and 3-6) list special status plants and animals that occur or have the potential to occur on BLM lands managed by the FFO.

The FFO and the CDFG coordinate activities related to the protection and enhancement of federally and state special status species located in the planning area. The FFO also establishes partnerships with local government agencies, the USFS, and local non-government agencies to help protect special status species. Actions include ongoing efforts to survey population levels, protect important habitats, and determine potential areas for habitat restoration and recovery actions. The FFO also coordinates and consults with the USFWS for activities related to the protection and enhancement of federally listed species in the planning area.

Table 3-5 Special Status Plant Species Found on FFO-Managed Land

Common Name	Scientific Name	Status^a
Jepson's onion	<i>Allium jepsonii</i>	BLM-sensitive
Rawhide Hill onion	<i>Allium tuolumnense</i>	BLM-sensitive
Ione manzanita	<i>Arctostaphylos myrtifolia</i>	Federally threatened
Nissenan manzanita	<i>Arctostaphylos nissenana</i>	BLM-sensitive
Big-scale balsamroot	<i>Balsamorhiza macrolepis macrolepis</i>	BLM-sensitive
Stebbin's morning glory	<i>Calystegia stebbinsii</i>	Federally endangered, State endangered
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	Federally endangered, State rare
Red Hills soaproot	<i>Chlorogalum grandiflorum</i>	BLM-sensitive
Mariposa clarkia	<i>Clarkia biloba australis</i>	BLM-sensitive
Brandegee's clarkia	<i>Clarkia biloba brandegeae</i>	BLM-sensitive
Beaked clarkia	<i>Clarkia rostrata</i>	BLM-sensitive
Mariposa cryptantha	<i>Cryptantha mariposae</i>	BLM-sensitive
Ione buckwheat	<i>Eriogonum apricum apricum</i>	Federally endangered, State endangered
Tuolumne fawn lily	<i>Erythronium tuolumnense</i>	BLM-sensitive
Pine Hill flannel bush	<i>Fremontodendron decumbens</i>	Federally endangered, State rare
Eldorado bedstraw	<i>Galium californicum sierrae</i>	Federally endangered, State rare
Parry's horkelia	<i>Horkelia parryi</i>	BLM-sensitive
Canelow's lewisia	<i>Lewisia cantelovii</i>	BLM-sensitive
Congdon's lomatium	<i>Lomatium congdonii</i>	BLM-sensitive
Shaggyhair lupine	<i>Lupinus spectabilis</i>	BLM-sensitive
Slender-stemmed monkeyflower	<i>Mimulus filicaulis</i>	BLM-sensitive
Red Hills ragwort	<i>Senecio clevelandii heterophyllus</i>	BLM-sensitive
Layne's butterweed	<i>Senecio layneae</i>	Federally threatened, State rare
California verbena	<i>Verbena californica</i>	Federally threatened, State threatened
El Dorado mule's ears	<i>Wyethia reticulate</i>	BLM-sensitive

^a All plants on the above list are classified as California Native Plant Society List 1B (CNPS1B). This classification includes plants that are rare, threatened, or endangered in California and elsewhere; therefore, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA. All of the plants that make up List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for state listing.

Table 3-6 Special Status Wildlife Species Found on FFO-Managed Land

Common Name	Scientific Name	Status
Invertebrates		
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Federally threatened
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	Federally endangered
Keeled sideband snail	<i>Monadenia circumcarinata</i>	BLM-sensitive
Hairy Sierra sideband snail	<i>Monadenia mormonum hirsuta</i>	BLM-sensitive
Bohart's blue butterfly	<i>Philotiella speciosa bohartorum</i>	BLM-sensitive
Fish		
Red Hills roach	<i>Lavinia symmetricus</i>	BLM-sensitive
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Federally threatened
Central Valley spring-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Federally threatened
Central Valley fall-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Federal candidate
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	Federally threatened
Amphibians		
Limestone salamander	<i>Hydromantes brunus</i>	State threatened
California red-legged frog	<i>Rana aurora draytonii</i>	Federally threatened
Foothill yellow-legged frog	<i>Rana boylei</i>	BLM-sensitive
Western spadefoot toad	<i>Scaphiopus hammondii</i>	BLM-sensitive
Reptiles		
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	BLM-sensitive
California horned lizard	<i>Phrynosoma coronatum frontale</i>	BLM-sensitive
Giant garter snake	<i>Thamnophis gigas</i>	Federally threatened
Birds		
Tri-colored blackbird	<i>Agelaius tricolor</i>	BLM-sensitive
Burrowing owl	<i>Athene cunicularia</i>	BLM-sensitive
Swainson's hawk	<i>Buteo swainsoni</i>	State threatened
Greater sandhill crane	<i>Grus Canadensis tabida</i>	State threatened
Bald eagle	<i>Haliaeetus leucocephalus</i>	Federally threatened
Great gray owl	<i>Strix nebulus</i>	State endangered

Table 3-6 Special Status Wildlife Species Found on FFO-Managed Land

Common Name	Scientific Name	Status
California spotted owl	<i>Stric occidentalis occidentalis</i>	BLM-sensitive
Mammals		
Greater western mastiff-bat	<i>Eumops perotis californicus</i>	Sensitive species
Pallid bat	<i>Antrozous pallidus</i>	BLM-sensitive
Townsend's western big-eared bat	<i>Corynorhinus townsendi townsendi</i>	BLM-sensitive
Spotted bat	<i>Euderma maculatum</i>	BLM-sensitive
Western mastiff bat	<i>Eumops perotis californicus</i>	BLM-sensitive
Pacific fisher	<i>Martes pennanti pacifica</i>	BLM-sensitive
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM-sensitive
Long-eared myotis	<i>Myotis evotis</i>	BLM-sensitive
Fringed myotis	<i>Myotis thysanoides</i>	BLM-sensitive
Yuma myotis	<i>Myotis yumanensis</i>	BLM-sensitive

Table 3-7 Recovery Plans for Special Status Species Found on FFO-Managed Land

Species	Name of Plan	Status of Plan ^a
Stebbin's morning glory	Gabbro Soils Plants	Final, 2002
Pine Hill ceanothus	Gabbro Soils Plants	Final, 2002
Pine Hill flannel bush	Gabbro Soils Plants	Final, 2002
Eldorado bedstraw	Gabbro Soils Plants	Final, 2002
Layne's butterweed	Gabbro Soils Plants	Final, 2002
Valley elderberry longhorn beetle	Valley Elderberry Longhorn Beetle	Final, 1984
Vernal pool tadpole shrimp	Vernal Pool Ecosystems	Draft
California red-legged frog	California red-legged frog	Final, 2002
Greater sandhill crane		Draft
Bald eagle		Final, 1982

^a All plans, except the Greater Sandhill Crane Recovery Plan, were written by the USFWS. The Greater Sandhill Crane Recovery Plan is being written by the CDFG.

3.7 Wildland Fire Ecology and Management

3.7.1 Context

The planning area is characterized by extremely volatile vegetation types and an unusually long fire season. Private and public lands intermingle, and many of the private lands are home site parcels. The planning area has a history of large fires resulting in considerable property loss. According to public input, wildfire concerns and, more particularly, fuels management comprise one of the most important issues to be dealt with in this plan.

The public has become very active in dealing with issues of fire and fuel. There are now 26 fire safe councils in the planning area, each devoted to making their community safe. While the public demand for action is high, BLM commitment has been low. Though there are over 100 communities at risk in the planning area, only two projects were implemented by the FFO in 2004/2005.

3.7.2 Management Situation

The FFO's FMP is a working reference for wildland fire management and hazardous fuels treatments within the planning area. The FMP describes the current condition of fire management units in the planning area.

The purpose of the FMP is to identify and integrate all interagency wildland fire management guidance, direction, and activities required to implement national fire policy. Direction for the FMP is derived from the RMP and other applicable amendments and activity plans to the RMP.

Existing management direction from the RMP and applicable amendments and activity plans allow for fire to be restored as an integral part of ecosystems to meet resource management objectives. The FMP directs activities for fire and resource personnel to improve protection of human life and property through aggressive fire protection, reduction of hazardous fuels, and restoration of fire-damaged ecosystems.

Federal policy requires that FMPs be developed for all acres of burnable vegetation on federal land, and that they be linked closely with the approved RMP.

Inclusion of fire-related land management decisions from the RMP also assures consistency with other federal, state, local and tribal laws, regulations, policies, and plans to the maximum extent possible.

The FMP identifies resource values and conditions pertaining to fire management in the planning area. The FMP recommends strategies for:

- Wildland Fire Suppression
- Wildland Fire Use (WFU)

- Prescribed Fire
- Non-Fire Fuels Treatment
- Emergency Stabilization and Rehabilitation (ESR)
- Community Assistance/Protection

The FMP provides quantified information for the Fire Program Analysis (FPA) model, based on anticipated fire management activities. FPA is the new interagency software that will be used to project the budget and personnel needs for the FFO and all other fire management organizations administered by the DOI and the U.S. Department of Agriculture (USDA). The FPA model is being implemented in phases. This FMP will provide information for Phase I of the FPA, which includes modules for WFU and wildland fire preparedness. Additional information regarding the FPA is available at <http://fpa.nifc.gov>. The FMP is available through the FFO.

Resources

Fire and fuels have been affected by active and passive management actions since prehistoric times. Vegetation and fuel type are two primary descriptors of fire and fuel resources. Fuel in the natural environment includes both live vegetation and materials such as dead branches, leaves, needles, seeds, and cones. These fuels provide the structure that, under appropriate conditions, supports fire across the landscape. The vegetation and fuel are affected by other elements of the environment, such as precipitation, temperature, soils, and seasonal fluctuations.

Fire regimes have been classified into the five groups as summarized below, in Table 3-8 – Fire Regimes.

Table 3-8 Fire Regimes

Classification	Fire Return Interval	Severity	Example Habitats
Group I	0–35 years	Low	Ponderosa pine, other long-needle pine species, and dry site Douglas-fir
Group II	0–35 years	Stand replacement	Drier grasslands, tallgrass prairie, and some Pacific chaparral ecosystems
Group III	35–100+ years	Mixed	Interior dry site shrub communities, such as sagebrush and chaparral ecosystems
Group IV	35–100+ years	Stand replacement	Lodgepole pine and jack pine
Group V	>200 years	Stand replacement	Temperate rain forest, boreal forest, and high-elevation conifer species

A corollary descriptor of fuel conditions addresses a fire regime's degree of deviation from historic conditions. These condition classes also measure general wildfire ecosystem risk.

- **Condition Class 1:** Fire regimes in this condition class are mostly within historical ranges. Vegetation composition and structure are intact. The risk of losing key components of the ecosystem from fire is low.
- **Condition Class 2:** Fire regimes in this condition class have been moderately altered from their historic range, either by increasing or decreasing the fire frequency. The risk of losing key components of the ecosystem from fire is moderate.
- **Condition Class 3:** Fire regimes in this condition class have been significantly altered from their historical return intervals. Vegetation composition, structure, and diversity have been substantially modified. The risk of losing key components of the ecosystem from fire is high.

One method to determine historical (pre-European) vegetation is the use of Potential Natural Vegetation Groups. Although methodologies exist to arrive at Potential Natural Vegetation Groups, these have not been determined for the planning area at a useful scale. Therefore, the conditions of the various vegetation communities listed below are a result of current vegetation and extrapolated information from research review and FFO staff knowledge and observations.

The FFO is divided into 13 fire management units (FMUs). Each of these FMUs has unique fire management characteristics and prescriptions that are further defined in the FMP for the field office. All of the FMUs in the planning area are classified as WUI areas.

3.7.3 Current Conditions

A detailed account of the fire occurrence and history by FMU is contained in the FMP. About 60 percent of the planning area is considered Fire Regime III. Some Fire Regime I, consisting of about 5 percent of the planning area, can be found in lands with annual grasses, with the remainder of the planning area being Fire Regime II. Most of the planning area is Condition Class 2. Some areas are Condition Class 3 and pose an elevated hazard. Small portions of the area are Condition Class 1, primarily due to human-caused fires.

Trends

The WUI will become more of an influence on fire suppression and fuel management activities in the future. Urban development and public use of the lands in the planning area will increase as population grows. These factors increase the risk of wildland fire ignitions and wildfire threat to residential structures and improvements.

FFO-managed land within the planning area is under the direct protection of the CDF and is thus subject to the level of resources and service provided by the State of California. The recent level of resources available to CDF has not provided for ideal management of fire and fuels on FFO-managed lands within the planning area. Should this trend continue, the potential severity of future wildfires, especially along the wildland urban interface, could increase.

Smoke management concerns are likely to increase with development of urban areas. These concerns could limit prescribed burn activity as well as fire suppression methods used, increasing the potential severity of future wildfires.

3.8 Cultural Resources

3.8.1 Prehistoric Resources

Of a total of 930 archeological sites currently recorded within the decision area, about one-quarter date exclusively from the prehistoric period. The FFO's prehistoric resource base is limited by the nature of FFO-managed lands, which tend to be concentrated in the heavily mineralized areas most disturbed by mining or along the river canyons and other steep ground unfavorable for habitation or economic use.

The types of prehistoric sites found in the planning area are bedrock milling features (grinding rocks), lithic scatters (surficial deposits of flaked stone tools and their manufacturing debris), and middens (occupation sites with substantial buried components). Bedrock milling features, the most common type of prehistoric site, and lithic scatters are considered to be inherently of limited data content, while middens offer the greatest scientific potential. Though they are never encountered frequently, middens occur throughout the planning area. The cluster of midden sites in the South Yuba area is noteworthy because of their antiquity (ca. 2,000 years) and their abundance of artifacts. Two of these sites have been systematically excavated and have had their National Register of Historic Places (NRHP) eligibility established.

Prehistoric occupations tend to occur at locations that are favorably situated. These kinds of locations are frequently threatened by development, with middens on private land being especially vulnerable. Because the FFO-managed lands are located in areas surrounded by private ownership, protective status afforded by federal ownership can be especially important for long-term preservation. The preserved middens on federal land, though many are in less-than-perfect condition, will greatly increase in scientific importance as time passes and archeological sites of this type become increasingly rare in the foothills.

About 35 midden sites are recorded within the decision area; also recorded are about an equal number of prehistoric sites with possible midden components. With midden locations being somewhat predictable, and archeologists naturally tending to prioritize the checking of these locations, it is likely the majority of the middens existing on FFO-managed lands have now been recorded.

3.8.2 Traditional Cultural Places

Due to the decimation of Native American people, largely during the gold rush, much of the indigenous culture within the planning area has been lost. Compared with other areas having a longer-lived and more vigorous cultural presence, Folsom is not rich in identified Native American traditional cultural properties. Among the few known sites is one location near Indiana Ranch (Maidu Elders use area), with documentation beginning to emerge regarding Lovers' Leap and places along the Merced River. It is, of course, impossible to order resources within this category with regard to their relative value, and any documented property should be treated with the appropriate respect.

3.8.3 Historical Resources

Archeological sites dating to the historic period are the most common type of cultural resource on FFO-managed lands. There is no zone or region within the planning area that lacks in historic sites or structures. In the discussion that follows, these resources are grouped by the historic theme they reflect.

Transportation

Considering the way small parcels of FFO-managed land are scattered throughout the foothills, it is predictable that many of the linear structures representing transportation facilities cut across some FFO-managed land. A great many of the major mining ditches encroach at some point on FFO-managed land, including the Excelsior Ditch (YRAA) and the Crawford Ditch (CRAA), both of which are NR properties. Short line and logging railroads which were situated, in part, on FFO-managed land include the Yosemite Valley, the Westside and Cherry Valley, the Sierra (especially the abandoned original alignment and the Melones and Angels branches), the Hetch Hetchy, and the Nevada County Narrow Gauge. No doubt there are also a myriad of local toll roads dating to the 1850 to 1890 era that are present on FFO-managed land but which have yet to be identified. All of these structures have the common characteristic that only a small fraction of their length is situated on FFO-managed lands

Of greater management concern are structures and related sites located primarily or entirely on FFO-managed land. Among these, the outstanding example is the Stevens Trail, a property that has been listed on the National Register. The Stevens, an 1870 pack trail across the North Fork American River, has superb physical integrity, as well as integrity of historic setting. Another significant site that has good integrity of setting is Mule Spring, a landmark on the California National Historic Trail, which was an emigrant camp and from which the Donner rescue was staged. The Briceburg Inn building, associated with the Yosemite All-Weather Highway of the 1920s, has been determined eligible for the NRHP and is utilized by the FFO as a visitor center for the Merced River Recreation Area. Two bridges on FFO-managed land are being considered for possible NRHP eligibility: Rocky Bar (Ponderosa Way across the Cosumnes River) and Slate Creek (Yosemite Highway across Feliciano Gulch).

Settlement/Domestic

Within this category, a full range of historic resources is present on FFO-managed lands. The mid-nineteenth century townsites of Red Dog and Upper Rancheria are entirely on FFO-managed land, though the latter has suffered a considerable loss of integrity. Red Dog, clearly a significant archeological site, has recently been listed on the NRHP. Substantial portions of the gold rush towns of Walloupa and Monona are also on FFO-managed land, though the significance and extent of the archeological deposits has yet to be determined. Smaller early-day miners' camps near Campo Seco and on the North Fork American at Ford's Bar are also thought to show archeological promise. A late nineteenth century Chinese miners' camp on the South Yuba near Illinois Crossing covers a large area and contains an enormous quantity of artifacts. Some outlying ruins

at the town of Indian Diggings, plus an immense deposit of nineteenth century domestic refuse, are located on FFO-managed land near Mt. Aukum.

Isolated occupancy sites are a common type of historic resource on FFO-managed land. They tend to date from one of two time periods: 1850 to 1880 or the Depression Era. The latter have limited archeological value and tend to not be historically significant. The earlier occupancy sites have variable archeological value, depending on the extent and complexity of the remains. Unpatented homesteads, though not common in the planning area, often contain worthwhile archeological deposits. However, the vast majority of the earlier sites are the locations of cabins built by gold miners in the 1850s and were occupied for a single winter season. These cabins provided shelter for miners working localized placer deposits during the time of year when water was available for washing the ground. Even though the structural remains are often conspicuous, the archeological deposit is frequently meager due to the brevity of the occupation and the simplicity of the early miners' lifestyle. A few of these sites, occupied for a longer time span or during an era when material goods were more abundant, may possess archeologically meaningful deposits. In the course of obtaining clearances for recent disposal of FFO-managed lands, a number of early cabin sites have been test excavated with disappointing results; the sites have been classified as insignificant and were disposed of.

Finally, the isolated trash dumps, usually of twentieth century date, are closely associated with a certain richness of material goods in the culture, while depending on the use of pick-up trucks to haul the garbage. The archeological value of the more recent dumps is low.

Cemeteries

Portions of the community cemeteries at Chinese Camp, Iowa Hill, Michigan Bluff, and Todd Valley are on FFO-managed land. The FFO-managed portion of the Iowa Hill cemetery contains the site of the town's Catholic church. The cemeteries at Indian Diggings and Yankee Jims, though no longer in operation, are located entirely on FFO-managed land. There is a small "Pioneer Cemetery" at Mule Spring, possibly containing graves of west-bound emigrants, on FFO-managed land. As a rule, historic cemeteries are categorically excluded from NRHP eligibility but still have significance to the historical record and communities.

Industry

Sites related to mining are the defining feature of FFO's historic cultural resource base. While agricultural sites are occasionally encountered and their value recognized, gold mining has played the major role in shaping the landscape of FFO's public lands. Minor mineral prospects, isolated and lacking in associated cultural materials, are found on nearly all FFO-managed parcels. Small ditches, built to distribute water to various locations within a placer mining gulch, are nearly as common. These two types of resources have inherently limited value—a status which has been programmatically recognized in our Statewide Cultural Resources Protocol.

Underground mine workings are frequently encountered on FFO-managed land, but these are usually in a poor state of preservation (collapsed, filled with water) and typically lack meaningful data. The surface facilities associated with a mine, however, can often be significant archeologically as well as historically. Excellent examples are the two fairly complete stampmill buildings known to exist on FFO-managed lands in the planning area – one at Big Oak Flat and one on North Bloomfield Road. The footings or foundations for headframes, hoists, compressors, crushers, mills, boilers, and water wheels are often identifiable at mine sites, though the equipment typically has been long since removed by salvors. The presence of footings alone may not provide enough information for a site to be significant archeologically, but, in cases where the site is historically significant, their presence may provide the degree of integrity required to qualify the property for the NRHP. There are likely a few mine sites on FFO-managed lands that fall in this latter category.

The most noticeable types of historic mining sites on FFO-managed lands are those related to placer mining. Some placer mines on FFO-managed land have an association with historically significant events or people and, for this reason, are considered NRHP eligible; Yankee Jims Diggings is an example. At the extremes of small (panning and high banking) and large (massive hydraulic pits) scale, placer mining sites may lack the complexity needed for archeological significance. In the middle range, however, are a great number of sites that exhibit interesting arrangements of banks, rock walls, gullies, tailings windrows, rock sluices, and bedrock drains. These sites vary in size, but many display excellent physical integrity. Remains of this type are commonly attributed to the late 1850s through the 1860s. Surveyors working in the later nineteenth century who encountered these abandoned diggings often labeled them “mining gulches” or “surface mines,” but individual sites are seldom documented in the historical record.

When these sites are evaluated on a strictly archeological basis today, they are often considered to contain no significant data beyond that which can be satisfactorily recovered through recordation of the site, resulting in the sites not being preserved. The integrated functioning of the various features within these sites is not perfectly understood by today’s archeologists, and, until a better understanding is achieved, it seems prudent to preserve the better examples of this type of site.

3.8.4 Tribal Interests

Currently, the FFO does not know of any sacred sites, traditional cultural properties, or other places of traditional Native American cultural interest on FFO-managed lands. Ongoing dialogue with individuals, groups, and tribes has provided some information and has indicated some areas may be of concern. Project-specific undertakings with the potential to affect these kinds of places are reviewed with the locally affected tribe/group, (or individual representatives thereof) that the FFO has identified through previous consultation efforts.

There are seven groups of federally-recognized Native Americans that have trust lands within the planning area. In addition, the FFO has engaged in consultation and coordination with non-Federally-recognized Native American tribes, groups, and

individuals. The FFO has issued land use authorizations under various authorities to Native American organizations in Yuba, Placer, and Tuolumne Counties. Tuolumne Rancheria, currently engaged in a dramatic expansion of their economic activities, has expressed an interest in the acquisition of FFO-managed lands that adjoin the reservation. Shingle Springs Rancheria (El Dorado County) has expressed similar desires in the past.

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3.9 Paleontology

Though not cultural resources, these are administered under the oversight of the cultural program. Paleontological resources are not especially widespread or abundant on FFO-administered lands within the plan area. The principle resources on FFO-managed land within the planning area are plant macrofossils (petrified wood and leaf impressions) found at Indiana Hill, Dutch Flat, and You Bet. The major public land occurrences are at the first two locations, and these have been closed to hobby collecting. Those with a legitimate research interest may recover the materials under a FFO permit. This management seems to be providing adequate protection to the scientific resource. Fossil deposits at Indiana Hill (the remains of plants that lived 40 to 65 million years ago) have been the subject of formal scientific inquiry.

- Through the planning process, management alternatives will be considered and selected as will be made available to the public through the FFO.
- Class I – minimal disturbance character of the resource (changes generally not visible)
 - Class II – minor disturbance character of the resource (disturbance of paleontological resources should not be evident)
 - Class III – moderate disturbance character (disturbance may be evident but not significant)
 - Class IV – major disturbance (disturbance is significant and irreversible)

The landscape of the public lands managed by the FFO ranges from nearly level to rugged mountainous terrain located generally in high areas. Vegetation includes forested areas, shrubland, and open grassland. Cultural resources of the FFO-managed lands typically consist of large management structures such as dams, levees, and irrigation canals. Storage tanks, and truck trails are also located on these FFO-managed lands.

Within the planning area, the scattered FFO-managed lands are a small portion of the overall landscape. Only a few portions of these public lands have outstanding scientific value. The visual resources are particularly important in the public lands within the

3.10 Visual Resources

Visual resources are described in terms of scenic quality. Scenic quality is the overall impression retained after traveling through an area of land. In the process outlined in BLM's VRM manual, rating scenic quality requires a brief description of the existing scenic values in a landscape. This description identifies areas that need to be protected, opportunities for enhancement and rehabilitation, and opportunities for improvement by reducing the contrast of human-made modification and disturbance.

Viewpoints for the VRM assessment of the planning area were identified based on a review of the primary routes of travel and key observation points. These viewpoints include highways, roads, trails, rivers, and overlooks. Specific viewpoints analyzed include California State Highway 49 and the Consumnes and Mokelumne Rivers. As a result of the inventory, many areas were assigned existing condition or "inventory" classes. Inventory Class I was assigned to those areas where a natural landscape of high integrity is present in circumstances making it worthy of preservation. Classes II, III, and IV were assigned based on a combination of scenic quality, sensitivity level, and distance zones. Inventory classes are informational in nature and do not necessarily establish management direction. Rather, the inventory classes provide a baseline for making management decisions. The results of the VRM inventory for this planning effort are available through the FFO.

Through the planning process, management alternatives will be considered, and allocations will be made into one of four VRM "management classes":

- Class I – preserve the existing character of the landscape (changes generally to not occur);
- Class II – retain the existing character of the landscape (no disruption of basic elements, changes should not be evident);
- Class III – retain partial character (changes may be evident but subordinate); and
- Class IV – major modification allowed (changes are evident and somewhat dominant).

The landscape of the public lands managed by the FFO ranges from nearly level to rugged mountainous terrain located generally in rural areas. Vegetation includes forested areas, chaparral, and open grassland. Cultural modifications of the FFO-managed lands typically consist of range management projects such as fence lines and livestock and wildlife water developments. Electrical transmission lines, radio communication towers, water storage tanks, and hiking trails are also located in some FFO-managed lands.

In most of the planning area, the scattered FFO-managed lands are a small portion of the overall landscape. Only a few portions of these public lands have outstanding scenic quality. The visual resources are particularly important on the public lands within the

wild and scenic river corridors, within the WSA, and on lands highly visible from major highways.

Visual resources are described in terms of scenic quality. Scenic quality is the overall impression retained after viewing through an area of land. In the review process, BLM's VFM manual, using scenic quality, provides a light description of the scenic scenic value in a landscape. The description identifies areas that need to be protected, opportunities for enhancement and restoration, and other factors that may be necessary to ensure the extent of scenic quality is maintained.

VFM provides for the VFM assessment of the scenic quality of the landscape. A review of the primary routes of view and the scenic quality of the landscape includes highway route miles, trails, and other scenic resources. Specific scenic quality include California State Highway 89 and the Owens and Shoshone Rivers. As a result of the review, many areas were identified as scenic quality. In addition, scenic quality Class I was assigned to those areas where scenic quality is high. Scenic quality Class II is present in those areas where scenic quality is moderate. Scenic quality Class III and Class IV were assigned based on a combination of scenic quality, viewing level, and distance. Scenic quality Class I is the highest and the most sensitive scenic quality. Scenic quality Class II is the next highest scenic quality. Scenic quality Class III is the next highest scenic quality. Scenic quality Class IV is the lowest scenic quality. The results of the VFM assessment for the planning area are available through the FPO.

Through the planning process, management objectives will be developed and allocations will be made into one of four VFM management classes:

- Class I – Areas where the scenic character of the landscape changes frequently (or not occur)
- Class II – Areas where the scenic character of the landscape (or description of scenic character) changes frequently (or not occur)
- Class III – Areas where scenic character (or scenic quality) is moderate (or moderate)
- Class IV – Areas where scenic character (or scenic quality) is low (or moderate)

The landscape of the public lands managed by the FPO ranges from north to south in rugged mountains, rolling foothills, and valleys. Vegetation includes coniferous, aspen, shrub, and grassland. Cultural and historic resources of BLM include historic trails, typically consist of large stone masonry structures such as stone dams and bridges and wildlife water development. Historical development from early colonization through west stage trails, and mining trails, are also located within the planning area. In most of the planning area, the scenic quality is moderate to high. A few portions of the public lands have outstanding scenic quality. The scenic quality is particularly important to the public lands within the

3.11 Cave Resources

In Calaveras and Tuolumne Counties (Stanislaus River Assessment Area), at an elevation of 800 to 2,200 feet, are extensive limestone deposits in what is known as the Calaveras Formation. These deposits, centered in the Stanislaus River/New Melones area, consist of a geologic “island” surrounded by schist and granite. Most of the Calaveras limestone has been metamorphosed into marble form. Where limestone is exposed at ground level and is characterized by disappearing streams, sinkholes, and caves, the topography is known as karst. Although well-defined karst features are not easily noticeable in the area, prominent exceptions are the “Natural Bridges” off of Parrott’s Ferry Road and the cliff across the river from the Columbia Marble Quarry. Caverns are formed when groundwater seeping through fracture fissures dissolves the calcium carbonate, gradually creating a larger and larger void.

Over 70 caves are known to exist in the Calvaeras limestone belt, most of which are named, known, and visited. There is a high probability that others will be discovered. Cave and karst resources on FFO-managed land serve an important recreational function for the general public and the “caving community.” As well as being used for recreational purposes, caves are often rich in scientific information, proving data on geologic processes, paleontological assemblages, and rare biota (especially invertebrates). Caves can also provide habitat to bats.

Prior to the development of the Melones Reservoir Project, a number of significant cave resources were located on FFO-administered lands. Many of these lands are now withdrawn and administered by the USBR. One highly significant cave remaining under FFO management is Crystal Palace Cavern. Access to this cave is difficult, and the location is infrequently monitored by the FFO. The cave is not gated, and no written authorization is required for entry. At one time, visitor use records were maintained through the use of a register, though this has not been the case in recent years.

Table 3-9: Cave Resources on FFO Land

Area	Number of Caves	Number of Caves
10%	10 to 25 MBF	1 to 5 caves
20%	25 to 50 MBF	5 to 10 caves
30%	50+ MBF	10+ caves

3.11 Cave Resources

In California and throughout the United States, caves are common features of the landscape. Caves are natural openings in the earth's surface that are large enough for a person to enter. Caves are formed by a variety of processes, including the dissolution of limestone, the erosion of soft rock, and the collapse of underground chambers. Caves are often found in areas of karst topography, which is characterized by the presence of soluble rocks such as limestone, dolomite, and gypsum. The most common type of cave in California is the limestone cave, which is formed by the dissolution of limestone by slightly acidic water. Other types of caves include sandstone caves, which are formed by the erosion of soft sandstone, and sea caves, which are formed by the erosion of rock by waves. Caves are important natural resources that provide habitat for a variety of plants and animals, and they are also of interest to scientists and the general public.

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The purpose of this section is to describe the cave resources in the project area and to discuss the potential impacts of the proposed project on these resources. The following information was obtained from a review of the literature and field observations.

Over 70 caves are known to exist in the project area. These caves are of varying sizes and are located in a variety of geological settings. Some of the caves are of significant size and are of interest to the general public. The caves are primarily composed of limestone and sandstone. The caves are often found in areas of karst topography, which is characterized by the presence of soluble rocks such as limestone, dolomite, and gypsum. The most common type of cave in California is the limestone cave, which is formed by the dissolution of limestone by slightly acidic water. Other types of caves include sandstone caves, which are formed by the erosion of soft sandstone, and sea caves, which are formed by the erosion of rock by waves. Caves are important natural resources that provide habitat for a variety of plants and animals, and they are also of interest to scientists and the general public.

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3.12 Forestry and Woodlands

In overview, the FFO manages 27,000 acres designated as available commercial forest land base. There are also an estimated 163,000 acres of woodlands. These lands can be categorized in five major vegetation-habitat types.

1. Montane Hardwood-Conifer
2. Montane Hardwood
3. Blue Oak-Digger Pine
4. Blue Oak-Woodland
5. Mixed Chaparral

Though data are available on types and general locations, there has never been an inventory to specifically identify locations, acres, or quantitative stand makeup on FFO-managed lands. This type of inventory has been done for lands where hardwoods are mixed with conifers (montane hardwood/conifer) and is being done in the form of TPCC and Operations Inventory; however, these inventories end at the transition of conifers. For this reason, estimates of “woodland acres” are just that—estimates. As a general rule, woodlands have been expressed as the base acres minus the timber base. This does not account for timber base that is woodland in character. Also, there is no accounting for acres not of woodlands type, such as pure chaparral areas.

The need for better woodlands information is becoming increasingly important due to the mass movement and expansion of population in the foothill communities. The FFO is being asked for information and data about these woodlands by citizens, local governments, and other agencies.

For the last five years, the average number of timber sales per/year is ten. Harvest volume per year is displayed in Table 3-9.

Table 3-9 Volume – Conifer Sales Last Five Years

31%	1 to 5 MBF	Less than one truck load
35%	6 to 25 MBF	2 to 5 truck loads
17%	26 to 50 MBF	6 to 10 truck loads
17%	50+ MBF	10+ truck loads

Table 3-10 Value – Conifer Sales Last Five Years

45%	\$0 to \$1,000
20%	\$1,000 to \$2,500
13%	\$2,500 to \$5,000
20%	\$5,000 to \$49,000
2%	\$50,000+

Fuelwood sales in the decision area are comprised of dead standing or dead-and-down material. The major portion of material sold are hardwoods dead or down from storm damage. The average number of contracts is 20 to 25 per year. The average volumes sold are 40 to 50 cords per year. Average total sales value is \$1,000 to \$1,200 per year.

Regarding planting priorities, the FFO in recent years has attempted to plant other native species in addition to the usual conifers to produce a better forest diversity. These include oaks (blue, black), shrubs (toyon, coffee berry, red bud, buckeye, coyote bush, wild rose), and riparian species (maples, alders, cottonwoods).

Site preparation consists of clearing, piling, burning of piles, ripping, or tillage. Herbicides and prescribed broadcast burning are not used due to small scattered land patterns and proximity to residences. These circumstances produce unacceptable risks in their use. Site prep is accomplished in three ways: (1) FFO dozer, FFO crew; (2) Timber sale (TS) contractors; and (3) California Conservation Corps (CCC). This work is generally accomplished as follows: 65 percent FFO; 34 percent TS contractors; and 1 percent CCC.

Timber Stand Improvement (TSI) work consists of thinning in dense natural stands or overstocked plantations. There is a need to reduce stocking and competition in these areas. TSI has been a low priority; however, recent policy and funding changes emphasize addressing overloaded forest fuels and the urban interface.

Forest and woodlands have seen timber harvest volumes and intensity of management both decrease within the field office for the past 15 years. FFO-administered green sales dropped from an average of 3.5 thousand thousand board feet to about a 100 thousand board feet a year. At the same time, bark beetle infestations and fires have created the need for salvage sales. Salvage sales have been the focus of FFO timber harvests. Average salvage sale volume has been about 340 MBF per year for the past ten years.

3.12.1 Future Outlook

Expansion of the foothill communities will likely increase the importance of FFO-managed land as habitat preserves, green belts, and backyards to private land and home developments. Localized community involvement in land management decisions will increase. With this, there will be a greater demand for detailed data on all resources and a greater accountability for all management actions.

Demand for timber salvage will likely continue through the next decade. Harvests in the future will consist of salvage, single tree removal, specialized products, and stand manipulation generated by and promoted through other resource disciplines (ROW's: roads, power lines, utilities, land patents, fuel reductions, etc.).

Greater emphasis will be given to vegetative structure (fuel loads) and fuels management for the purpose of reducing the catastrophic fires that are occurring with ever-increasing frequency.

According to the California Department of Forestry, approximately 10 million board feet of timber were harvested in California in 1991. The total value of timber harvested in California in 1991 was approximately \$1.5 billion. The 1990 grazing program in California produced approximately 21,000 tons of livestock products. The California Department of Forestry determined that a 20% increase in livestock products would result in an additional \$3.3 million, and livestock products produced \$2.5 million. The 1990 grazing program in California produced approximately 21,000 tons of livestock products.

Table 3-11: Grazing Leases in the American River Watershed Area

Allotment Name	Allotment Number	Units	Season	Agency
Yuba Valley	4001	25	YR	USFS

Table 3-12: Grazing Leases in the Cosumnes River Watershed Area

Allotment Name	Allotment Number	Units	Season	Agency
Yuba	4001	25	YR	USFS
Yuba	4002	22	YR	USFS
Yuba	4003	24	YR	USFS

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3.13 Livestock Grazing

The FFO administers approximately 50 grazing leases. Most of the leases are held by individuals who do not depend on grazing for a central source of income. Many of the grazing leases are for five to ten cattle. Livestock grazing within the planning area does not contribute significantly to the economic condition of the area.

Most of the larger grazing leases that supply the ranchers with income occur in the Tuolumne and Merced river assessment areas. The Meyer lease, located in Mariposa County, encompasses 23,351 acres of FFO-managed land. At the establishment of the lease, 5,500 acres were rated as suitable for grazing, but, due to brush encroachment, less than 2,000 acres are available. Of this, only 450 acres are rated suitable for grazing. The greater part of this grazing operation is dependent on private lands (4,300 acres) and on a grazing lease on the Stanislaus National Forest. With the exception of some small parcels of FFO-managed land within private pasture, the main use the lease serves is trail use to and from the USFS and private lands. Of the 1,984 AUMs FFO allocates in Mariposa County, this lease makes up 1,476 AUMs. Since 1991, this lease has averaged only 125 AUMs of use annually, based on actual use reports.

According to the California Department of Finance, Economic Research Division, livestock and livestock products produced \$11.6 million in 2000 in Mariposa County. Likewise, cattle and calves produced \$9.3 million, and livestock and poultry products produced \$1.8 million. The FFO grazing program in Mariposa County contributed approximately \$3,000 to the above economic statistics. In Tuolumne County, the FFO administers 12 leases totaling 796 AUMs. The California Department of Finance determined that in 2000, livestock and livestock produced \$10.4 million, cattle and calves produced \$3.3 million, and livestock products produced \$200,000. The FFO grazing program in Tuolumne County contributed approximately \$1,000 to those amounts.

Table 3-11 Grazing Leases in the American River Assessment Area

Allotment Name	Allotment Number	AUMs	Season	Acreage
Bacchi Valley	4023	28	YR	427

Table 3-12 Grazing Leases in the Cosumnes River Assessment Area

Allotment Name	Allotment Number	AUMs	Season	Acreage
Morales	4004	25	YR	160
Reed	4013	22	9/1-10/15	280
White	4014	74	YR	486

Table 3-13 Grazing Leases in the Mokelumne River Assessment Area

Allotment Name	Allotment Number	AUMs	Season	Acreage
Cuneo	4114	34	12/1-5/31	237
Del Orto	4116	64	YR	1,062
Dunlap	4118	67	YR	996
Dunlap	4119	90	YR	311
Hertlein Ranch	4133	26	4/1-5/15	301
Oneto	4154	84	YR	768
Oneto Partnership	4155	10	YR	80
Porteous	4160	17	YR	105
Cuneo	4205	27	YR	191

Table 3-14 Grazing Leases in the Stanislaus River Assessment Area

Allotment Name	Allotment Number	AUMs	Season	Acreage
Solari	4104	16	YR	150
Dutil	4120	12	YR	200
Chatom	4135	26	2/1-5/31	609
Campbell	4169	10	YR	295
Whittle	4183	100	YR	600
Gorgas	4184	41	11/1-4/30	150
Wooster	4187	15	1/1-6/30	90
Sanders	4189	18	12/1-5/31	89
Landes	4199	12	YR	40

Table 3-15 Grazing Leases in the Tuolumne Assessment Area

Allotment Name	Allotment Number	Animal Unit Months	Season	Acreage
Appling estate	4102	72	3/20-4/15 11/1-6/1	1,178
Banks	4105	58	YR	1,141
Crook	4108	61	12/1-4/30	790
Filiberti	4122	178	10/1-6/15	1,265
Gardella	4126	109	YR	1,081
Hope	4136	220	11/1-5/31	996

Table 3-15 Grazing Leases in the Tuolumne Assessment Area

Allotment Name	Allotment Number	Animal Unit Months	Season	Acreage
Kistler	4140	27	YR	160
Engler	4141	99	10/1-5/1	1008
Rapini	4164	24	YR	100
Ritts	4185	160	12/1-5/31	1,267

Table 3-16 Grazing Leases in the Merced River Assessment Area

Allotment Name	Allotment Number	AUMs	Season	Acreage
Fox and Munn	4123	48	YR	400
Gann	4127	40	1/1-4/30	80
Bordenave	4142	196	3/1-4/30	982
Meyer	4149	2,057 ^a	3/16-9/15	23,351
Ortiz	4159	43	YR	125
Stembridge	4173	186	YR	780
Turpin	4179	281	3/1-7/31 9/1-10/31	1,891
Visher ^b	4181	70	4/1-7/15	1,506
Giusto	4188	400	2/1-5/31	1,962
Haigh	4193	49	5/15-10/31	982
Burgess	4200	125	3/1-8/31	2,328
Griffith	4210	402	2/1-5/31	7,911

Notes:

^a Actual use amounts to 47 AUMs actually reported each year.^b In non-use.

The FFO's grazing program is relatively small and seems to have a steady to slightly decreasing trend overall. The leases of significant size and/or leases that provide the ranchers with substantial income will likely continue with few or no changes. Grazing use may be reduced in areas with excessive soil erosion or poor range condition, or to provide forage for wildlife or enhance recreational use. Grazing use as a tool for weed eradication and/or fuels reduction may increase within the planning area. Under this scenario, grazing operations would have very specific, short seasons of use, and cattle would be run in targeted areas under a prescriptive grazing program.

Changes in the FFO's grazing program have the potential to economically affect livestock operators, local governments, and communities as well as the expenditures of

the FFO grazing program. Statistics on the California economy from the U.S. Bureau of Economic Analysis show that overall employment decreased while personal income rose from the period of 1989 to 1994. In the agricultural industry, however, both personal income and employment decreased, and agriculture decreased in importance as a proportion of the total California economy. It should be noted that income from agriculture is proportionally much more important than agricultural employment in California.

There were over 22,700 livestock operations in California in 1992, with an inventory of over 5.5 million cattle and sheep. During the five-year period from 1987 to 1992, the number of beef cattle operations decreased almost 14 percent, and sheep operations decreased almost 20 percent. While numbers of sheep have decreased on sheep operations, the opposite is true for numbers of cattle, which have increased on cattle operations. The decrease in the number of cattle ranches, coupled with an increase in cattle numbers, has been a consistent pattern for over 30 years in California.

3.14 Energy and Minerals

In addition to the FFO-managed surface lands in the planning area, there are also about 72,000 acres of FFO-managed mineral estate in the planning area. The FFO manages salable, leasable, and locatable mineral resources, including oil and natural gas fields in the Sacramento and San Joaquin valleys, road base aggregate and dredger tailings in the Sierra Nevada foothills, and gold deposits in the Sierra Nevada metamorphic belt. The management of mineral resources requires the coordinated efforts of a variety of staff specialists, including but not limited to geologists, rangers, foresters, archaeologists, botanists, and wildlife biologists.

A variety of mineral resources occur in the planning area. In the western Sierra Nevada foothills, these include: gold, silver, chromite, copper, tungsten, zinc, barite, other precious and base metals, limestone, mariposite, talc, silica, refractory clay, lignite, and mineral materials such as slate, sand gravel, boulders, decomposed granite, and granitic waste rock. In the San Joaquin and Sacramento Valleys are numerous natural gas fields. The planning area includes the historic, 120-mile-long Mother Lode Gold Belt and the site of James Marshall's gold discovery at Sutter's Lumber Mill, the event that resulted in the California Gold Rush of 1849. Because most FFO management decisions concern the exploration and development of lode and placer gold, the deposits are described as follows.

During the Late Jurassic Period, near the end of the Nevadan Orogeny, gold-bearing quartz veins (hydrothermal, cavity-filling deposits) were introduced along faults and shear zones within the Sierra Nevada metamorphic belt. During the end of the Mesozoic era and early part of the Eocene period, extensive erosion and chemical weathering released gold from the quartz veins. Free gold and gold-bearing quartz pebbles were removed, deposited, and concentrated primarily along troughs of ancient stream channels. These sediments (called Tertiary gravels) and the quartz veins of the metamorphic belt are the sources of placer gold found in present-day rivers and streams.

3.14.1 Leasable Minerals

Leasable mineral resources include oil and natural gas within post-Jurassic marine sediments in California's Central Valley province. Dozens of gas fields are within the boundaries of the planning area.

Natural gas deposits in the Sacramento San Joaquin Basins occur in the westernmost counties of the planning area, where there are numerous parcels of private lands (17,000 acres of FFO split-estate lands) and lands acquired by other federal agencies (59,000 acres acquired by USACE, US Air Force, USBR, and USFWS), with the mineral estate owned by the United States. As needed to meet the demand for oil and gas leases, the FFO occasionally participates in BLM's oil and gas lease sale process, preparing NEPA documentation and lease stipulations for potential lease parcels. The FFO processes applications for permit to drill about once every ten years.

Currently, there are five oil and gas leases in the Sierra Planning Area. These leases involve 450 acres of Federal Farm Mortgage Corporation (FFMC)-acquired mineral estate in Sutter, San Joaquin, Stanislaus, and Merced counties.

The FFO has prepared a reasonably foreseeable development scenario (RFD) for the planning area, which provides a more detailed assessment of potential future development of oil and gas resources (see Map 7 in Appendix A and the RFD in Appendix D).

Other mineral leasing actions include the processing of acquired lands mineral prospecting permits in the National Forest, usually for the development of gold deposits.

3.14.2 Locatable Minerals

Locatable mineral resources occur in mineralized zones within the western Sierra Nevada metamorphic belt and include deposits of copper, lead, zinc, silver, chromite, tungsten, manganese, iron, limestone, asbestos, refractory clay, silica, uncommon varieties of mariposite and slate, and, most importantly, gold. Gold occurs in quartz veins in the bedrock and in placer deposits in both ancient and contemporary stream channels. At the present time, about 1,200 mining claims encumber 20 to 30 percent of the public lands managed by the FFO. About 70 million ounces of gold have been produced from private and public lands in the planning area since the Gold Rush in the mid-1800s. Present production is perhaps a few hundred ounces per year, mostly from suction dredging operations.

By far the most active of the minerals programs in the planning area is the locatable minerals program (mining law administration). The FFO processes about 30 Notices and Plans of Operations (includes amendments, extensions, and renewals) annually. Over 500 have been filed since the 3809 regulations were enacted in 1981. Most of the Plans involve suction dredging and seasonal occupancy on wild and scenic rivers. The Notices of mining claim operations mostly involve suction dredging for placer gold and prospecting in underground mine workings. Other work in mining law administration includes processing PL-359 notices, inspecting claim operations, enforcing 43 CFR 3715, 3802, and 3809 regulations, and conducting patent exams.

3.14.3 Salable Minerals

Salable mineral materials in the planning area suitable for use as construction aggregate and building stone include deposits of slate, granodiorite, andesite, decomposed granite, sand, gravel, cobbles, and dredger tailings.

The annual removal of about 8,000 cubic yards of material by state and county agencies is presently authorized under four free use permits and by a private contractor under one sale contract. The mineral materials include common fill material, rip-rap boulders, slate aggregate, decomposed granite, and granodiorite tunnel muck (dumped by SMUD from a 5-mile tunnel built for its White Rock hydroelectric power project).

Sales of dredger tailings from the Yuba Goldfields east of Marysville (YRAA), hydraulic mine tailings in the YRAA, tunnel muck from the ARAA and TRAA, and slate dimension stone and decomposed granite from the TRAA have been authorized in recent years. The sales have been for 500 to over 70,000 cubic yards of material (or tons equivalent).

Unauthorized removal of mineral materials is a recurring problem, particularly in the Yuba Goldfields. In 1988, a trespass of 1 million tons of sand and gravel from this area was settled for \$515,750. The FFO plans the sale of about 350,000 tons of processed sand and gravel stockpiled during this trespass. Recently, a trespass was resolved involving over 100,000 cubic yards of dredger tailings displaced during the unauthorized construction of the South Yuba Canal by the Yuba County Water Agency and valued at \$117,000.

3.14.4 Renewable Energy

FFO's general policy is to encourage the development of renewable energy resources in areas suitable for this development. On FFO-managed lands, there is no potential for geothermal energy development because the appropriate natural resource situations do not exist.

The potential for wind energy in the planning area was analyzed in the Final Programmatic Environmental Impact Statement for Wind Energy Development on BLM-Administered Lands in the Western United States (2005). This analysis showed that there are no areas of high or moderate potential for wind energy development in the planning area. The one area that has low to moderate potential is in the Merced River Wilderness Study Area and the congressionally designated Merced Wild and Scenic River corridor. Wind energy development in this area would not be allowed by law or national policy. Thus, there is no potential for wind energy development in the planning area.

However, the natural resources for hydropower generation are present in abundance. Many parcels of FFO-managed land have been incorporated into major reservoir projects that have a significant generating capacity. The operators of these projects are both federal (USBR) and local (irrigation and water districts) entities. Although from time to time additional major projects have been proposed, none have actually been constructed within the last 25 years. This could be an indication that the potential for new development on a large scale is limited. With regard to small-scale projects, the FFO has issued three ROWs for "mini-hydro" electric power generation facilities. These authorizations were issued about 20 years ago, and the projects have operated since then with variable success. Without subsidies or other incentives, this type of project seems to have only marginal economic feasibility. Even though the natural environment seems to be favorable for mini-hydro development, the current level of interest in developing future facilities of this type seems to be low.

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3.15 Recreation

Annual recreation visitation to public lands managed by the FFO continues to increase as a result of the close proximity to urban areas, including Sacramento, San Francisco, and Reno. Annual recreation use in the planning area is estimated in terms of visitor hours and is compiled in BLM's Recreation Management Information System (RMIS). These data indicate utilization of a variety of recreation opportunities in the planning area and an increasing number of annual visitor days.

There are many small, inaccessible parcels of FFO-managed land with no public access scattered throughout the planning area. It is unknown what type of recreation activities (if any) occur on these lands or what recreational value these parcels may hold. The FFO assumes recreational activities which occur nearby also occur within these isolated parcels.

The FFO issues an assortment of special recreation permits for commercial use, competitive use, special area use, and organized group activity and event use for a range of activities. Special recreation permits are required for specific recreational uses of the FFO-managed lands and related waters. They are issued as a means to manage visitor use, protect natural and cultural resources via special stipulations incorporated into the permit, and provide a mechanism to accommodate commercial recreational use.

A central issue of the recreation program is the management of areas that receive especially high visitor use. For High Use areas in the planning area, certain designations may be appropriate. As part of the RMP process, FFO-managed lands would be placed in either a Special Recreation Management Area or an Extensive Recreation Management Area. In SRMAs, recreation receives more intensive management and there is increased investment in recreational facilities. ERMAs are typically managed for more dispersed recreation with less facility development. SRMAs and ERMAs are designated through the RMP process. While the FFO has several areas that are presently managed like SRMAs, no SRMA or ERMA designations have been made. It is expected the RMP process will designate these areas as SRMAs.

3.15.1 Whitewater Boating

Whitewater boating is one of the major recreational activities in the planning area. With four wild and scenic rivers and much of the California's Mother Lode, the planning area is a regional destination for whitewater boating. The South Fork American River is among the most heavily rafted river in the nation, with as many as 100,000 users a season. The Merced Wild and Scenic River attracts as many as 5,000 users annually and only sufficiently flows to run in the spring. The North Fork American River, also a wild and scenic river, has the nationally famous Giant Gap run. The FFO has a large and active river management program that dates back over 35 years and is recognized as one of the leaders in whitewater management.

3.15.2 Mountain Biking

Mountain biking opportunities are limited to existing roads, trails, and fire breaks on FFO-managed lands in the planning area. Mountain bike use occurs mainly on the South Fork American River, the South Yuba and Round Mountain area, the Red Hills, and the Merced River. These areas contain miles of trails suitable for a variety of skill levels and difficulties. Special Recreation Permits are issued occasionally for mountain biking events in various areas in the planning area.

3.15.3 Off-Highway Vehicles

Under the current management situation, all FFO-managed lands not closed (by order, supplemental rule, plan amendment, activity plan, etc.) are open for motorized vehicle/OHV use. The FFO has no designated OHV routes. There are many areas where OHV use occurs, and some have become problem areas. Due to the scattered public land pattern, OHV trespass on private property is a constant problem in the planning area. In areas where OHV use has increased, a corresponding increase in complaints has arisen from the neighboring public. The RMP is expected to make motorized vehicle/OHV use designations and establish clear guidelines for OHV use on FFO-managed lands. Motorized trail use is further discussed in the Transportation and Access section.

3.15.4 Hunting/Target Shooting

Hunting opportunities exist throughout the planning area, with turkey, quail, dove, and deer being the most common game hunted. The FFO's land ownership pattern is such that large hunting areas with good access are hard to find; as a result, hunter access is an issue for the public.

Target shooting is one of the major sources of user conflict in the planning area. The major shooting areas on FFO-managed land have all suffered the same plight over the years: closure. The accumulation of trash, junk, and anything that can be used as a target ends up in these areas, which is left for FFO staff to clean up; the constant noise and danger associated with shooting is a source of concern for the neighbors. The remaining areas still open to target shooting are expected to soon face closure.

3.15.5 Hiking

There are approximately 40 miles of hiking/multi-use trails in the planning area. These trails range in difficulty from the easy and flat Dave Moore Nature Trail to the difficult and steep Blue Wing Trail. With the acquisition of the Cronan Ranch, 12 additional miles of hiking opportunities now exist, and more trail expansion is expected in this area.

3.15.6 Equestrian

Equestrian opportunities are limited to existing roads, OHV routes, trails, and fire breaks on FFO-managed lands in the planning area. The areas that have the highest equestrian use are the Red Hills and the newly acquired Cronan Ranch. These two areas offer riders approximately 24 miles of trails for beginner to advanced equestrians. The FFO has just

completed an additional 5 miles of multi-use trail on the South Fork American River, just upstream from the Cronan Ranch.

3.15.7 Back Country Camping

Opportunities for back country camping exist throughout the planning area, most notably in the South Yuba and North Fork American rivers. This activity will most likely increase on the South Fork American River. There is a 14-day camping limit to prevent long-term occupancy and resource damage on FFO-managed lands.

3.15.8 Other Recreational Opportunities

In addition to whitewater boating, hunting, fishing, target shooting, OHV use, hiking, mountain bicycling, and horseback riding, FFO-managed lands supply many other popular types of recreation, including civil war reenactments, rock hounding, botanizing, wildflower viewing, picnicking, sightseeing, star gazing, bird watching, and hang gliding/paragliding. A major concern voiced throughout the public scoping process has been that recreation opportunities on FFO-managed lands should be accessible, maintained, and expanded. Unauthorized activities, trespass onto private property, and needs for protection of environmentally-sensitive areas all seem to call for more patrol and enforcement.

Over the course of the past 20 years, areas have been closed to motorized vehicle use as a result of the listing of endangered and threatened species, fire, and archaeological discoveries. These permanent and temporary closures have resulted in the variety of recreation opportunities continually changing as the surrounding environmental issues change.

Vandalism, age-related deterioration of facilities, and lack of staff continue to be maintenance and budgetary issues as are upkeep and timely replacement of facilities' signs and infrastructure.

As the population of California continues to increase, the public's demand for open space and recreational opportunities is expected to increase as well. The public lands managed by the FFO are within a 2-hour drive from the San Francisco Bay Area. Other Federally managed recreation areas annually increase their use fees, which in turn continues to displace and encourage outdoor recreational users to seek lower- and no-fee areas, such as FFO-managed lands, where currently no fees or minimal fees are charged.

Although the public continues to participate in traditional recreational activities, many new recreation opportunities have evolved as a result of technology, social, and European influences. Some of these activities include hang-gliding/paragliding, recreational gold dredging, geocaching, zorbing, paint balling, and so on. None of these activities were considered during the planning process 20 years ago. Technological changes are expected to increase the types of recreational activities the public demands as well as the challenge of managing these new uses.

Increased visitor use will place higher demands on the recreation infrastructure and increase demand for developed and maintained facilities, access points (trailheads, put-ins), comprehensive trail/river maps, and trail maintenance. This will remain a challenge for the FFO as budgets continue to be limited. Congressional designations and litigation that restrict types of use will continue to cause conflict.

OHV use is becoming more popular throughout the country, particularly in California. This trend can be seen through the increase of sales in ATVs, motorcycles, and four-wheel drive vehicles. Political and financial pressures are restricting OHV use and eliminating OHV use from historically available areas. The displaced users are seeking OHV opportunities in other areas. Recreation areas that provide OHV access will most likely become more congested. Increased use will place more demand on resource managers, natural resources, and trail system infrastructure. Current observations are that OHV use is steadily increasing, and publicity and increasing populations from nearby metropolitan areas are expected to contribute to continued use increases.

Hunting and target shooting will continue to be popular activities. Target shooting will probably be subject to more restrictions than at present by virtue of increased shooting closures resulting from the increase in the WUI. Target shooting ranges will likely become more popular as open areas for shooting dwindle. Volunteers may play a greater role in the development and maintenance of shooting ranges.

Public demand for access and open space preservation will continue to be high. As a result, pressure for public uses will continue. Conflicts are expected as the public desires accommodation and management of various incompatible recreation uses. Development of trails as well as the installation of other visitor facilities may become necessary to manage public use and meet recreation opportunity demands in the area. Such infrastructure will require greater law enforcement presence. The adjoining land-managing agencies (the CDPR, USDA-USFSS) may have particular expectations of the permitted use of particular parcels.

Demand for trail use will increase. Mountain biking, equestrian, and hiking trail users will seek improved facilities. Enthusiasts for mountain biking and equestrian use will seek additional facilities and trails for their use.

No significant changes in recreation opportunities are anticipated for scattered and isolated tracts.

3.16 Transportation and Access

The planning area has a substantial network of all-weather surface public roads and highways, including Interstate 80, U.S. Highway 50, and State Highways 4, 16, 20, 26, 49, 88, 108, 120, and 140. In addition, there are many other county-maintained roads that are open to the public all year. A few county roads are closed during the rainy winter season. At the present time, FFO has a list of 66 roads that it considers or had considered, to be important to its function. These roads are identified by name, maintenance prescription, and 44LD513 reservations. The main purpose for most of these roads was timber hauling, an activity that has declined dramatically within the last 15 years. Under the existing management situation, little maintenance is actually done on these roads, and many are not open to the public. There are many other roads that exist on FFO-managed lands, most of which are available for public use. Most are available all year; however, many are closed or not passable during the rainy winter season. A few roads, however, exist solely to provide access to private facilities, and these may be closed and gated against general public use. Only a fraction of the FFO-managed lands are accessible via public roads or, in some cases, FFO roads. A great many tracts of public land that are not legally accessible by the public due to their interspersed with private land.

The state highways and county roads located on FFO-managed land are the only roads within the planning area that are important to regional transport. Other roads on FFO-managed land do not relate to communication or access between public places, and they have only a very limited, highly localized utility (if any at all). Most of these roads are artifacts of past land uses that have no legitimate function in the present pattern of land use.

Driving a motor vehicle on unimproved roads does, however, serve as a recreational outlet for some members of the public. Many simply enjoy the experience of operating a vehicle in a backwoods situation. The use of FFO-managed land for this purpose has increased dramatically in the last five to ten years. On any parcel of FFO-managed land accessible to the public, all roads and vehicle trails will be in regular use for this purpose, irrespective of the condition of the road and its suitability for ongoing, all-weather use. Besides degrading the condition of the roads, this situation frequently leads to trespass. The recreational user tends to follow the road and often does not care about property boundaries.

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3.17 Lands and Realty

Lands and realty actions can be divided between land tenure adjustments and land use authorizations. Land tenure adjustments focus primarily on land acquisition and disposal (including easement acquisition), while land use authorizations consist of FFO issues, ROWs, utility corridors and communication sites, and other leases or permits.

FFO-managed lands in the planning area totals approximately 300,000 acres and are intermixed with non-federal lands. Efforts are being made to reduce the number of privately owned tracts of land within the largest blocks of FFO-managed land through purchase or exchange with willing owners. Isolated small tracts of FFO-managed land can be identified for disposal unless a particularly important natural or cultural resource is found on the tract. Since FFO-managed lands are, with few exceptions, surrounded by privately owned lands, administrative as well as public access is by public highway, county road, or FFO easement. Often such access is not available. Easements for administrative and public access are sought on a management priority and cost-benefit basis.

3.17.1 Land Ownership Adjustment

Since the release of the Sierra MFP in 1983, the FFO has pursued an aggressive land exchange program to consolidate FFO-managed lands in the North Fork American and Merced wild and scenic river corridors. Furthermore, the FFO has acquired many parcels that contribute to ecological reserves in southern Sacramento County and western El Dorado County. As a result, the FFO has acquired over 30,000 acres of new FFO-managed lands that were not addressed in the 1983 MFP.

Land exchanges have allowed for more efficient and better management of resource values on the FFO-managed lands with contiguous ownership. Acquisition of non-federal lands has improved public access, provided additional protection for special status species habitat, reduced the potential for trespass, and improved the management and protection of cultural and rangeland resources. Acquisition of lands in western El Dorado County (ARAA) was considered the highest priority action necessary to implement a recovery strategy for the complex of rare plants found on gabbro soils. Rare plant habitat has also been acquired in Tuolumne River Assessment Area for consolidation into the Red Hills ACEC.

Land disposals have relieved FFO of the administrative burden of managing isolated parcels of federal lands. Long-term benefits include the reduction of encroachment onto FFO-managed lands from the surrounding private property and putting subject federal lands on the local property tax rolls.

Several ROWs have been closed through the disposal of scattered parcels. Public lands transferred from FFO ownership are made subject to existing rights-of-ways. ROWs closed through the disposal of FFO-managed lands tend to be for small access roads rather than the larger utility ROWs. The latest revision of the ROW regulations provides

for conversion of ROWs affected by conveyance to be converted into perpetual easements.

3.17.2 Land Use Authorizations

ROW grants are issued under Title V of the Federal Land Policy and Management Act of 1976, as amended. The FFO's ROW program is larger than would be expected, given the limited size of the public land base, due to the highly fragmented distribution of the lands. Approximate totals for ROW actions processed each year are: new applications and amendments, approximately 25; and assignments (transfers of interest in existing ROWs), also approximately 25. Ninety-five percent of the ROWs are small telephone, water, or electric power distribution lines crossing scattered FFO parcels or roads to private residences. A certain number of ROWs are issued to county governments for roads. Occasionally, the FFO coordinates with the Federal Highway Administration in the issuance of State Highway ROWs. Major transmission lines cross FFO-managed lands in Nevada, Placer, Amador, Calaveras, and Mariposa Counties. There are two ROWs for major gas pipelines.

The current number of active ROW cases (authorizations currently in effect) is about 1,237. Of these, 28% are for roads, 3% are for state and federal highways, 20% are for electric power transmission, 2% are for communication sites, 12% are for telephone cables, 8% are for water conveyance and storage facilities, and 26% are federal authorizations and reservations.

Lands affected by Special Designations, described in Section 3.19, may have restrictions placed on their management which would constrain the FFO in the issuance of ROWs. To be approved, ROWs proposed for these areas would typically have to not affect the special resource value(s) that the designation was intended to protect.

Many roads were developed prior to passage of FLPMA (1976) under several authorities, including Revised Statute (RS) 2477. Because these roads were permitted without further review by BLM or its predecessor agencies, the General Land Office and the Grazing Service, BLM usually does not have records for these roads. Instead, they are most often identified through state or county records, other historical documentation, or use or maintenance records. FLPMA repealed many road construction authorities, but those granted remain in force until relinquished by the holder or converted to FLPMA ROW at the discretion of the holder.

The FFO issues about ten land use authorizations per year under authority of Title III of FLPMA. These are typically "minimum impact" Land Use Permits, authorizing minor actions. A few leases are issued every year under authority of the Recreation and Public Purposes Act (R&PP).

3.17.3 Land Classification and Withdrawals

Land Classifications under Section 7 of the Taylor Grazing Act of 1934, as amended (43 U.S. Code [USC] 315f). The procedures applicable to Section 7, outlined in 43 Code

of Federal Regulations (CFR) 2400, must be followed. The following actions require classification: Recreation and Public Purposes Act sales (see 43 CFR 2740) and leases (see 43 CFR 2912); agricultural entries (see 43 CFR 2520, 2530, 2610); and state grants (see 43 CFR 2620). To the extent the land use planning procedures pursuant to 43 CFR 1600 differ from applicable classification procedures under 43 CFR 2400, the latter procedures shall be followed and applied. The analysis that supports classification decisions is normally the same analysis utilized in the land use planning/NEPA process to make decisions concerning the disposal or retention of FFO-managed lands. For any classification decision made through the land use plan, classification decision requirements (i.e., proposed and initial decisions required under 43 CFR 2400) will be initiated at the time the decision document is issued for the land use plan.

3.17.4 Utility Corridors and Communications Sites

Until the final designations are made under the 2006 West-Side Energy Corridor Initiative, which foresees designation of I-80, I-5, and the Sacramento Bypass East corridors, there are no designated utility corridors within the planning area. The planning area lands are minimally affected by cross-country or long-distance transportation facilities, which are the type of facilities that can beneficially be grouped. As noted, the FFO-managed lands are primarily used by intricate local distribution systems, for which the “corridor” concept is not useful.

The FFO manages three major communications sites: Mount Bullion (Mariposa County), Telegraph Hill, and Bald Mountain (both in Tuolumne County). At the Mount Bullion and Telegraph Hill locations, there are also communications facilities on adjoining private land. The FFO also administers a number of other communication site rights-of-way, authorizing single users who provide a local, specialized type of coverage.

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3.18 Hazardous Materials/Abandoned Mine Lands

Bureauwide, the BLM engages in hazardous material emergency response actions, site evaluations, and prioritization of cleanups in accordance with laws and regulations. This involves working with the EPA, State environmental quality departments, counties, and potentially responsible parties (both public and private) to fund and expedite the cleanup of hazardous sites. Sites that are an imminent threat to public health and safety as well as sites under a consent order (and therefore can generate penalties and fines) are a priority for the FFO.

In general, FFO-managed lands provide opportunities for a variety of commercial uses and, at times, illegal activities as well. Both commercial and illegal activities have led to releases of hazardous substances and creation of hazardous waste sites. Over 60 percent of all hazardous waste sites on FFO-managed lands result from commercial uses. Landfills, mines, and mill sites account for almost half of these; airstrips and oil and gas sites make up the remainder of the hazardous waste sites arising from commercial activities. Illegal activity (trespass dumping) is responsible for almost 40 percent of all hazardous waste sites discovered to date.

Hazardous materials are often illegally dumped onto FFO-managed lands in the planning area. Many incidents involve the disposal of clandestine drug lab wastes, and others involve the dumping of hazardous fluids such as crankcase oil, pesticides, or herbicides directly onto the ground or in containers. Asbestos-containing building materials have been dumped onto FFO-managed lands, and lead contamination has been found in target shooting areas.

On FFO-managed land within the planning area are small areas of asbestos-bearing serpentine and ultramafic rocks; construction, grading, quarrying, and surface mining operations may cause disturbance to these rocks, which are subject to the California EPA Air Resources Board Asbestos Airborne Toxic Control Measure (California Code of Regulations Title 17 Public Health, Section 93105).

Hazardous materials associated with abandoned mine lands also occur in the planning area. These include naturally occurring arsenic, asbestos, and heavy metals. The use of mercury to recover gold from placer deposits, particularly at hydraulic mine sites, has resulted in hazardous concentrations of mercury in sluice cuts and drain tunnels. Up to 40 abandoned mine land sites with water quality issues may require remediation over the next 20 years.

Hundreds if not thousands of abandoned mine shafts, adits, and sluice tunnels are on FFO-managed lands within the planning area. These are significant physical hazards, especially where located near recreation areas and residences. Forty to 50 of these sites will require remediation over the next 20 years. The FFO responds to requests to seal abandoned adits and shafts considered to be a physical hazard to neighboring residents. When abandoned mine land sites and incidents involving hazardous materials threaten the health and safety of the public or to adversely impact the environment, the FFO takes remedial action to reduce or eliminate these hazards. The FFO and USGS have identified

hydraulic mine sites that are sources of methyl-mercury contamination in the Bear-Yuba River watersheds and elsewhere. Hydraulic mining involved the use of significant quantities of mercury added to the sluices to recover fine particles of gold, and much of it has been left behind in the mine pits and drain tunnels. Plans for eliminating these sources of water pollution are underway.

3.19 Special Designations

Presently, the FFO manages a number of areas with special designations. The designations were made by BLM and by Congress to protect areas with outstanding values (i.e., recreation, scenery, biological resources, etc.). The FFO-managed areas designated include wild and scenic rivers, areas of critical environmental concern (ACECs), ecological preserves, and the Merced River Wilderness Study Area. The areas with existing special designations are shown on Map 2 in Appendix A and are discussed in detail in the following. Areas with the potential for special designation are also discussed. Areas proposed for special designation under the alternatives (Chapter 2) are shown on Maps 5 and 5a to 5d in Appendix A and Map 8 in Appendix A.

3.19.1 Wilderness Areas and Wilderness Study Areas

Resources

Management of lands having wilderness characteristics is a part of FFO's multiple-use mandate and is recognized within the spectrum of resource values and uses. Wilderness characteristics are associated with lands with the following traits:

- Having been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
- Having outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- Having at least 5,000 acres of land or of sufficient size as to make practicable its preservation and use in unimpaired condition; and
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value.

Lands inventoried before 2000 for wilderness character (as described above) were designated as wilderness study areas and recommended to Congress as either suitable or non-suitable for wilderness designation under the Wilderness Act of 1969. Congress has sole authority for designating lands as wilderness or releasing lands from wilderness study. Lands that are designated as wilderness study areas are managed under the BLM's "Interim Management Policy (IMP) For Lands under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

As new lands are acquired or new information about wilderness characteristics is received, the FFO may choose to manage lands to protect wilderness values.

The 1990 California Statewide Wilderness Study Report identified the Merced River WSA as the only WSA within the planning area. The Merced River WSA is approximately 12,959 acres in size, located in the Merced River Canyon between Bagby and Briceburg, approximately 8 miles north of Mariposa, California. The prominent

features within the WSA include the North Fork Merced River, rolling hills, and chaparral landscape. The WSA was considered in the 1990 Report as having low wilderness values and high demand for other uses, including mineral development and OHV use. It was thus reported to Congress as non-suitable for designation as wilderness.

Lands acquired since the original wilderness inventory reported in 1990 do not contain the characteristics associated with wilderness. All of the parcels are too small in size to provide opportunities for solitude or a primitive and unconfined type of recreation. All of the parcels are less than 5,000 acres. Most parcels have existing roads or routes used by motorized vehicles.

Public use within the Merced River WSA has continued to increase. Management of OHV use has continued to be an issue in managing the WSA under the IMP.

3.19.2 Wild and Scenic Rivers

The FFO has three congressionally designated wild and scenic rivers under its jurisdiction: the North Fork American, the Toulumne, and the Merced. These rivers are part of the national wild and scenic river system. The South Yuba River is a state-designated wild and scenic river, also managed by FFO, in partnership with the USFS and CDFG.

The North Fork American was designated in 1978 and has a wild designation. The Toulumne River was designated in 1984 and also has a Wild designation. The Merced River was designated by two congressional actions, one in 1987 and one in 1991. The Merced has a recreational and wild designation on FFO-managed land. The North Fork American has 38.3 miles designated wild (with 14 of those miles on FFO-managed land). The Toulumne has 5 miles designated wild with 3 of those on FFO-managed lands. The Merced has 8 miles on FFO-managed land, with 5 miles designated recreational and 3 designated wild. All these river segments are managed in accordance with the Wild and Scenic Rivers Act guidelines.

In accordance with the Wild and Scenic Rivers Act (16 U.S. Code 1271-1287) and as part of the RMP process, the FFO conducted a review to determine whether other rivers in the planning area are eligible and suitable to become part of the national wild and scenic river system. See Appendix E for a description of the evaluation process and proposed designations.

3.19.3 Areas of Critical Environmental Concern

ACECs are areas of BLM-administered land where special management attention is required to protect relevant and important natural and/or cultural resource values. The ACEC designation indicates to the public that the BLM recognizes these important values and has established special management measures to protect them. RNAs are a type of ACEC that are designated for the primary purpose of research and education.

There are currently six ACECs within the planning area: the Ione Tertiary Oxisol Soils ACEC, Ione Manzanita ACEC, Limestone Salamander ACEC, Red Hills ACEC, Nissenan Manzanita ACEC, and Merced River ACEC. These ACECs are discussed in detail below.

Ione Tertiary Oxisol Soils ACEC

The Ione Tertiary Oxisol Soils ACEC, a 90-acre site in southern Amador County (MRAA), was designated as an ACEC in 1986 to protect the unique soils of the Ione Formation. The Formation represents the only occurrence of an oxisol (an intensely weathered mineral soil typically associated with tropical environments) in the continental United States. The Ione Formation was formed between 65 and 45 million years ago when much of the present land surface of California's Central Valley was inundated by a shallow sea.

The Ione Formation is one of the most important sources of nonmetallic minerals in the western United States and has supported an active mining industry throughout most of the past century. The most productive segment of the formation is near the community of Ione in west central Amador County. Over 50 clay deposits or workings, several large sand deposits, and three extensive coal basins occur within a belt 20 miles long and from 1 to 4 miles wide.

Clay production is the most important of the various mining activities presently occurring in the Ione area. The Ione Formation is the only large source of super duty refractory clay west of the Mississippi River. A significant tonnage of Ione clays are used in the production of heat-resistant brick, which is essential to industries employing high-temperature furnaces, such as the steel, glass, and ore smelting industries.

Nearly a century of mining activity and other land developments have irreversibly altered much of the Ione Formation. Consequently, the last undisturbed areas within the Ione Formation could disappear within the foreseeable future.

While its mineralogical and industrial properties have received considerable attention, the details of its origin and development have not. Research of the Ione Formation could yield important clues to central California's geological history as well as the history of oxisol soil worldwide. However, areas with intact soil horizons must be preserved to ensure the availability of research opportunities into the future. This ACEC contains portions of the Ione Formation with a good representation of these soils.

Ione Manzanita ACEC

The FFO designated the Ione Manzanita ACEC in 1988 to protect the Ione manzanita. This species is currently classified by the USFWS as a candidate for listing under the ESA (as amended). It is also listed by the California Native Plant Society (CNPS) under List 1B, which includes plants which are rare, threatened, or endangered in California or elsewhere.

The Ione manzanita is an endemic plant of the central Sierra Nevada foothills and is mostly limited in distribution to soils derived from the Ione Formation, discussed above. Soils of the Ione Formation are characterized by low fertility and pH levels and high aluminum concentrations. Recent research suggests a correlation between distribution of the Ione manzanita and soil development and acidity.

The Ione manzanita has declined in recent years primarily due to mining of the valuable clays and sands associated with the Ione Formation and due to other land developments. These activities have resulted in the reduction and fragmentation of the species' habitat. In addition, recent severe die-offs of the plant have occurred throughout its restricted range, possibly contributing to further decline of the species.

The Ione Manzanita ACEC is one of only two designated areas where this plant is under protective management by public agencies. A second area, the Apricum Hill Ecological Preserve, located 3 miles south of Ione, is managed by the CDFG.

Limestone Salamander ACEC

Designated in 1986 as the Limestone Salamander ACEC, these FFO-administered lands encompass 1,600 acres of confirmed and potential limestone salamander habitat. A State-listed threatened species and former Federal Category 2 candidate, the limestone salamander is one of California's rarest native amphibians. Except for one population on USFS lands northeast of Briceburg, the species' known range is restricted to 31 population sites along a 20-mile stretch of the Merced River between the headwaters of Lake McClure, near the community of Bagby, and the mouth of Sweetwater Creek, near Briceburg. Of these, 21 population sites occur on FFO-managed lands. The species occurs nowhere else in the world. Entirely terrestrial, the species is found only on north and east facing rocky outcrops and talus slopes. It is dependent on moist conditions and good cover; thus, it is vulnerable to surface disturbances within occupied sites.

Along with a State-administered preserve, designated to protect the species' type locality, designation of the Limestone Salamander ACEC places much of the species' habitat under protective management by public agencies. Other designations in the Merced River drainage, including the Merced Wild and Scenic River and the Merced River ACEC, extend FFO protection to the area's overall natural and scenic values.

Red Hills ACEC

The entire Red Hills Management Area was designated as an ACEC in 1993 to protect: the rare plant species found there; the unusual serpentine soils that provide habitat for unique flora of the area; habitat for the rare minnow known as the Red Hills roach; and bald eagle wintering habitat. The Red Hills ACEC consists of more than 7,100 acres of FFO-managed land located near the historic town of Chinese Camp in the Tuolumne River Assessment Area.

Serpentines have very unusual characteristics. Serpentine is an ultramafic rock, meaning it is low in calcium, high in magnesium, and high in heavy metals such as iron,

chromium, and nickel. Serpentine soils are often low in useable forms of the fundamental plant nutrients, such as nitrogen, phosphorus, and potassium. The major soil type in the Red Hills, the Delpiedra Series, is derived from serpentine and dunite. Because of the serpentine characteristics, this iron-rich soil has low fertility.

Six plants occurring on the FFO-managed lands of the Red Hills are considered sensitive species by FFO due to their rarity: California verbena, Rawhide Hill onion, Layne's butterweed, Congdon's lomatium, Red Hills soaproot, and Hoover's butterweed. California verbena, a federally threatened species, is a Red Hills endemic. Its distribution in the Red Hills is confined to the short stream reaches that remain moist year-round because of groundwater seepage. The Rawhide Hill onion has many, mostly small colonies in the Red Hills. Rawhide Hill onion is confined to areas with sparse vegetation, south facing slopes with shallow soils, and intermittent drainages. Layne's butterweed, also a federally threatened species, is sometimes associated with disturbances such as road cuts. There are only a few very small occurrences of this member of the sunflower family in the Red Hills, although it is also found in El Dorado County on serpentine and gabbro. Congdon's lomatium and the Red Hills soaproot are locally common throughout the Red Hills, favoring north slopes and ridgetops, respectively. Congdon's lomatium is only known from the Red Hills and the Peoria Valley area. Red Hills soaproot is also found in El Dorado County on serpentine and gabbro. Another plant, Hoover's butterweed, has been included on the California Native Plant Society's Watch List. It grows with the California verbena in riparian zones. It may be recognized as a separate taxon that is endemic to the Red Hills, or it may be included as a single taxon with plants found in the Coast Ranges.

Four sensitive species of animals are known from the Red Hills. Wintering bald eagles roost along the shores of Don Pedro Reservoir and have been observed where Six Bit Gulch enters the lake. As many as 20 bald eagles have been sighted during the winter on the shores of Don Pedro Reservoir, roosting in stands of foothill pines. Although the Red Hills has few perennial streams, it has a number of intermittent streams that have spring fed reaches and pools. Two sensitive riparian animal species are associated with these areas: the Red Hills roach and the foothill yellow-legged frog. The Red Hills roach is found in abundance in several pools of permanent water located along the intermittent streams which drain into Six Bit Gulch and Poor Man's Gulch. During the dry part of the year, the fish are confined to these permanent pools, surviving in warm shallow water until spring when they move upstream to spawn. The foothill yellow-legged frog has been found in the western portion of the Red Hills in the Andrews Creek drainage. The western pond turtle has been found in the eastern portion of the Red Hills in Poor Man's Gulch. Both are rare species, formerly candidates for federal listing.

Nissenan Manzanita ACEC

The Nissenan Manzanita ACEC was established to protect the Nissenan manzanita, a BLM-sensitive species. The ACEC encompasses approximately 68 acres of FFO-managed land located near the town of Sonora in the TRAA. The manzanita population occurs on approximately 6 of the 68 acres. This species is native and endemic to California and is known to occur at only ten locations in Tuolumne and El Dorado

Counties. In fact, the population at the ACEC is the only known population south of El Dorado County.

The Nissenan manzanita is an evergreen shrub that produces elliptical leaves and cylindrical fruits. The bark tends to be fibrous, unlike the typical smooth bark of other manzanita species. It grows on open, rocky ridges in chaparral, closed-cone coniferous forest, and woodland habitats. Within the ACEC, this species is found in chaparral habitat with acidic soils, schist rock, and talc.

Merced River ACEC

The Merced River ACEC was designated to protect the wild and scenic qualities of the Merced River, prior to Congressional wild and scenic river designation.

3.19.4 Ecological Preserves

The FFO, in partnership with other agencies, manages two preserves created to protect outstanding ecological resources: Cosumnes River Preserve and Pine Hill Preserve. These preserves are discussed in detail in the following.

Cosumnes River Preserve

The Cosumnes River Preserve is a 45,000 acre preserve dedicated to preserving valley oaks, riparian habitat, and wetlands. The Preserve also serves as a model for wildlife-friendly farming and flood water conveyance. Established in 1987, the Preserve is managed by seven land-owning partners: the FFO, CDFG, California Department of Water Resources, Ducks Unlimited, Sacramento County Department of Regional Parks, Open Space, and Recreation, The Nature Conservancy of California, and Wildlife Conservation Board.

The Cosumnes River Preserve is recognized as one of California's most significant natural areas. Protecting thousands of acres of wetlands and adjacent uplands, the Cosumnes floodplain provides optimal habitat for tens of thousands of migratory waterfowl, songbirds, and raptors. A large portion of the Central Valley's population of greater sandhill cranes, a State threatened species, uses the Cosumnes River Preserve as a winter foraging area. The area is also home to the giant garter snake, a rare reptile species. Chinook salmon and Pacific lamprey swim upstream to spawn, and native Delta fish breed and rear in the shallow waters of the wetlands.

The Preserve encompasses a variety of habitat types, including agricultural lands, tidal wetlands, seasonal wetlands, valley grasslands, oak riparian forest, and the Cosumnes River. All of the partners that make up the Preserve, along with thousands of volunteers and supporters, complete numerous restoration projects on a yearly basis and continue to acquire lands and conservation easements to continue the efforts. The Cosumnes River Preserve has been one of the most significant and successful projects that the FFO has participated in.

Pine Hill Preserve

The Pine Hill Preserve was established to protect eight rare native plants in El Dorado County (ARAA). The Preserve currently encompasses over 4,000 acres of lands managed by nine partners: American River Conservancy, CDFG, CDF, El Dorado County, El Dorado Irrigation District, El Dorado County Water Agency, BLM (FFO), USBR, and USFWS. One target set out in the USFWS recovery plan for these species was for the Pine Hill Preserve to protect 5,000 acres of high quality, rare plant habitat on gabbro soil. So far, approximately 3,100 acres of the Preserve can be included within this goal.

The Preserve is divided into five units spread throughout El Dorado County: Cameron Park unit to the south; Pine Hill Unit in the center; Penny Land Unit east of Pine Hill; Martel Creek Unit west of Pine Hill; and Salmon Falls Unit to the north.

The Pine Hill Preserve's rare plants are a collection of species that share the unusual growing conditions of an area of western El Dorado County. Three of the rare plants are endemic to the Pine Hill region: Pine Hill ceanothus, El Dorado bedstraw, and Pine Hill flannelbush. All three species are federally endangered. Other rare plant species at the Preserve include Bisbee Peak rush-rose (rare); Stebbin's morning glory (federally endangered); El Dorado mule's ears (BLM-sensitive); Red Hills soaproot (BLM-sensitive); and Layne's butterweed (federally threatened).

The surprising assemblage of rare species is part of a unique plant community confined to soils known as the Rescue soils series, named after the nearby community of Rescue. These soils are associated with the broader classification of gabbro soils and cover approximately 30,000 acres in the area described above. Gabbro soils have unusual properties derived from the underlying gabbro rock: they are generally red, mildly acidic, rich in iron and magnesium, and often contain other heavy metals such as chromium.

The gabbro rock from which these soils are derived was originally formed deep in the earth's crust from molten rock about 165 million years ago. Through uplift of the crust and erosion of the ancestral Sierra Nevada, these rocks eventually became exposed at the earth's surface. Gabbro rocks contain mostly dark minerals, and visible crystals are common. Exposed surfaces often weather to a reddish color due to the iron content of the rocks. Outcrops of another unusual rock type, serpentinite, also occur in the Pine Hill area. The soils that result from the weathering of serpentinite, known as serpentine soils, have similarities to the soils from gabbro rocks and support some of the same species.

3.19.5 National Trails

Minor portions of two national trails are situated on public lands managed by the FFO. In Placer and El Dorado Counties, the Western States Trail, a National Recreation Trail, crosses a few miles of FFO-managed land. This trail is of modern development and is used for 100-mile endurance races, both equestrian (Tevis Cup) and pedestrian. The trail is managed by the Western States Trail Foundation under a ROW grant issued by the

FFO. Segments of the California (Emigrant) National Historic Trail are located on FFO-managed lands in southern Nevada County, along Lowell Hill road (YRAA). In the National Historic Trails' Management Plan, the Steep Hollow Crossing is identified as a "high potential segment" (good candidate for intensive management) and Mule Spring is designated as a "high potential site." Both of these locations are on FFO-managed land. For about the last 20 years, Mule Spring has been managed by the FFO for preservation of its historic values.

3.19.5 Areas with the Potential for Special Designations

River Corridors and Riparian Areas

The FFO manages approximately 250 miles of perennial rivers and streams and the associated riparian habitat. Riparian areas are among the most ecologically valuable of all habitat types because of the immense diversity of both flora and fauna in most natural riparian systems. More than 225 species of mammals, birds, reptiles, and amphibians rely on these areas. These systems provide migration routes, nesting and denning habitats, foraging areas, and resting areas for most of California's wildlife species. Riparian systems also provide breeding habitat for California's native fish, including steelhead and salmon.

Unfortunately, riparian systems are vulnerable and are easily altered by human activities. Even a slight change in the vegetation can modify the flow of the system, the temperature and pH of the water, the amount of oxygen in the water, and even the substrate. All of these changes have a subsequent impact on the species that depend on the systems. River corridors and riparian areas with natural flows and qualities are becoming a diminished resource throughout all of California. Many of these ecologically important areas have been greatly modified by the creation of dams, reservoirs, canals, and graveled or concreted levees. Riparian areas are also ideal locations for urban development, grazing, agriculture, and viticulture. These activities have become a major threat to FFO river systems by diminishing both the quantity and the quality of native riparian systems.

Spivey Pond

Spivey Pond is a 54-acre parcel located near Pollock Pines in El Dorado County (ARAA). The parcel includes the 1-plus-acre Spivey Pond, habitat for the California red-legged frog, a federally listed threatened species. This species has experienced a 70 percent reduction in range in California as a result of habitat loss and alteration, overexploitation, and introduction of exotic predators. Today, the California red-legged frog is found primarily in coastal drainages of central California. This species has been completely eliminated from the Central Valley, and only a few populations remain in the Sierra Nevada. The Spivey Pond population of California red-legged frog constitutes one of only five confirmed breeding populations known to occur in the entire Sierra Nevada range.

Ione Formation

The Ione Formation is located in southern Amador County MRAA). The Formation represents the only occurrence of an oxisol (an intensely weathered mineral soil typically associated with tropical environments) in the continental United States. Two federally listed species occur on FFO-managed land in this area: *Arctostaphylos myrtifolia*, Ione manzanita; and *Eriogonum apricum* (*Eriogonum apricum* var. *apricum*, Apricum Hill buckwheat). The sensitive species *Horkelia parryi* also occurs in this area. Little of the habitat for these species is being held in permanent conservation status. For one variety of *Eriogonum apricum*, (*E. apricum prostratum*), there is no protected habitat. A fungal disease, *Phytophthora cinnamomi*, is killing whole stands of *Arctostaphylos myrtifolia*. The disease has reached one FFO-managed parcel with *Arctostaphylos myrtifolia*. Nearly a century of mining activity and other land developments have irreversibly altered much of the Ione Formation. Consequently, the last undisturbed areas within the Ione Formation could disappear within the foreseeable future. A portion of the Ione Formation is protected as the Ione Tertiary Oxisol Soils ACEC, designated as such in 1986.

Deadman's Flat

Deadman's Flat is located near the city of Grass Valley in Nevada County (YRAA). This area contains one federally endangered plant: *Calystegia stebbinsii* (Stebbin's morning glory), and a dwarf flannelbush that is related to the federally listed endangered species *Fremontodendron decumbens*, Pine Hill flannelbush. The flannelbush in the vicinity of Deadman's Flat displays differences from both the common tall flannelbush of the foothills, *Fremontodendron californicum*, and from the dwarf flannelbush species, *Fremontodendron decumbens*, in El Dorado County. Further work is needed to determine the taxonomic position of this Nevada County population. These species are associated with the gabbro soils that occur in the Deadman's Flat area. Gabbro soils have unusual properties derived from the underlying gabbro rock: they are generally red, mildly acidic, rich in iron and magnesium, and often contain other heavy metals such as chromium.

Brownsville Area

The Brownsville Area is located near the city of Oroville in Yuba County (YRAA). This area contains the federally threatened *Senecio layneae* (Layne's butterweed) and a dwarf flannelbush that is related to the federally listed endangered species *Fremontodendron decumbens*, Pine Hill flannelbush. As at Deadman's Flat, this flannelbush population displays differences from both the common tall flannelbush of the foothills, *Fremontodendron californicum*, and from the dwarf flannelbush species, *Fremontodendron decumbens*, in El Dorado County. Further work is needed to determine the taxonomic position of this Yuba County population. These species are associated with the gabbro soils that occur in the Brownsville area. Gabbro soils have unusual properties derived from the underlying gabbro rock: they are generally red, mildly acidic, rich in iron and magnesium, and often contain other heavy metals such as chromium.

Serpentine Areas in the Stanislaus and Tuolumne River Assessment Areas

Serpentine areas are found at Woods Creek and Rawhide Hill. Serpentinite is an ultramafic rock, meaning it is low in calcium, high in magnesium, and high in heavy metals such as iron, chromium, and nickel. Serpentine soils are often low in useable forms of the fundamental plant nutrients: nitrogen, phosphorus, and potassium. Because of the serpentine characteristics, this iron-rich soil has low fertility and often provides habitat for rare plant species. *Allium tuolumnense* (Rawhide Hill onion) is a BLM-sensitive species that occurs in these locations, as well as along Priest Grade, in portions of the Red Hills east of Don Pedro Reservoir, and in the Red Hills ACEC. This species is known from approximately 20 occurrences and is limited to locations in Tuolumne County. *Chlorogalum grandiflorum* (Red Hills soaproot) is another BLM-sensitive species that occurs in these areas. Red Hills soaproot occurs in Amador, El Dorado, Placer, and Tuolumne Counties and is often (but not always) associated with serpentine and gabbro soils.

Vernal Pool Areas

The FFO manages vernal pool habitats in Sacramento and Tuolumne Counties, although most of the vernal pool habitat managed by this office lies in the Stanislaus drainage on the Table Mountain Formation (i.e., the inverted topography of the ancient Stanislaus River). The FFO-managed parcels on the tables are not greater than 50 acres and often are much smaller. In every case, the FFO-managed land shares the table top with much larger private land holdings.

Vernal pools are a unique and ecologically significant habitat type. Vernal pool vegetation often consists of ancient species that may be endemic to the local area and/or to vernal pool systems in general. Medicinal properties are associated with many of the vernal pool plants. Vernal pools also provide an important habitat for wildlife. Numerous waterfowl species use vernal pools during spring migrations. More than 70 rare species are restricted to vernal pools, with new species being discovered on a regular basis. It is estimated that 2.8 million acres of vernal pools have been destroyed to date as a result of human-caused manipulations such as habitat conversion to agriculture, water diversion and channelization, and urbanization.

Bagby Serpentine

In the area north of Bagby along Highway 49 is one of the largest continuous bodies of serpentine in the southern part of the central Sierra Nevada foothills. Although it is bisected by Highway 49, it is one of the least disturbed serpentine areas, with few active roads besides the highway and few human habitations. East of Highway 49, the land is grazed. West of Highway 49, no grazing occurs. For this reason, the ecosystem is relatively healthy and intact.

Several BLM sensitive species occur on this serpentine body. Shaggy hair lupine is locally abundant. Mariposa cryptantha, a species with very few known occurrences, also occurs locally. Serpentine endemics include serpentine blue-cup, margined lomatium,

Congdon's onion, and milkwort streptanthus. Milkwort streptanthus accumulates nickel in its foliage and supports a newly described insect that feeds preferentially on this plant and likewise accumulates nickel. Several of these plant species grow on raw serpentinite outcrops with little soil development. Other species that are mostly confined to serpentine include dwarf onion, evening snow, and the only reported occurrence in the central Sierras of sickle-leafed onion, a Coast Range species. Another species of interest is the spectacular bitterroot, which is mostly confined to serpentine in the Sierra foothills and which occurs abundantly on the ridges east of Highway 49.

The most common plant community is a serpentine chaparral dominated by buckbrush. Although this community has similarities to that found in the Red Hills, the flora is distinct, possibly because of differences in rock type. The Red Hills are mostly comprised of the igneous ultramafic dunite, whereas Bagby Grade is underlain by the metamorphic rock serpentinite. Rock outcrops are much more abundant at Bagby Grade. This serpentine body supports stands of native bunchgrasses like California melic and Sandberg's bluegrass. In most of the Sierra foothills, the California native perennial grass flora has been replaced by non-native annual grasses.

Indiana Hill/Dutch Flat Paleobotanical Localities

At both of these localities, hydraulic mining for gold during mid-1800s has exposed fluvial deposits of the ancestral Yuba River. For a century, scientists have been aware of these deposits and have collected and studied them. The deposits of scientific importance date to the early Tertiary and are considered equivalent to the Ione Formation. Plant fossils that have the greatest value occur within a siltstone layer and include leaf compressions and carbonized wood. The remains are notable for their exceptional preservation of leaf cuticular material. These fossilized remains are abundant enough that they serve to define entire plant communities as well as document evolutionary change in these communities through time. It is also possible that fossil DNA could be extracted from these remains, which could be used to clarify taxonomic relationships between various fossil species and modern species.

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3.20 Social and Economic Conditions

A study of the social and economic conditions in the planning area was conducted by a federal contractor in 2006, in conjunction with the development of the Sierra RMP. The results of this study are summarized in this section. Additional information about the study is available through the FFO.

The public lands managed by the FFO are located in the fastest growing region in California: the Sacramento metropolitan area and the surrounding Sierra foothills and Central Valley. The population of the 14 counties in the planning area was estimated at 3.7 million people in 2005, an increase of almost a million in the 15 years since 1990. Eight of the 16 fastest growing counties in California between 2000 and 2005 are located in the planning area. This high rate of growth is expected to continue over the next 15 years. Population in the year 2030 is projected at over 5.1 million, an increase of almost 1.5 million. Much of the population is located in Sacramento and its suburbs, and in two other Central Valley cities, Stockton and Modesto.

The population growth has paralleled and been driven by the region's economic growth. Government and agriculture have long been important economic sectors, but the 1990s brought the emergence of a high tech industry (Intel alone has over 6,000 jobs in the Folsom area) and a very strong construction industry. Much of the area's growth has been fueled by jobs and people moving from the Bay Area to Sacramento and the Sierra foothills. The area's relatively affordable land and housing have drawn businesses that feel it is easier to attract employees if housing is affordable. In 2004, about 1.5 million people were employed in the region, and employment was growing three times faster than the state growth rate. The high rate of job growth is expected to continue.

Personal income in the region has generally lagged behind the rest of the state, but wide variation occurs. Placer and El Dorado Counties have per capita incomes among the highest in the state, while Merced, Mariposa, and Yuba Counties rank among the lowest. The economic growth of the last 10 to 15 years does not appear to be pushing per capita income upward such that incomes are catching up with those in the Bay Area or southern California.

The very large population of the planning area puts considerable pressure on FFO-managed lands. This is true even though most of FFO's 230,000 acres and over 1,000 individual parcels of land are located in the nine counties of the Sierra foothills, which have less than 20 percent of the region's population. The population of the foothills was just over 800,000 in 2005 and is projected to grow to almost 1.1 million people by the year 2020. The FFO-managed lands in the planning area tend to be located in the same area as most of the population of the Sierra foothills, in the Highway 49 corridor below an elevation of 4,000 feet. The rather large population and the intermingling of many parcels of FFO-managed land suggest a high degree of interaction between public land resources and the local population. Moreover, the proximity of the FFO-managed lands to another 3 million planning area residents and yet another 8 million people within 2-hours driving time has added to the potential pressure.

Traditional economic measures (countywide and sector estimates of employment and income) indicate FFO-managed lands in the Sierra Planning Area have little economic impact. Given the size of the regional economy, commercial production from FFO-managed resources can only be expected to be a very small part of the whole. Indeed, traditional economic products of FFO-managed lands—timber, woodland products, livestock forage, and minerals—are all produced in small quantities that are further diminished in comparison to the overall regional economy. Only river-based recreation activities appear to make a visible economic contribution, especially on the South Fork American River and on the Merced River. Even that economic contribution is ameliorated by its seasonality.

A conventional accounting of economic impacts is not really an adequate gauge of the FFO's influence on social and economic conditions in the planning area. The FFO is a large landowner, with properties dispersed throughout the populated parts of the foothill counties in a region with a large and rapidly growing population. This position ensures that the FFO will affect small-scale, individual, or niche economic activities. It will also have an impact on social values: residents' quality of life, lifestyles, settlement patterns, and sometimes even their sense of place.

FFO-managed lands have this effect by making available tracts of undeveloped land that are likely to remain undeveloped. These tracts serve as reservoirs of open space that offer opportunities for dispersed recreation, protect wildlife and plant habitat, buffer viewsheds from nearby residential development, provide a brief escape from the press of population, and often preserve a remnant of the Sierra foothills' past. Residents have indicated that these factors have become increasingly more valuable as population pressures in central California expand. The presence of these parcels and the values they represent affect residents' quality of life and may allow them to retain a sense of place that is threatened elsewhere in the region. Residents indicate that they continue to live in the area because of these values or that they have moved to the area because they sought these values.

Quality of life impacts may be exhibited throughout the planning area, wherever FFO parcels have neighbors or nearby residents that use the parcel. Usually there is a positive effect on the quality of life since the FFO-managed land serves as an extension of a resident's backyard or as a local park or piece of "wildland" to community members. Recreation, escape, a sense of solitude, and the opportunity to appreciate a natural environment are all offered nearby. There is sometimes a negative influence on quality of life, especially when immediate neighbors of a public land parcel are exposed to activities on that land—such as "squatting," partying, and shooting—that disrupt enjoyment of their own property as well as the FFO-managed parcel. Inattentive management can also exacerbate this effect. Some of the FFO's neighbors fear that inadequate management of vegetation on FFO-managed land increases the risk of a wildfire that could spread to their own property. Depending on an individual's point of view, the very same parcel could be perceived to enhance or take away from one's quality of life.

Beyond these social impacts, numerous economic impacts on the individual or community level occur. Quality of life itself may often translate into economic value. It is common that properties adjacent to FFO-managed land are offered for sale at a higher price than otherwise comparable properties. The value added by proximity to open space and recreational amenities is well established by research. Equally well established is that proximity to properties that are heavily used or abused may diminish a property's value.

3.20.1 Energy and Minerals

Within the plan area, economically important minerals include gold deposits in the Sierra Nevada foothills and natural gas reservoirs in the Sacramento and San Joaquin Valleys. As an intrinsically valuable precious metal, gold is very important in the global marketplace. U.S. gold production provides jobs and helps to reduce international trade imbalances that have contributed to the national debt. The production of natural gas helps the U.S. become more energy self-sufficient by reducing the country's dependence on foreign oil. The U.S. currently imports about 60 percent of the oil it consumes. The Department of Energy predicts that U.S. consumption of natural gas will increase by 40 percent in 20 years.

The development of construction aggregate and building stone resources is becoming increasingly important as the urban areas of northern California expand. Consequently, the demand for mineral materials from FFO-managed lands is increasing. Several permits and sale contracts for the removal of about 70,000 cubic yards of aggregate materials from sites in the planning area are authorized at this time.

3.20.2 Livestock

Forage resource production on FFO-managed lands is not significant in relation to the overall economy. However, a few industries and individuals are economically dependent on FFO-managed lands. For example, there are a few livestock operators, a definite minority of the lessees in the planning area, who are highly dependent on FFO-managed lands for their forage production. Another economic consideration is the potentially high cost of fencing the private lands that are currently fenced in common with FFO-managed lands, should the lease be cancelled.

3.20.3 Recreation

Public lands managed by the FFO continue to be significant in supplying recreational opportunities for whitewater boating, hiking, equestrian use, mountain bikes, hunters, and OHV enthusiasts. In addition to these more traditional uses, a variety of other passive and mechanized recreational uses are occurring on FFO-managed lands that generate economic activity in neighboring communities as visitors travel from around the state and nation to visit California's Sierra Nevada foothills.

The populations of towns and cities along the foothills vary socioeconomically depending on location. The Mother Lode region, which stretches from Nevada County through

Mariposa County, supports both small and large economies that rely on varying levels of natural resource use as well as revenue generated from tourism. Communities are often divided regarding FFO's management of public lands. Many support management practices that will draw additional tourist revenue to the foothill communities, while others are concerned that such activity will degrade the character of the area.

As California's population grows, more people will visit the the Sierra Nevada foothills and surrounding areas. The increase in interest and use may change the socioeconomic conditions of smaller foothill communities and cause a shift in residents' lifestyles. FFO-managed lands in the Central Valley will also receive more recreational use and continue to support ecological services that contribute to social and economic sustainability, although the value of these services (i.e., open space, water resources, etc.) is difficult to quantify in many cases because they are considered non-market values.

3.20.4 Lands and Realty

Consolidation of major blocks of FFO-managed land continued with the assembled land exchange of the last decade. The majority of acquisitions have been in the major river corridors and in the area of ecological preserves. Numerous scattered parcels identified for disposal still remain in federal ownership. Land tenure adjustments have resulted in the disposal of 2 acres for every acre acquired. Land exchanges have put more federal lands on the local property tax rolls.

Chapter 4

Environmental Consequences

4.0 Introduction

This chapter analyzes the environmental consequences or impacts expected to occur as a result of implementing the proposed actions described for each alternative in Chapter 2. The scope of the impact analyses presented in this chapter is commensurate with the level of detail of the actions presented in Chapter 2 and the availability and/or quality of data necessary to assess impacts. Current conditions in the planning area, as described in Chapter 3, were used as the baseline for assessing expected impacts.

4.0.1 Impact Analysis Methodology

Each section in Chapter 4 is organized the same way. The introductory subsection encourages the reader to review Chapters 2 and 3 to understand the goals, objectives, proposed actions, and existing situation for the FFO program discussed in that section. The second subsection addresses the effects of a given program's proposed actions on that program. For example, the impacts of the recreation program's proposed actions on recreation are analyzed. The third subsection addresses the effects of other FFO programs on that program. For example, the impacts of other FFO programs' proposed actions on recreation are analyzed in the recreation section. The fourth subsection refers the reader to other sections in Chapter 4 to learn about the impacts of a given program on the environment and other FFO programs. For example, in the recreation section the reader is referred to the soils section to learn about the potential impacts of recreation on soil programs proposed actions. The last subsection deals with cumulative impacts.

The section on social and economic impacts (4.20) differs from the other sections in Chapter 4 because the FFO does not have a "social and economic program." Rather, there are existing and forecasted social and economic conditions in the planning area that would be impacted by FFO actions. Thus, the section on social and economic impacts deals exclusively with analyzing the impacts of FFO's proposed actions (i.e., recreation, wild and scenic river designations, land tenure adjustment, etc.) on social and economic conditions.

4.0.2 Types of Impacts to be Addressed

Direct and Indirect Impacts

Terms referring to the intensity, scope (geographic extent), and duration of impacts are used in this chapter. Impacts are not necessarily only negative; many are positive benefits and are identified as such. The standard definitions for terms used in the impacts analysis include the following:

- Adverse – the effect is negative.

- Beneficial – the effect is positive.
- Negligible – the effect is at the lower level of detection; change would be difficult to measure.
- Minor – the effect is slight but detectable; there would be a small change.
- Moderate – the effect is readily apparent; there would be a measurable change that could result in small but permanent change.
- Major – the effect is large; there would be a highly noticeable, long-term, or permanent measurable change.
- Localized – the effect occurs at a specific site or within a known boundary.
- Short-term – the effect occurs only for a short time after implementation of a management action.
- Long-term – the effect occurs for an extended period after implementation of a management action.
- Direct – an effect that occurs as a result of actions on the resource being addressed.
- Indirect – an effect that occurs as a result of actions on other resources.

Cumulative Impacts

Cumulative impacts are defined as follows:

The impact on the environment which results from the incremental impact of the action when added to past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as projects or actions that have similar impacts (40 CFR 1508.7).

Cumulative impacts include impacts that occur on resources or lands outside the planning area and/or outside of BLM jurisdiction as a result of BLM management actions taking place within the planning area.

The time frame for the cumulative impacts analysis begins at the anticipated time the RMP would take effect and extends for 15 to 20 years.

4.0.3 Incomplete or Unavailable Information

Impacts are quantified where possible. Impacts are sometimes described using ranges of potential impacts or in qualitative terms. In the absence of quantitative data, impacts are described based on the professional judgment of the interdisciplinary team of technical specialists using the best available information. Impacts analysis based on incomplete or unavailable information is identified where applicable in this chapter.

4.0.4 Mitigation

Mitigation measures designed to avoid or reduce impacts are incorporated into the decisions of each alternative, as defined in Chapter 2. There are no separate and/or additional mitigation measures beyond the decisions outlined in the alternatives. Therefore, impacts identified in this chapter are unavoidable and would result from implementing the management actions and related mitigation.

4.0.5 Assumptions

Several general assumptions were made to facilitate the analysis of potential impacts. The assumptions listed below are common to all resources. Other assumptions specific to a particular resource are listed under that resource.

- Funding and personnel would be sufficient to implement any alternative described.
- The RMP would be in effect for 15 to 20 years.

4.1 Air Quality

4.1.1 Introduction

Refer to Section 2.1 for the proposed air quality management actions under each alternative, and refer to Section 3.1 for a description of existing air quality conditions in the Sierra Planning Area.

For ease of reference, the management goal for air quality is restated below:

- Protect public health and safety and sensitive natural resources.

4.1.2 Impacts of the Air Quality Proposed Actions on Air Quality

The current management strategy under Alternative A is to comply with local air district, state, and federal air quality regulations. The current strategy would result in beneficial, long-term impacts on air quality.

Under Alternatives B, C, and D, the management strategy would be to comply with local air district, state, and federal air quality regulations. The alternatives also propose to protect air quality through the management of emission from sources such as prescribed fires and ground-disturbing activities that generate particulates. Compared to Alternative A, these alternatives would increase air quality protection, yielding long-term beneficial impacts.

Under Alternative B the FFO would prohibit ground-disturbing activities on soils bearing naturally occurring asbestos. The FFO would also reduce motorized vehicle use on dirt roads under its management. Compared to all the other alternatives, the proposed actions under Alternative B would be the most beneficial for protecting air quality.

Under Alternatives C and D, the FFO would, where possible, avoid ground-disturbing activities on soils bearing naturally occurring asbestos. This would result in long-term beneficial impacts on air quality at a slightly lower level than under Alternative B, but at a higher level than under Alternative A.

4.1.3 Impacts of Other FFO Programs' Proposed Actions on Air Quality

Wildland Fire Ecology and Management

Prescribed burns are used to manage wildfire-prone vegetation or fuels. Small acreages are burned on a regular basis over several years to reduce available fuels and thus reduce the wildfire hazard. Each air district has specific regulations regarding required plans and permits and conditions for prescribed burning. Before implementing a prescribed fire, one must coordinate with the air district, submit a smoke management plan, and obtain the necessary permit(s). This minimizes concurrent multiple smoke sources close to one another that could result in a cumulative smoke impact.

Fire can have adverse impacts on air quality, depending on the size, location, and type of fire. Prescribed fires offer a long-term benefit of reducing the available fuel and thus reducing the potential for future wildland fires. While prescribed fires have a short-term adverse impact on air quality, there is the long-term benefit of reducing the opportunity for wildland fires, which can have a very significant adverse effect on air quality and would be more likely to impact the air quality of densely populated areas. All of the alternatives contain provisions for managing fuel hazards that would result in beneficial impacts on air quality. The major differences among the alternatives involve where fuel reduction projects would be emphasized. Alternatives C and D would likely result in the most protection of overall air quality because they prioritize fuel management in areas near the built environment.

Energy and Minerals

The mineral development most likely to affect air quality is the extraction of sand and gravel in the Yuba Goldfields. Sand and gravel resources in this area would be available for development under all of the alternatives. Potential fluid mineral operations consist of drilling for oil and natural gas in the Central Valley and Yuba assessment areas. Although solid mineral operations can be seasonal in nature, fluid mineral exploration and development operations may occur year-round.

Solid mineral development can cause air pollution in the form of equipment exhaust emissions and fugitive dust. The pollution is caused by earth-moving activities, the transport of materials, and the movement of vehicles over unpaved areas. The extent of these activities is relatively limited in the planning area; thus, impacts on air quality from solid mineral extraction and oil and natural gas development are generally localized and would be minor to negligible under all the alternatives.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Motorized vehicles, including OHV, produce air pollution in the form of engine exhaust and fugitive dust that is created by travel on dry dirt roads. Fugitive dust from motorized vehicle use can, in certain situations, be a serious nuisance to nearby residents and to the non-motorized recreating public. Vehicles sold and operated in California are equipped with engines designed to meet air pollution regulations; vehicles maintained in compliance with these rules would help to reduce air pollution. In addition, fuel sold in California must meet specifications that are designed to minimize air pollution.

Other motorized vehicle uses associated with recreational uses such as hiking, rafting, horseback riding, and camping would produce negligible impacts on air quality.

Alternative A places the least restrictions on motorized vehicle use on FFO-managed land. Under this alternative, FFO-managed lands would be open to motorized vehicle/OHV use except where closed or limited; therefore, this alternative would result in temporary, minor adverse impacts on air quality resulting from dust and exhaust emissions from motorized travel on unpaved surfaces. The impacts would be localized.

The FFO manages a relatively small amount of land in the planning area. Opportunities for motorized vehicle use are far and few between.

Under alternatives B, C, and D, FFO-managed land would be designated as limited to motorized vehicle/OHV use. These management scenarios represent a more proactive approach to the protection of air quality, compared to Alternative A, and would have a more long-term beneficial impact on air quality. Under alternatives B, C, and D, impacts on air quality from motorized vehicle/OHV use would be extremely localized and negligible to minor. Alternatives B and D, which limit motorized use to key designated routes, would have the least impact on air quality.

4.1.4 Impacts of the Air Quality Proposed Actions on the Environment and Other FFO Programs

The air quality proposed actions would generally have a beneficial impact on the environment. The proposed actions would not likely affect public use of FFO-managed lands, except possibly in the case of large-scale mineral development. The fire program's ability to use prescribed burn to reduce fuels and improve environmental health could also be limited by air quality standards. Refer to Section 4.7 on wildfire management and ecology and Section 4.14 on energy and minerals for a more detailed discussion.

4.1.5 Cumulative Impacts

The FFO's proposed actions would not create a significant impact to planning area air quality as compared to activities on other lands, such as motorized vehicle travel by individuals. The air districts charged with managing air quality in the planning area have developed air quality plans that address air pollution producing activities within each district. These plans consider the cumulative effects of all air pollution sources on the overall air pollution levels within each district. The ultimate goal of these plans is to maintain compliance with an air quality standard or to achieve compliance with air quality standards if the air district is not in compliance.

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4.2 Soil Resources

4.2.1 Introduction

Refer to Section 2.2 for proposed soil management actions under each alternative, and refer to Section 3.2 for a description of existing soil conditions in the Sierra Planning Area.

For ease of reference, the management goals for soils are restated below:

- Manage soil so that the biological and physical characteristics are appropriate to the soil's type, climate, and landform.
- Manage soils for long-term productivity and the long-term sustainability of the ecosystems that depend on the soil resource.

4.2.2 Impacts of the Soil Resources Program's Proposed Actions on Soils

The FFO manages a wide range of soils, including rare soils. The proposed actions would produce long-term beneficial impacts to soils in the planning area by reducing erosion, limiting the transport of sediment into stream, and increasing vegetative health. Preventing disturbance and compaction can prevent soil degradation. If disturbance is to occur, conservation of surface soils by taking steps to stockpile topsoil and reduce soil erosion can mitigate the adverse effects of the disturbance. Revegetation is a very effective soil stabilization tool. These best management practices generally reduce adverse impacts of disturbance on soils to acceptable levels.

Under Alternative A, the FFO would adopt the practices of the current management plan, which does not specifically address soil resources. The FFO would continue to follow the latest BLM policy concerning ecosystem management (e.g., BLM's Rangeland Health Standards and Guidelines for California and Northwestern Nevada) which provide general guidance for soil conservation. Overall, the impacts could be adverse, but probably minor. The soil management program goals and actions proposed under alternatives B, C, and D would be more beneficial to soil management because they are more proactive.

Under Alternatives B, C, and D, the FFO would be required to stabilize soil and control erosion on Truro Mine Road, Rewinkle Road, and Weber Creek Road (all in the ARAA), and in the Bald Mountain parcel (in the TRAA). These proposed actions would result in long-term beneficial impacts to soil resources, localized to the areas identified. In addition, these actions would result in secondary beneficial impacts on water quality, vegetation, and road stability. Also beneficial is the continued protection of the soils within the Ione Tertiary Oxisol Soils ACEC.

4.2.3 Impacts of Other FFO Programs' Proposed Actions on Soils

Soil quality and productivity can be degraded by human-related activities such as high-impact recreational use, livestock grazing, development (e.g., roads, ROW corridors), industrial level mineral extraction, and wildfire suppression. These activities often result in increased soil erosion or compaction. Soil erosion and compaction can lead to decreases in soil fertility, water infiltration and retention, and vegetative cover. These conditions may, in turn, cause secondary impacts such as sediments entering streams and lakes. Changes in the type, extent, or intensity of these human-related activities can affect their impacts on soils.

Livestock Grazing

Under all of the alternatives, soil protection is mandated by Central California Standards and Guidelines for Livestock Grazing, which specifies that soils should “exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form.” This means that, “Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.” If this standard is not being met, and livestock is determined to be the cause, the FFO must take actions on those allotments to improve soil conditions. This standard sets minimum criteria that apply to all of the alternatives. Generally the removal of vegetation by grazing creates more bare ground where soil surfaces experience direct raindrop impact and soil particles are dislodged. Hooves also compact moist soil and loosen clods. The amount of public land grazed would increase under Alternative C with a corresponding increase in animal numbers. Regardless of the intensity of FFO management of grazing, increased adverse impacts to soils would be expected. Among all of the alternatives, Alternative C can be viewed as having the greatest adverse impact on soils. Because the intensity of grazing would not increase, these impacts would probably be minor and localized. Alternative B would have the least adverse impacts because grazing leases would be reduced. Alternative D would be intermediate between alternatives B and C.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Depending on scale, intensity, duration, and time of year, motorized vehicle/OHV use has the potential to impact soils. Vehicles on dirt roads displace soil particles. When roads are wet, vehicles can cause soil compaction. On vulnerable wet roads, vehicles can create ruts that can reroute drainage and lead to the formation of gullies. Ruts also influence the route driven by drivers who follow, often leading to the widening of roads and impacts to other soils. Off-road vehicle travel can have all of the same negative effects on soils, as well as damaging vegetation, which causes indirect impacts to soils. Compaction and rutting are even more likely in off-road situations. If high-impact use occurs in areas near streams or other aquatic habitat, soil erosion could increase sedimentation and turbidity, therefore decreasing water quality and adversely affecting aquatic habitat.

Alternative A would continue to allow all FFO-managed lands within the Sierra Planning Area to be open to OHV/motorized vehicle use (including off-road use), unless specifically closed. All the other alternatives would limit OHV/motorized vehicle use to existing routes. Under Alternatives B and D a limited number of those existing routes would be designated as “open,” all other routes would be “closed.” Under Alternative C, all existing open routes would remain open (i.e., existing routes that had not been previously designated as closed would remain open). Under Alternative A, impacts to soils from OHV/motorized vehicle use would be greater than under any other alternative because vehicle use would be allowed over the largest area.

Alternatives B and D would designate specific existing routes open for motorized vehicle/OHV use. This designation would limit motorized vehicle use to certain routes, reducing the potential for adverse impacts to soils. No off-road travel would be permitted. Under these alternatives, soils outside designated areas would remain undisturbed due to no new routes being created and some existing routes, (i.e., those routes that are not designated as “open”) being eliminated and allowed to revegetate. Of the four alternatives, Alternatives B and D would limit motor vehicle use to a specified route network and therefore, would most beneficially impact soils.

Alternative C would make all existing, open routes available to motorized vehicle/OHV use. In theory at least, no motorized vehicle use would be allowed in new areas. Alternative C, because it disallows off-road use, would limit adverse effects to soils relative to Alternative A that allows off-road use in most areas. Alternative C, because it limits motorized vehicle/OHV use to existing routes, appears to be relatively benign in its effects on soils. However, because of enforceability issues (see above), Alternative C is likely to lead to a proliferation of new unauthorized trails displacing vegetation and adversely impacting soils. Also, by allowing more vehicle-access to more areas, Alternative C is likely to facilitate more unauthorized off-road use of vehicles than would occur with Alternatives B and D. Because it makes vehicle use so much more difficult to regulate, Alternative C would allow more adverse impacts to soils compared to Alternatives B and D.

Recreation

Recreational activities and the construction of recreation facilities, can impact soils by causing erosion, compaction, or by disturbing soil structure (e.g., grading).

Alternative A continues already planned recreational developments, including those that appear in approved plans such as the South Fork American River Management Plan. Because Alternative A has no new designations, no SRMAs are created. Overall, it is likely there would be less recreational development under Alternative A than under any of the other alternatives, with a corresponding lessening of soil disturbance. With fewer facilities, recreational use may be somewhat diminished as well. On the other hand, with less development of facilities, the recreation that occurs can be less structured and more destructive. For instance, where riders perceive that trails are inadequate, they sometimes develop ad hoc trails by repeatedly using the same routes (versus a trail that was

deliberately designed and constructed), which can lead to trails that deteriorate quickly and cause substantial soil erosion.

Compared to alternatives C and D, Alternative B most limits recreational use because of its emphasis on environmental protection. This alternative would limit trail development and access in specified sensitive areas within the planning area. Because less facilities would be developed and less recreational activity would occur, Alternative B would decrease soil erosion and compaction and provide the most overall protection to soil resources.

Alternative C would provide for the greatest development of visitor facilities and allow the most recreational use among all of the alternatives, and it would create the largest number of SRMAs. Among all of the alternatives considered, Alternative C would cause the most soil disturbance associated with recreation facilities and activities.

Alternative D resembles Alternative B in terms of the number of SRMAs created; i.e., both of these alternatives do not include a Red Hills SRMA, instead prioritizing the unique biological values of the Red Hills ACEC. Alternative D resembles Alternative C in its approach to the North Fork American River SRMA. Alternative D calls for increased visitor facilities, greater availability of commercial permits, and the potential for target shooting. Alternative B for the North Fork American River SRMA is more restrictive in all of these areas. Because of its intermediate approach, Alternative D would allow for more soil disturbance than Alternative B but less than Alternative C.

Special Recreation Management Areas

Under Alternative A, no new SRMAs would be proposed. Alternative B places an emphasis on the preservation of natural and cultural resources. SRMAs would be a secondary priority under this alternative. The South Yuba, North American, South Fork American, and Merced rivers would be placed into SRMAs.

Although the Red Hills ACEC is popular for horseback riding, it would not be designated an SRMA under Alternative B. This would ensure that protecting the rare plants that occur in the Red Hills would be given priority at the ACEC. Alternative B would limit surface disturbance and, therefore, decrease the chance of soil erosion and compaction.

Alternative C would increase public access and use of FFO-managed lands by emphasizing recreation. The South Yuba River, North Fork American River, South Fork American River, and Merced River corridors and the Red Hills ACEC would be placed into SRMAs. Opportunities for recreation activities appropriate to the SRMA would be enhanced and, therefore, soil disturbing activities would be likely to increase, with adverse impacts to soil stability and structure.

Alternative D would balance recreational use of FFO-managed lands with environmental protection. Recreation opportunities would focus on public lands along the South Yuba, North Fork American, South Fork American, and Merced rivers. These four areas would be placed into SRMAs. With enhanced recreation opportunities, there is a chance of

increased soil disturbance. Because the Red Hills SRMA is omitted from Alternative D, there would be less soil disturbance in the Red Hills under Alternative D than under Alternative C. Overall, adverse impacts to soils from recreation would be similar under Alternatives C and D. But a unique serpentine soil that has been identified as a key Red Hills ACEC resource value would be less adversely affected under Alternative D than under Alternative C.

Special Designations

ACECs

ACEC designation allows focused management to occur in a designated area, protects and enhances the natural and/or cultural resource values for which the ACEC was set aside, and minimizes detrimental impacts. The ACEC designation does not imply any specific management actions. Management is laid out in an ACEC management plan and can be tailored to the specific resources or hazards that inspired designation. Most of FFO's existing and proposed ACECs are intended to conserve special status species or unique ecosystems. Management actions for these ACECs might include limiting or changing the timing or location of various activities that might affect the plants and animals to be conserved. Grazing, mining, recreation, and OHV/motor vehicle use might be affected. Generally ACEC designation would have long-term, beneficial impacts on soils by reducing surface disturbance.

All alternatives would maintain the existing ACECs. Alternatives A and C would not designate any new ACECs. ACEC designation can reduce adverse impacts to soils. Writing a ACEC management plan is an opportunity to pull together current scientific information and to specify what soil disturbing actions will and will not be allowed in the ACEC.

Alternative B would designate six new ACECs, as discussed further in the special designations section. Four of these ACEC's include significant special status plant habitat, and, in each and every case, the vegetation is tied to unusual soils. Soils would also benefit from the expansion of three existing ACECs, two of which have unusual soils that have been identified as important ACEC resources. By designating the highest number of ACECs, Alternative B would most beneficially impact soils.

Alternative D would designate five of the six new ACECs proposed under Alternative B, except the Yuba Brownsville ACEC, and would expand three existing ACECs. The Mildred series soils of the Yuba Brownsville area would not receive ACEC protection under Alternative D, as they would under Alternative B. Otherwise, like Alternative B, Alternative D would produce long-term, beneficial impacts to soils.

ACEC Use Restrictions

All alternatives would maintain the existing ACECs, and Alternatives B, C, and D would include general use restrictions that would apply to these existing ACECs, additions to these existing ACECs, and any new ACECs. In addition, specific restrictions would be

applied to the Red Hills and Pine Hill Preserve ACECs. These additional restrictions are designed to reduce disturbance and further protect the special status plant species and rare soils of these areas.

General use restrictions proposed for all of the ACECs would help protect ACEC values. These restrictions are designed to limit disturbance and would benefit soils for that reason. For instance, under these use restrictions, a ROW through an ACEC that could potentially impact the values that lead to ACEC designation would not be issued. Similarly, cross-country OHV use would not be allowed to irreparably damage ACEC values.

The general use restrictions proposed for the Pine Hill Preserve ACEC (and other ACECs) restricts rights-of-ways to areas that lack the values for which the ACEC was designated. This provision would directly affect a potential road project that has been discussed by some members of the public. There is interest in widening and paving a road that crosses BLM-administered land within the Pine Hill Preserve along Highway 50, a project that would effectively destroy a swath of gabbro soils. Alternatives B and D, which include the Pine Hill Preserve ACEC, would prevent this adverse impact to these unusual soils.

Specific use restrictions for the Red Hills ACEC and the Pine Hill Preserve ACEC proposed under alternatives B and D prevent horse and mountain bike use off of existing trails and the construction of unauthorized trails. These provisions would prevent adverse impacts to soils from soil disturbance. Camping in summer poses a wildfire threat. Wildfire can lead to direct and indirect impacts (from fire suppression) to the soils of these areas.

Wild and Scenic Rivers

The designation of wild and scenic rivers focuses management on the specific outstandingly remarkable values and free-flowing conditions of certain rivers segments. The FFO would be required by law to maintain free-flowing conditions and outstandingly remarkable values of rivers with wild and scenic status. The FFO would not allow the river to be modified by impoundments, diversions, channelization, riprap, or any other modification of the waterway. Adverse impacts to soils from these modifications could include inundation and grading that occurs in the course of building water projects. Therefore, such designations that maintain the natural conditions of rivers would benefit soils.

Under Alternative A, the FFO would not recommend to Congress any new rivers as suitable for wild and scenic river designation. This lack of additional designation could have adverse impacts on soils if projects occur that would not have occurred with wild and scenic designation.

Under Alternative B, the FFO would recommend to Congress seven new rivers as suitable. This alternative would provide long-term, beneficial impacts to soils of a large

number of watersheds by protecting natural resources and restricting potential adverse impacts, as discussed above.

Under Alternative C, the FFO would recommend to Congress one new river because of its remarkable recreational and cultural resources values. This alternative would provide less beneficial impact to soils than either Alternative B or D.

Under Alternative D, the FFO would recommend to Congress two new rivers because of their outstandingly remarkable recreation, cultural, scenic, and water quality values. These designations would benefit soils as discussed under Alternative B, but to a lesser extent. The wild and scenic river proposed actions of this alternative benefits soils only slightly more than Alternative C.

Lands and Realty

Land Tenure Adjustment

Alternatives B would focus acquisitions of land on areas with high biological resource value, such as vernal pools and land within or adjacent to ACECs focused on special status plants and rare plant communities. This would have long-term, beneficial impacts on soils by increasing the protection of rare soils with the unusual characteristics that support these rare plant communities. Alternative D would also make acquisitions for biological resource values a priority, but, because Alternative D includes other competing priorities, it would not be as beneficial to soils as Alternative B. Alternative C does not make biological resources a priority for acquisition, and it would be less beneficial for soils than Alternatives B and D.

Mineral Withdrawals

Alternatives B and D would propose the withdrawal from mineral entry of all ACECs, wild and scenic river corridors, and the Yuba Goldfields. ACEC designation by itself gives the FFO greater oversight of mining claim operations, because in ACECs all mechanized mining and other activities exceeding casual use are conducted under a plan of operations subject to FFO approval. Wild and scenic river designation has similar effects on mining claim operations. (Wild and scenic river segments classified as “scenic” or “recreational” also require plans of operation. River segments classified “wild” are automatically withdrawn from mineral entry.) Mineral withdrawals would prohibit new mining claim location in the withdrawn area, thereby reducing the probability of adverse impacts to soils from mining. Preexisting claims can remain active. However, for mining operations to proceed under a preexisting claim after an area is withdrawn from mineral entry, BLM must approve a plan of operations, and BLM plan approval requires a determination of a “valid existing right” through a validity exam. The validity exam is a procedure that assesses the economic viability of mining the site. Many FFO ACECs contain rare soil formations that are easily and irreparably damaged by mineral development. It is unlikely that mining will occur on withdrawn land because once an area is withdrawn from mineral entry, mining can only occur if there is a preexisting claim, and that claim is determined to be valid, i.e., economically viable.

Alternatives B and D propose extensive mineral withdrawals and would do the most to limit adverse impacts on soils, especially the unusual soils of many of the FFO's ACECs.

Wildland Fire Ecology and Management

Periodic low-intensity wildfires are essential to the health of certain ecosystems. Whole plant communities, such as chaparral, have adapted to periodic fires. Although wildfires are a natural ecosystem process, high-intensity wildfires caused by extreme weather, artificially enhanced fuel loading from fire suppression, or human negligence can remove all vegetation, leading to greatly accelerated rates of erosion. High-intensity fires can burn vegetation and organic matter down to bare earth. Extreme heating at the soil surface can produce a hydrophobic layer in soils that repels water, causing sheeting of water and accelerated erosion lower on the slope. In some ecosystems, invasive species have become dominant when the usual competitive advantage of native perennial species has been reduced or eliminated following intense wildfires. Often, these are annual species with less ability to bind soils, which again fosters soil loss through erosion.

Prescribed fire could sometimes result in short-term, adverse impacts to soils in the form of accelerated soil erosion. However, long-term, beneficial impacts include reduced risk of severe wildfires, the recovery of a healthy native plant community that maintains soil stability, and a reduction of noxious weeds that often do little to bind soil particles.

All alternatives would implement and maintain the FFO's Fire Management Plan. In addition, Alternative A would use prescribed burns for fuel hazard reduction and would employ wildfire suppression methods that have the least impact on resource values within specified modified suppression zones. Soils are identified as resource values at the Red Hills ACEC, the Ione Soils ACEC and the Ione Manzanita ACEC.

Alternative B would prioritize fuel reduction projects that would improve significant biological resources. Among all the alternatives, alternative B would be most beneficial to the unusual soils that support many rare plant species and plant communities because of a reduction in the likelihood of severe wildfires, have the potential to do greater damage to soils, directly or through the effects of fire suppression.

Alternative C would prioritize fuel reduction projects in high-density recreation areas and communities at risk. These fuel reduction projects would be likely to benefit mostly common soils.

Alternative D would prioritize fuel reduction projects to benefit communities at risk, for habitat enhancement, and in High Use recreation areas. Long-term beneficial impacts to unusual soils that support special status species would be the same as under Alternative B for those projects undertaken to improve special status species habitat. However, fewer firefighting resources would be dedicated to burning for the enhancement of biological resources under this alternative than under Alternative B; so the benefit to rare soils would be less under Alternative D than under Alternative B.

Modified suppression plans would continue to be used under all of the alternatives. However the alternatives with more special designations, such as Alternatives B and D, are better situated for the addition of new modified suppression plans to cover these additional special designation areas. If CDF agrees to these additions, the modified suppression plans under Alternatives B and D would encompass more acreage and affect more special status species habitat than the modified suppression plans under Alternatives A and C. Therefore, under Alternatives B and D, more special soils would be included under modified suppression plans. Generally under modified suppression plans, fires are fought less aggressively to avoid or lessen long-term impacts. Under Alternatives B and D, potential short term adverse impacts to soils would include larger fires and more widespread loss of vegetation, with the potential for accelerated erosion over a larger area. Long-term impacts of increased modified suppression plans would be a closer approximation of natural fire cycles, a more natural mosaic of different-aged stands of vegetation, and less long-term modification of soils due to heavy equipment use during standard fire suppression. Most dozer operations permanently alter soils by destroying soil structure, and, if not properly rehabilitated, dozer lines can lead to severe accelerated erosion, including gullying.

Visual Resource Management

The VRM class system was developed to guide the management of public lands, especially those lands with notable and important visual resources (i.e., viewsheds, landscapes, etc.). The land manager assigns an area a VRM class (I to IV) according to the visual resource management goals for that area. The class can be higher or even lower than the actual existing condition, depending on the land manager's goals for the area. A high VRM class (I or II) reflects a strong desire to protect or enhance visual resources of the area. Conversely, a low VRM class means that the land manager is less likely to protect the area's visual resources.

Under Alternative A, few areas under FFO management have been assigned a VRM class because the system was not in use during the last major plan amendment. Visual resources are considered mainly on a case-by-case basis. The FFO is required to maintain the outstanding visual resources of Congressionally designated wild and scenic river corridors, including the North Fork American, the Tuolumne, and the Merced (wild section). The FFO manages these corridors according to Class I standards. This has beneficial impacts on a wide range of resources, including soils in these corridors aside from the visual qualities. The FFO is less likely to allow projects in this area that typically degrade visual resources. These projects could include major quarrying operations, the construction of high voltage power lines, or the building of large-scale roads. Many such projects can have direct adverse impacts on soils.

Under Alternative B, the FFO would manage the largest amount of public land according to VRM Class I and Class II standards. All FFO-managed land within the planning area would be given either a Class I or Class II status. This would have the greatest beneficial impact on soils as well as water, special status species, vegetation, and other environmental resources. The FFO would be unlikely to allow projects that could potentially degrade visual resources on the lands it manages. Under Alternative C, the

FFO proposes the least amount of Class I and Class II lands. In fact most FFO-managed land would be managed according to Class III standards, which allow the field office considerable flexibility in allowing project that could degrade visual resources and other environmental qualities like soils. This is potentially good for resource use but allows the most adverse impacts to the environment. Alternative D is intermediate to alternatives C and B.

4.2.4 Impacts of Other Programs' Proposed Actions on the Environment and Other FFO Programs

The soils program's proposed actions are expected to have a beneficial impact on the environment. There may be minor, short-term impacts on motorized vehicle travel and livestock grazing on FFO-managed land as a result of the proposed actions.

4.2.5 Cumulative Impacts

Soil erosion has the possibility of producing cumulative impacts by affecting water quality or causing sedimentation. Erosion is a function of soil particles becoming dislodged, then being transported by wind or water. It occurs naturally over time, but it can be accelerated greatly by human influences such as road construction, other grading, removal of vegetation, motorized vehicle traffic on unpaved surfaces, grazing, and water gaining volume and velocity by collecting on impervious surfaces such as building roofs or paved roads and parking lots. Adverse impacts to water occur when displaced soil particles are transported in surface water, thereby affecting water quality for drinking purposes, or the quality of habitat for aquatic organisms.

The management actions affecting soils under the soil, water, and air management programs aim to improve the quality and management of the soil resource. Cumulative impacts occurring as a result of any of the soil management alternatives would be beneficial to the health and productivity of soil resources.

Cumulative impacts from the proposed actions under other FFO programs would vary depending on the alternative selected. Because many activities can affect soil erosion, including recreation, grazing, roads, and vegetation management, the cumulative impacts resulting from management actions under other FFO programs can vary greatly.

FFO actions that produce erosion may negatively impact water resources on adjacent lands. These impacts, as described above, would be minimized through best management practices and project-specific planning. Alternative B promotes low intensity recreation and reclamation of redundant roads, and discourages soil-disturbing activities in sensitive areas, especially those that would come under special designations with this alternative. This alternative would result in the fewest cumulative impacts because it would reduce erosion and sediment yield. Alternatives C and D allow additional soil-impacting activities and, therefore, would result in greater cumulative impacts. Because Alternative C allows the most intensive level of soil-disturbing activities, it has the greatest potential to result in adverse cumulative impacts on soil resources.

4.3 Water Resources

4.3.1 Introduction

Refer to Section 2.3 for the proposed water management actions under each alternative and to Section 3.3 for a description of existing water resource conditions in the Sierra Planning Area.

For ease of reference, the management goal for water is:

- Restore and maintain the ecological health of watersheds and aquatic ecosystems on FFO-managed lands and, to the extent possible, partner with other landowners and stakeholders to coordinate restoration efforts across watersheds.

4.3.2 Impacts of the Water Resources Program's Proposed Actions on Water Resources

Under all of the alternatives, the proposed actions would require the FFO to protect water resources. Under Alternative A, the proposed actions direct the FFO to protect water resources from siltation and sedimentation that could result from road development and maintenance. These actions would have a beneficial impact on water resources.

Alternative A also directs the FFO to quantify in-stream flow in the South Yuba River. This action would also have beneficial impacts on water resources because it would provide data needed to determine optimal flow regimes for riparian vegetation, fish, and other wildlife: maintaining overall ecosystem health is critical to maintaining water quality.

Under Alternatives B, C, and D, the common management actions would aim to protect water quality by controlling road- and trail-related erosion. These actions would have a beneficial impact on water resources. Compared to Alternative A, the proposed actions common to Alternatives A, B, and C represent a more defined and proactive approach to protecting water quality.

4.3.3 Impacts of Other FFO Programs' Proposed Action on Water Resources

Special Designations

ACECs

Designation of ACECs typically benefits water quality. ACECs designated to protect environmental resources usually receive increased management attention. In the planning area, the FFO would restrict significant soil disturbing activities in ACECs that could adversely affect the ACEC values. This would increase protection of water resources in these areas. Alternatives A and C would provide benefits to water quality in the six existing ACECs. There would be no new ACECs designated under these

alternatives; so there would not be the benefits to water quality expected to occur in the ACECs or ACEC additions proposed under the other alternatives.

Under Alternative B, seven areas would be designated as ACECs, and three existing ACECs would be expanded. Some of these areas contain significant water resources. For example, water quality is critical to maintain at Spivey Pond, which provides habitat for the federally listed California red-legged frog. With greater protection of these areas (afforded by ACEC designation), the chance for adverse impacts to water quality is decreased. Alternative B would provide the greatest long-term beneficial impacts to water quality generally among the alternatives because it includes the most proposals for new or expanded ACECs.

Under Alternative D, the FFO would designate six new ACECs and expand three existing ACECs. Alternative D includes all of the same ACEC proposals as Alternative B, except for the proposed Yuba Brownsville ACEC. Alternative D would have greater beneficial impacts on water quality than alternatives A and C, but slightly less than Alternative B.

Wild and Scenic Rivers

The designation of wild and scenic rivers benefits water quality. Wild and scenic status protects the free-flowing condition of a river. Reservoir construction, which would be precluded by wild and scenic status, usually increases sedimentation from massive bank disturbance, and it is possible for sediments and other contaminants to become trapped within the reservoir. Outstandingly remarkable values such as scenery, plants, animals, and geological formations would also be protected and enhanced. This indirectly benefits water quality in a wild and scenic river corridor.

Under Alternative A, the FFO would not recommend any new wild and scenic rivers for designation. This alternative would benefit water quality only in river corridors currently designated as wild and scenic, but would not provide benefits to water quality in the wild and scenic river corridors recommended under the other alternatives.

Under Alternative B, the FFO would recommend seven new wild and scenic rivers for designation. This alternative would provide the most beneficial impacts to water quality because it proposes the most new wild and scenic rivers.

Under Alternative C, the FFO would recommend one new wild and scenic river for designation. Accordingly, this alternative would result in benefits to water quality at a level more than Alternative A, but less than alternatives B and D.

Under Alternative D, the FFO would recommend two new wild and scenic river corridors for designation. One of the corridors, the North Fork/Main Stem of the Mokelumne River, has outstandingly remarkable water quality values that would receive additional management attention if the corridor were to receive wild and scenic status. This alternative would result in more benefits to water quality than alternatives A and C, but less so than Alternative B.

Recreation (SRMAs)

The ROS zoning strategies for each proposed SRMA would enhance river-oriented recreation. The proposed ROS zoning is discussed in the recreation sections (especially 2.15). In all of the SRMAs, ROS zoning would create relatively large areas that would be managed specifically for remote use. High Use and Transitional Use areas would be confined to relatively small areas at key access points and along hiking trails. The proposed ROS strategies are generally beneficial to water and other environmental resources because river-oriented recreation generally has little if any impact on the environment. The low use areas would see little use compared to the High Use areas. Recreation activities like rafting, hiking, nature viewing, backcountry camping, etc., in remote use areas generally would not adversely impact water resources. Most visitors would visit the proposed High Use areas. These areas (campgrounds, parking areas, day-use areas, boat launches, etc.) are relatively confined and receive considerable management attention (FFO ranger patrols, routine maintenance, monitoring, etc.). Protection of water quality and other environmental resources is a high priority in these areas. The FFO carefully plans recreational development in these areas using best management practices to avoid or minimize impacts on water resources. Trails in transitional areas are also planned and built using best management practices. OHV use and other kinds of high-impact recreation would be prohibited or extremely limited within the proposed SRMAs.

With regard to water resources, all of the recreation-related proposed actions under alternatives B, C, and D would probably have beneficial impacts on water resources. Alternatives B and D provide the most emphasis on low-impact recreation and limited development of trails and other recreation infrastructure; therefore, these alternatives would be the most protective of water resources.

Hazardous Materials/AML

Under all of the alternatives, remediation projects at AML sites would be implemented. The highest priority would be given to AML sites near High Use areas such as developed campgrounds and recreation areas, near residences on adjacent private property, AML sites shown to be significantly impacting water quality, and AML sites close to frequently traveled routes on FFO-managed land. Mercury in selected hydraulic mine sluice tunnels would be cleaned up. These alternatives would improve water quality and therefore have a major beneficial impact on water resources.

Lands and Realty

Land Tenure Adjustment

Regardless of the alternative, the FFO would focus its acquisition efforts on major river corridors. The FFO would seek to expand and consolidate its holdings in river canyons such as the Merced, North Fork American, and South Yuba. The protection afforded to these lands by FFO would be beneficial to the rivers, which are significant water resources.

Under Alternative A, the FFO would continue to consolidate land in wild and scenic river corridors, popular recreation areas, preserves, and ACECs. This would usually be riverfront land, special status plant or animal habitat, and access points to FFO-managed river segments. Depending on how the acquired lands would be managed, Alternative A could result in beneficial impacts to water quality in these areas.

Under Alternative B, FFO's land tenure adjustment strategy would emphasize environmental protection. For example, additional land on Table Mountain near New Melones Reservoir would be acquired to protect vernal pools and swales. The FFO would continue to try to expand its ACECs and Preserves. The Pine Hill Preserve would continue to be an important acquisition area. Alternative B would result in major beneficial impacts to water quality because these land tenure adjustments are intended to acquire and protect significant water resources, such as Central Valley wetlands and vernal pools.

Under Alternative C, lands would be acquired to increase and enhance recreation opportunities (i.e., SRMA access, trail access, trail development, and white water rafting access, etc.). Many of the most popular recreation areas managed by the FFO are located along major rivers, including those within Congressionally designated wild and scenic river corridors. The FFO manages recreation in these areas to protect river resources and provide river-oriented recreation. Lands acquired within river corridors would be protected by the FFO. This management strategy would result in beneficial impacts to water quality, but less so than alternatives B and D.

Under Alternative D, the FFO would acquire lands with both outstanding environmental resources and recreation resources. Wild and scenic river corridors and other popular river canyons would be the targeted acquisition areas. The FFO would also continue to grow its preserves and ACECs. Alternative D would result in the most beneficial impacts to water quality as a result of land tenure proposals.

ROWs and Other Land Use Authorizations

Under the all of the alternatives, ROWs and other land use authorizations would be issued on a case-by-case basis, averaging about 50 per year. Some cases would involve the construction of new roads to create ROWs. With road construction (and improved access to FFO-managed lands), there is a greater chance of adverse impacts on water resources. Construction and use of roads for motorized vehicle use increases the chance of erosion of sediments into streams and other water resources. Under Alternative B, ROWs and other land use authorizations would still be addressed on a case-by-case basis; however, authorizations may decline due to potential conflicts with environmental resources. The FFO would be more likely to turn down a ROW proposal to protect water resources. Alternative B would therefore have less impact on water resources.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Under Alternative A, all FFO-managed land would be open to motorized vehicle/OHV use, except where previously closed by a FFO action. In many areas, OHV users could

potentially go off of existing routes and drive cross-country. This would likely increase soil erosion and compaction, therefore, adversely impacting water quality.

Alternatives B, C, and D would limit motorized vehicle/OHV use to routes that have not been previously closed. The limiting of motorized vehicle/OHV use would decrease the chance for soil erosion and compaction, and would result in beneficial impacts to water resources.

Alternatives B and D provide the most restrictions on motorized vehicles/OHV use; their use would be limited to designated routes only. Therefore, these alternatives are the most protective of water quality degradation caused by sedimentation and pollutant loading that often results from intensive motorized recreation activities (such as cross-country driving). Alternatives B and D would have the greatest benefit to water resources.

Livestock Grazing

Livestock grazing can affect watershed function by decreasing plant diversity and vegetation cover. Overgrazing can lead to soil compaction, reduced vegetative cover, and increased erosion of sediments into nearby streams and other water resources. Under all of the alternatives, the FFO would continue to comply with the Rangeland Standards and Guidelines, NEPA, and other authorities in managing its grazing leases. The FFO would conduct rangeland assessments to identify adverse impacts on water resources and determine ways to stop, reduce, or minimize these impacts.

Alternative C allows for the highest acreages available for grazing among the alternatives and emphasizes grazing as a tool for hazardous fuels reduction. Regardless of how closely the FFO monitors grazing under the Alternative C management scenario, soil compaction/erosion and the introduction of fecal matter into water resource would probably occur in some areas. Alternative C would be expected to have the most adverse impacts on water resources of any of the alternatives. Alternative B decreases grazing on FFO-managed lands. It would have the least impact on water resources. Alternatives A and D are intermediate.

Energy and Minerals

Energy and minerals development can impact water quality through sedimentation and accidental introduction of contaminants. Minerals development can also impact groundwater quality and quantity.

The FFO's energy and minerals program would operate the same under all of the alternatives, and the impacts, under each alternative, would be similar. Alternative C presents the greatest number of opportunities for mineral development in the planning area, and thus might cause the greatest adverse impacts on water resources, though this is unlikely. Under Alternative C, 39,000 acres of high potential oil and gas lands within national wildlife refuges would be available for lease. These refuges contain important wetland habitat and could be affected. However, the refuges would be leased under the no surface occupancy stipulation. Surface drilling facilities would have to be located

outside of the refuge. Also, leasing within national wildlife refuges would be extremely rare. The reasonably foreseeable development scenario for oil and gas development in the planning area forecasts a very low number of leases. Impacts to water resources could occur but would probably be negligible.

Under all of the alternatives, sand and gravel in the Yuba Goldfields would be available for sale and extraction. Extraction of this economically important resource would be conducted in a way that attempts to restore wetlands and riparian areas that likely existed along the Yuba River prior to the advent of dredge mining in the early 1900s. In other words, the FFO-managed lands here would be restored ecologically through mining and mining reclamation. The short-term impacts of sand and gravel extraction on water quality would probably be moderate and adverse. There could be erosion of sediments into the Yuba River. The long-term impact to water resources could be extremely beneficial depending on how the restoration/reclamation work progresses.

Forestry

Under Alternative C, timber production would increase above the current level as well as the levels proposed under alternatives B and D. The increase in timber production would require the FFO to put more emphasis on plantations and other reforestation projects. Increased timber production could result in minor adverse impacts on water resources resulting from increased soil erosion and sedimentation usually associated with timber harvesting activities. Alternatives A, B, and D would reduce the potential for impacts on water resources. Alternative B would direct the FFO to manage its forestry resources in a way that moves these resources towards old growth conditions. This management strategy would reduce the possibility of ground disturbance caused by green timber sales. The FFO would treat its forests as a plant community worth preserving and restoring to a natural state. This would probably have a beneficial long-term impact on water resources.

Wildland Fire Ecology and Management

The FMP would be adopted under all of the alternatives. This plan lays out strategies for fighting fire and controlling fuels in areas managed by the FFO. Under the FMP, prescribed fire would be used to mimic the natural role of fire in ecosystems to enhance values and to reduce the risk of catastrophic wildfire in ACECs, wild and scenic river corridors, and other areas with sensitive cultural and biological resources. Wildfire suppression methods that have the least impact on the landscape would be used in these areas. This strategy would probably result in beneficial impacts to water quality.

Under Alternative B, fuels projects would be designed specifically to benefit biological resources and sensitive cultural resources. The goal would be to improve overall environmental health. Fuels projects would be done to enhance the FFO's preserves, ACECs, and other areas with important environmental resources. This management emphasis would probably have some adverse impacts on water resources. These impacts would be minor and short term. Removal of dense brush and other fire-prone vegetation might cause minor erosion of sediments into nearby streams and other water resources.

In the long term, however, there would likely be moderate beneficial impacts on water resources. Improving the overall health of the environment would likely decrease the potential for sediments to erode into streams and other waters.

Under Alternative C, the FFO would give priority to protecting communities at risk. This emphasis would likely have some short-term adverse impacts on water resources. These impacts would be minor and perhaps negligible. The long-term benefits would not be as great as under Alternative B.

Under Alternative D, fuel reduction projects would be done to benefit both communities at risk and areas with sensitive environmental resources. Again, the short-term impacts on water resources would be minor, but the long-term impacts would likely be very beneficial, though less so than under Alternative B.

4.3.4 Impacts of the Water Resources Program's Proposed Actions on the Environment and Other FFO Programs

The water resources program's proposed actions are expected to have a beneficial impact on the environment. There may be minor, short-term impacts on motorized vehicle travel and livestock grazing as a result of the water resources program.

4.3.5 Cumulative Impacts

Cumulative impacts on water resources would probably not occur in the planning area, at least not as a result of the FFO's proposed actions under the water resource program. The FFO is a leader in river management, and all of the alternatives are extremely protective of rivers and other important water resources in the decision area. The alternatives, regardless of the program, prevent long-term degradation of water resources.

Continued residential development in the planning area will likely degrade water quality by increasing water volume and producing non-point source pollution. The same is true for continuing forestry activities on private and non-BLM administered federal lands (primarily in national forests); mining activities on private lands; and recreational activities on other lands in the planning area. Degraded watersheds may result in water contaminated with microorganisms, sediments, and toxic chemicals. The State of California, through the state and regional boards, is responsible for ensuring that cumulatively, water quality is meeting standards. The FFO's proposed action to work with the state to ensure required FFO actions conform to its objectives will ensure water quality in the planning area meets standards.

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4.4 Vegetative Communities

4.4.1 Introduction

Refer to Section 2.4 for the proposed vegetative communities management actions under each alternative, and refer to Section 3.4 for a description of existing vegetative communities conditions in the Sierra Planning Area.

For ease of reference, the Chapter 2 management goal for vegetative communities is:

- Promote a healthy and diverse mix of plant communities, and provide a wide spectrum of organisms, ecosystem processes, and human resource needs that depend upon these plant communities.

4.4.2 Impacts of the Vegetative Communities Program's Proposed Actions on Vegetation

In general, the proposed actions would protect or enhance vegetation and would be expected to have beneficial impacts on vegetation. All alternatives contain proposed actions that would prevent, eliminate, and control invasive nonnative vegetation in selected areas and would implement national BLM policies consistent with the Interior Department's Partners Against Weed Initiative and Executive Order 13112. In addition, Alternative A would fence livestock to protect riparian areas and enhance riparian areas.

Alternatives B, C, and D would improve habitat conditions for special status species through vegetation manipulation of specific habitats. In addition, these alternatives would use prescribed fire, mechanical mastication, herbicides, manual removal, or combinations of each to promote healthy and diverse vegetation.

Alternative B would control and eradicate noxious weeds in important habitat for special status species. In addition, Alternative B would conduct water management in the Cosumnes River Preserve. Alternative B would have long-term, beneficial impacts to vegetation by controlling noxious weeds and improving habitat.

Alternative C would control and eradicate noxious weeds in areas of high recreational use and consumptive uses. Because areas of high recreational and consumptives uses are less likely to contain uncommon biological resources, this alternative would provide less beneficial impacts to rare plant communities than Alternative B.

Alternative D would inventory, control, and monitor weeds in important habitat for special status species and areas of high recreational use. In addition, Alternative D would conduct water management on designated wetland management units in the Cosumnes River Preserve and construct fences to keep livestock out of riparian areas. This alternative would have long-term, beneficial impacts to vegetation by controlling noxious weeds and improving habitat. Because funds for weed control and other vegetation management would be divided between areas benefiting recreation and areas benefiting

wildlife and native plant communities under Alternative D, less funds would be available to enhance native ecosystems with Alternative D, relative to Alternative B.

4.4.3 Impacts of Other FFO Programs' Proposed Actions on Vegetative Communities

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Depending on scale, intensity, duration, and time of year, OHV/motorized vehicle use and other high-impact recreational activities have the potential to impact vegetation. Driving off road almost always damages vegetation. In the planning area, virtually all soils support some form of vegetation. Many existing vehicle trails serve no present purpose. Some were created for a one-time need (e.g., access for a timber sale) or by recreational drivers looking for new places to travel. Many of these trails revegetate naturally until they are disturbed again by sporadic recreational use. Potential adverse impacts to vegetation may include direct mortality, plant injury, alteration of plant community structure, noxious weed or undesired non-native species introduction, soil compaction and erosion, and dust which could decrease plant transpiration and photosynthesis.

Alternative A would continue to allow all FFO-managed lands within the Sierra Planning Area to be open to OHV/motorized vehicle use, except those areas closed or limited by past FFO actions. Because more than 80% of FFO-managed lands are presently open to vehicle use, impacts under Alternative A on vegetation would be greater than under any other alternative. Depending on the extent and intensity of OHV/motorized vehicle use and the potential for increased use and new trail construction, there would be adverse impacts to vegetation as discussed above.

Under Alternatives B, C, and D, most FFO land would be designated to allow "limited" OHV/motor vehicle use. Under these alternatives, motor vehicles would have access to some or all existing routes on FFO-managed land, but not to those routes that have been closed by a previous FFO action. Under Alternatives B and D routes in this large "limited" zone would be "closed unless designated open." Under Alternative C, routes would be "open unless designated closed."

Alternatives B and D would limit motorized vehicle use to designated routes. Because these alternatives would limit use to specific existing routes, the potential for adverse impacts on vegetation would be substantially reduced. No off-road travel would be permitted. Under these alternatives, vegetation outside designated areas would remain undisturbed due to no new routes being created and the elimination of some existing routes, (i.e., routes that are not designated as open). However, depending on the extent and intensity of trespass OHV/motorized vehicle use, some level of adverse impacts to vegetation would still occur as discussed above. Of the four alternatives, Alternatives B and D would limit motor vehicle use to a specified route network and, therefore, would most beneficially impact vegetation.

Alternative C would make all existing, open routes available to OHV/motorized vehicle use. No OHV/motorized vehicle use would be allowed in new areas. Alternative C, because it limits OHV/motor vehicle use to existing routes, appears to be relatively benign in its effects to vegetation. However, because of enforceability issues (see above), Alternative C is likely to lead to a proliferation of new trails displacing native vegetation. By allowing more vehicle access to more areas, Alternative C is likely to facilitate more illegal dumping, timber, and fuelwood trespass, as well as accidental fire ignitions, all of which can adversely affect vegetation. Alternative C, because it disallows off-road use, would limit adverse effects to vegetation relative to Alternative A. Alternative C would allow more adverse impacts to vegetation when compared to Alternatives B and D because, under Alternative C, it would be very difficult to limit vehicle use to the existing trail network.

Recreation (SRMAs)

Recreation can have adverse impacts on vegetation. Certain types of recreation (like OHV use) can cause direct mortality, injury, alteration of plant community structure, noxious weed introduction, soil erosion, and dust which could decrease plant transpiration and photosynthesis. The proposed SRMA designations would specifically manage recreational use in popular areas like the South Yuba River, Red Hills, and Merced River. The proposed designations could, therefore, have beneficial impacts on vegetation. The designation of SRMAs would focus recreational management to provide particular recreational opportunities, particularly low impact, river-oriented recreation. The proposed SRMAs would have High, Transitional, or Remote Use zones, according to the ROS (discussed in Chapter 2). The proposed zoning strategy helps the FFO appropriately manage recreational uses that could potentially degrade vegetation.

Under alternatives B and D, the FFO would designate four new areas as SRMAs. These areas include parts of the South Yuba River, North Fork American River, South Fork American River, and Merced River. All four areas would be assigned ROS zones. The proposed ROS zoning strategy is similar for all four areas. The proposed SRMAs would include few areas zoned for high and transitional use. Most of the SRMAs would be zoned low use; therefore, adverse impacts to vegetation would be minimal. Because Alternatives B and D propose SRMAs for areas where the demand for recreation is already high, they may limit vegetation damage resulting from uncontrolled public use better than Alternative A, which proposes no new SRMAs.

Alternative C would designate the same four new areas as SRMAs (as mentioned above) as well as designate the Red Hills as an SRMA. The Red Hills is currently designated as an ACEC focusing management on the unique biological resources found in this serpentine ecosystem. Making the Red Hills an SRMA would create a second management focus on recreation. There would be an increase in recreational use and probably an increase in recreation-oriented infrastructure. Both of these could produce adverse impacts on the unique vegetation of the Red Hills, (e.g., indirect effects on plants from soil compaction from increased horseback riding in the wet portion of the year).

Lands and Realty (Land Tenure Adjustment)

Acquisitions of land with high biological resource value, such as land within or adjacent to ACECs, important habitat for special status species, and rare-plant communities would have long-term, beneficial impacts on vegetation by expanding, diversifying, or connecting habitats.

All alternatives would ensure that prior to disposal, lands would be analyzed for significant biological resources. This analysis would be beneficial to vegetation since it would ensure that important vegetation communities and habitats are retained or, in some cases, transferred to another appropriate agency with a conservation mandate and the ability to manage for the long-term.

Alternative A would continue to retain lands of significant recreation or habitat value and would dispose of, acquire, or transfer lands to ensure more efficient management. In addition, Alternative A would consider ROWs on a case-by-case basis.

Alternative B would focus acquisition efforts on land within or adjacent to special designation areas and important habitat for special status species. Other acquisition efforts would emphasize Central Valley wetlands, riparian forest, riverine habitat, vernal pools, and blue oak woodlands. These actions would have long-term, beneficial impacts to vegetation by increasing the acreage of important vegetation communities and habitat managed by BLM and by decreasing fragmentation of habitats. Additionally, Alternative B would approve ROWs and authorize other land uses only if there are no conflicts with sensitive biological resources.

Alternative C would focus acquisition efforts on land within or adjacent to SRMAs and other areas of high public use. Acquisitions under Alternative C would increase land and vegetation under BLM management. However, land adjacent to SRMAs is likely to support common plant communities of less biological significance than the vegetation surrounding ACECs that were designated based on their unique ecosystem characteristics. Therefore, acquisitions under Alternative C would not be as beneficial to rare plant communities as the acquisitions proposed in Alternative B.

Alternative D would focus acquisition efforts on land within or adjacent to SRMAs and land with high biological resource value. Acquisition of land with high biological resource value would have long-term, beneficial impacts to vegetation, as discussed under Alternative B.

Special Designations

ACECs

The designation of ACECs would allow focused management to occur in designated areas, which protects and enhances the natural and/or cultural resource values for which the ACECs were set aside and minimizes detrimental impacts. ACEC designation does not imply any specific management actions. Management is laid out in an ACEC

management plan and can be tailored to the specific resources or hazards that inspired designation. For ACEC's where special status species are a primary focus, management actions might include changing the timing or location of various activities that might affect the plants and animals to be conserved. Grazing, mining, recreation, and OHV/motor vehicle use might be affected. This special designation would have long-term, beneficial impacts on special status species by focusing management on the protection of the special status species for which the ACECs were designated.

All alternatives would maintain the existing six ACECs as designated and would include additional use restrictions for any new ACECs designated. In addition, specific restrictions would be applied to the Red Hills and Pine Hill Preserve ACECs.

Alternative A and C would not designate any new ACECs. The lack of additional ACEC designations could allow adverse impacts to vegetative communities that would not occur if the ACECs were created under Alternatives B and D.

Alternative B would designate six new ACECs and expand three existing ACECs. These designations and expansions would provide long-term, beneficial impacts to vegetation by protecting natural resources and restricting potential adverse impacts. Vegetative communities within these new ACECs include northern gabbroic mixed chaparral, serpentine buckbrush chaparral, lone chaparral, leather oak chaparral, valley oak riparian forest, seasonal wetlands, and vernal pools. By designating the most new ACECs, Alternative B would most beneficially impact vegetation.

Alternative D would designate five of the six new ACECs designated in Alternative B and expand the same three existing ACECs. Because the Yuba Brownsville ACEC is not included in Alternative D, this gabbroic mixed chaparral plant community would receive less protection under Alternative D relative to Alternative B. Like Alternative B, Alternative D would have long-term, beneficial impacts to vegetation.

ACEC Use Restrictions

General use restrictions proposed for all of the ACECs would help conserve ACEC values. These restrictions are designed to limit disturbance. For instance, under these use restrictions a ROW through an ACEC would not be issued if it impacted those values that lead to ACEC designation. Similarly, grazing and OHV use would not be allowed to damage ACEC values. Because all except two of the ACECs proposed under the various alternatives identify vegetation or animal habitat as primary values, the use restrictions would benefit vegetation.

The use restrictions proposed for the Pine Hill Preserve ACEC (and other ACECs) restricts ROWs to areas that lack the values for which the ACEC was designated. This provision would directly affect a potential road project that has been discussed by some members of the public. There is interest in widening and paving a road that crosses BLM-administered land within the Pine Hill Preserve that parallels Highway 50 on the north side, between the Cameron Park Drive and Ponderosa Road exits. It is estimated that, if the project were to be implemented, it would extend along a 0.5-mile long by 100-

foot-wide belt of existing rare plant habitat on BLM-administered land. The project would permanently eliminate the vegetation at the project site, part of a rare plant community that had been set aside for conservation. Funds to acquire this parcel were contributed by the USFWS, USBR, the National Fish and Wildlife Foundation, and the Wildlife Conservation Board. All of these agencies donated their funds with the express understanding that the land purchased would be used for the conservation of five federally and state listed species and the ecosystem on which they depend. To use the land for another purpose that involved the elimination a wide swath of this rare plant community would violate the intent under which the funds were donated.

Specific use restrictions for the Red Hills ACEC prevent horse and mountain bike use off of existing trails, preventing crushing of vegetation and the proliferation of new horse trails, which has been an ongoing problem. The elimination of camping would prevent disturbance in the form of campsite clearing, fuelwood cutting, littering, and the like in an area that has no facilities for camping. The lack of bathrooms is a particular problem. Camping in summer poses a wildfire threat, which can lead to direct and indirect impacts (from fire suppression) to the vegetation of the area. There has been very little demand for camping in the Red Hills.

Wild and Scenic Rivers

The designation of wild and scenic rivers would focus management on these areas. An important management goal for wild and scenic rivers is to protect the free-flowing conditions and the outstandingly remarkable values for which the rivers were designated. The FFO would be required by law to protect the free-flowing conditions. The FFO would not allow the river to be modified by impoundments, diversions, channelization, riprap, or any other modification. This protection would have beneficial impacts on vegetation. The maintenance of healthy vegetation is essential to the maintenance of outstandingly remarkable values like scenery, water quality, and botanical resources. Adverse impacts on vegetation from damming a river could include loss or alteration of riparian and lower canyon habitat due to alteration of rivers, adjacent natural lakes, and wetlands by inundation, dewatering, channelization, and filling. Therefore, wild and scenic designations help to maintain the naturalness of the river systems and would create beneficial impacts for vegetation by increasing protection of vegetation and riparian habitat.

Alternative A would not recommend to Congress any new rivers as suitable for wild and scenic river designation. This lack of additional designation could lead to adverse impacts on vegetation if projects affecting the free flow of the river were to occur with effects on riparian and other lower canyon habitat.

Alternative B would recommend to Congress seven new rivers. This alternative would provide long-term, beneficial impacts to vegetation by protecting natural resources and restricting potential adverse impacts, as discussed above. By designating the most new wild and scenic rivers, Alternative B would most beneficially impact vegetation and riparian habitat.

Alternative C would recommend to Congress one new river because of its outstandingly remarkable recreational values. This designation would benefit vegetation by including additional protection of associated riparian habitat. Because this alternative does not provide as many wild and scenic river designations as Alternative B, it is less beneficial to vegetation.

Alternative D would recommend to Congress two new rivers for wild and scenic river designation because of their recreation, cultural, scenic, and/or water quality values. This designation would benefit vegetation by additional protection of riparian areas. Because this alternative does not provide as many wild and scenic river designations as Alternative B, it is less beneficial to vegetation.

Forestry, Livestock Grazing, and Minerals and Energy

Resource commodities programs such as forestry, livestock grazing, and energy and minerals development can have similar impacts on vegetation. Depending on the scale, intensity, duration, and time of year of these activities, potential short-term, adverse impacts on vegetation include: direct mortality, vegetation disturbance, alteration of plant community structure, noxious weed or undesired non-native species introduction, and soil compaction or erosion. Especially if severe soil impacts are allowed to occur (e.g., the loss of topsoil that can occur with grading), long-term or even permanent adverse changes to vegetation can be the result. New roads and additional vehicles in project areas may lead to increased vegetation disturbance.

Grazing and forestry actions can produce beneficial impacts on vegetation as well. Forestry practices such as thinning and prescribed fire to improve habitat or reduce fuel hazards sometimes have long-term, beneficial impacts on vegetation by improving or increasing plant diversity, controlling noxious weeds or non-native invasive species, and reducing the risk of severe wildland fire. In addition, livestock grazing combined with adaptive management in certain ecosystems can be used to control noxious weeds or non-native invasive species (e.g., control of weedy annual grasses that invade and displace native vernal pool flora).

Forestry, grazing, and some minerals projects may go through stages of site-specific planning and environmental review. (Mining claim operations for locatable minerals fall under the mining law and often are not subject to NEPA.) The NEPA process may lead to site-specific decisions that avoid or minimize potential adverse impacts to the environment generally and vegetation specifically.

All alternatives would make the Yuba Goldfields available for solid mineral material sales. These sales would include reclamation requirements, which would be used for the restoration of wetland and riparian habitats on FFO-managed lands. The restoration of these unique habitats would have long-term, beneficial impacts to vegetative communities.

Alternative A would continue to maintain the scale, intensity, duration, and timing of forestry, livestock grazing, and mineral development currently conducted. Because this

alternative provides the least restrictive management for consumptive uses, there could be adverse impacts to vegetation, as discussed above.

Alternative B is the most restrictive in terms of forestry, livestock grazing, and minerals practices. This alternative would manage conifer forests towards old growth, seral conditions, decrease livestock grazing by 14,497 acres, and cancel grazing leases on lands that impact significant biological resources. This restriction of consumptive use practices would have beneficial impacts on vegetative communities.

Alternative C would increase overall timber production, designate all lands with grazing potential outside of SRMAs and special designated areas open to grazing, and expand mineral material sales. The increase of timber production, grazing, and mineral development would have adverse impacts on vegetation, as discussed above.

Alternative D would increase overall timber production, reduce grazing, and limit mineral material sales. This alternative would beneficially impact vegetation, however; the impact would not be as beneficial as the actions under Alternative B.

Alternatives B and D would propose the withdrawal from mineral entry of all ACECs, wild and scenic river corridors, and the Yuba Goldfields. Hard rock mining operations generally require the removal of surface soil and vegetation to access the bedrock below. Roads, tailings piles, ponds, and processing equipment may also displace vegetation. ACEC designation by itself gives the FFO greater oversight of mining claim operations because all mechanized mining and other activities in ACECs exceeding casual use are conducted under a plan of operations subject to FFO approval. Mineral withdrawals would prohibit new mining claim locations in the withdrawn area, thereby reducing the probability of adverse impacts to vegetation from mining. If an area is withdrawn from mineral entry, operations other than casual use would require a FFO-approved plan of operations. Plan approval would require a determination of a valid existing right through a validity exam, a procedure that assesses the economic viability of mining the site. Many of the FFO's ACECs contain rare plant communities which are adapted to the rare soils on which they developed. These plant communities can be displaced when soils are altered by mineral development. Alternatives B and D propose the most extensive mineral withdrawals and would produce the greatest benefit to rare plant communities.

Visual Resource Management

The VRM class system was developed to guide the management of public lands, especially those lands with notable and important visual resources (i.e., viewsheds, landscapes, etc.). The land manager assigns an area a VRM class (I to IV) according to the visual resource management goals for that area. The class can be higher or even lower than the actual existing condition, depending on the land manager's goals for the area. A high VRM class (I or II) reflects a strong desire to protect or enhance the visual resources of the area. Conversely, a low VRM class means the land manager is less likely to protect the area's visual resources.

Under Alternative A, few areas under FFO management have been assigned a VRM class because the system is relatively new and was not in use during the last major plan amendment. Visual resources are considered mainly on a case-by-case basis. The FFO is required to maintain the outstanding visual resources of Congressionally designated wild and scenic river corridors, including the North Fork American, the Tuolumne, and the Merced (wild section). The FFO manages these corridors according to Class I standards. This has beneficial impacts on a wide range of resources in these corridors aside from the visual qualities. The FFO is less likely to allow projects in this area that typically degrade visual resources. These projects could include major quarrying operations, the construction of high voltage power lines, or the building of large-scale roads. Such projects often have adverse impacts on vegetation and the soils on which the vegetation depends. Preventing these projects to preserve outstanding visual qualities also would help protect environmental resources such as vegetation.

Under Alternative B, the FFO would manage the largest amount of public land according to VRM Class I and Class II standards. All FFO-managed land within the planning area would be given either a Class I or Class II status. This would have the greatest beneficial impact on vegetation and other environmental resources. The FFO would be unlikely to allow projects that could potentially degrade visual resources on the lands it manages. Under Alternative C, the FFO proposes the least amount of Class I and Class II lands. In fact, most FFO-managed land would be managed according to Class III standards, which allow the field office considerable flexibility in allowing projects that could degrade visual resources and other environmental qualities such as vegetation. This is potentially good for resource use but allows for more adverse effects to the environment. Alternative D is intermediate to Alternatives C and B.

Wildland Fire Ecology and Management

Periodic low-intensity wildfires are essential to the health of certain ecosystems. Some vegetative species depend on fire to reproduce, while other whole plant communities, such as chaparral, have adapted to periodic fires. Although wildfires are a natural ecosystem process, high-intensity wildfires caused by extreme weather, artificially enhanced fuel loading from fire suppression, or human negligence can devastate vegetation, sometimes negatively impacting rare-plant communities and special status plant species. High-intensity fires can burn vegetation and organic matter down to bare earth. This can damage soil, destroy roots, tubers, and rhizomes, at least temporarily replacing entire plant communities. In some ecosystems, invasive species have become dominant when the usual competitive advantages of native perennial species have been reduced or eliminated following intense wildfires.

Prescribed fire could beneficially impact vegetation if used to reduce the amount of hazardous fuels, control or eliminate noxious weeds or undesired non-native species, or increase plant community diversity.

Prescribed fire can result in short-term, adverse impacts to vegetation-including direct mortality, plant injury, depletion of the seed bank, alteration of plant communities, weed increase, and accelerated soil erosion. However, long-term, beneficial impacts include

reduced risk of severe wildfires, reduction of noxious weeds or undesired non-native species, and increased species diversity of the plant community. The prevention of severe wildfires is important because severe wildfires can produce more intense versions of all of the potential adverse effects of a prescribed burn (listed above).

All alternatives would implement and maintain the FFO's Fire Management Plan. In addition, Alternative A would use prescribed burns for fuels reduction and would employ wildfire suppression methods that have the least impact on resource values within the areas identified for modified suppression. For instance, when CDF fights a wildfire in the Red Hills under the modified suppression plan for that area, wide dozer lines that clear all vegetation down to mineral soil would be less likely to be used than they would be in other areas.

Modified suppression plans would continue to be used under all of the alternatives. However the alternatives with more special designations, such as Alternatives B and D, are in a better position for the addition of new modified suppression plans to cover environmentally sensitive areas. If CDF agrees to these additions, the modified suppression plans under Alternatives B and D would encompass more acreage and affect more vegetation than the modified suppression plans under Alternatives A and C. Generally under modified suppression plans, fires that do not threaten lives or property are fought less aggressively to avoid or lessen long-term environmental impacts. Of course, if lives or property are at risk, fire fighters use every tool at their disposal to control the fire. Under Alternatives B and D, potential short-term adverse impacts to vegetation from an increase in areas where modified suppression could potentially occur might include larger fires and more widespread destruction of vegetation. Long-term impacts of increased modified suppression plans would be a closer approximation of natural fire cycles, a more natural mosaic of different-aged stands of vegetation, and less long-term modification of habitat due to the alteration of soils that accompanies heavy equipment use during standard fire suppression.

Alternative B would prioritize fuel reduction projects that would improve significant biological resources as well as protecting communities at risk. This alternative would be most beneficial to vegetation because prescriptions would be designed to benefit rare plant communities.

Alternative C would prioritize the implementation of fuel reduction projects that help protect communities at risk and that benefit recreation and commodity production. While this fuel reduction might beneficially affect vegetation, most projects would likely occur away from the rare plant communities whose conservation importance exceeds that of more common plant communities. Even in those cases where rare plant communities were involved in a fuels reduction project, there might be occasions when the prescription would be suboptimal for that vegetation because of the emphasis on enhancing other resources.

Alternative D would prioritize fuel reduction projects to benefit communities at risk, habitat enhancement, and High Use recreation areas. Long-term beneficial impacts to vegetation would be the same as under Alternative B for the projects undertaken to

improve habitat. However, less resources would be dedicated to burning for the enhancement of vegetation under this alternative than under Alternative B.

4.4.4 Impacts of the Vegetative Communities Program's Proposed Actions on the Environment and Other FFO Programs

The vegetative communities program's proposed actions are expected to have a beneficial impact on the environment, including air, soil, water, and other resources. There may, however, be minor short-term impacts on other programs (such as livestock grazing).

4.4.5 Cumulative Impacts

Because public lands managed by the FFO are intermixed with private lands and other ownerships, beneficial cumulative impacts could result from the interaction of FFO vegetation management and the actions of private landowners and other agencies. Under all the alternatives, the FFO would work toward sustaining healthy vegetative communities, with an emphasis on protecting rare plant populations. Generally, the FFO would make a beneficial contribution to the conservation status of rare and declining plant communities. For many of these communities, however, the overall trend may be negative, as important habitat on private land becomes developed. Public lands managed by other agencies, particularly by the USFS, provide habitat for some of the same vegetation that occurs on FFO-managed lands. These agencies generally have beneficial impacts on these vegetation types through habitat retention and improvement. Residential development, forestry, and mining on private lands would likely have an adverse impact on rare and declining plant communities that occur on those lands, increasing the importance of habitat on public lands.

Because vegetative communities cross property boundaries, habitat improvements on FFO-managed lands may produce some positive benefits on adjacent lands. This would be particularly evident with the FFO's proposed actions to control weeds. Of course without similar efforts on adjacent private lands, such efforts are not likely to produce long-term permanent results. Cooperation among landowners is a key to controlling weeds. Weed Management Areas, Resource Conservation Districts, and CDF fuels projects, all present opportunities for worthwhile vegetation projects that reach across ownership boundaries.

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4.5 Fish and Wildlife

4.5.1 Introduction

Refer to Section 2.5 for the proposed fish and wildlife management actions under each alternative, and refer to Section 3.5 for a description of existing fish and wildlife conditions in the Sierra Planning Area.

For ease of reference, the Chapter 2 management goals for fish and wildlife are:

- To maintain, improve, or enhance native wildlife and fish populations and the ecosystems upon which they depend; and
- Provide opportunities for research and education.

4.5.2 Impacts of the Fish and Wildlife Program's Proposed Actions on Fish and Wildlife

In general, the proposed actions for the fish and wildlife program are expected to have beneficial impacts on fish and wildlife. Alternative A would continue to protect snags, riparian buffer strips, and oaks for wildlife on all timber sales and migratory habitat for a variety of wildlife species. Other proposed actions under Alternative A include the use of prescribed burns to improve wildlife habitat. These actions would have direct, beneficial impacts on fish and wildlife by protecting and enhancing habitat.

Under alternatives B, C, and D, the FFO would allow lethal control of non-native wildlife species that are adversely impacting native species. Lethal controls would target individual animals and would involve selective control methods (i.e., shooting, gigging, etc.). While this proposed action would provide long-term, beneficial impacts on native species, it could cause temporary, negligible, adverse impacts such as behavior modifications (e.g., disrupting foraging).

Under Alternative B, the FFO would use Partners in Flight focus species to determine the relative health of key bird habitat from 0 to 3,500 ft in elevation. The FFO would work with federal and state agencies as well as conservation organizations to maintain and enhance this habitat. In addition, Alternative B would enhance vegetation for key bird habitat within riparian areas. This would beneficially impact fish and other wildlife in the planning area. The eventual growth of desirable vegetation in riparian areas would likely moderate water temperatures, promote bank stability, and add woody debris to aquatic habitat. Ongoing efforts by the FFO to enhance riparian vegetation would also help increase the number of miles of FFO-managed streams that are classified as "properly functioning." Alternative B would have direct, beneficial impacts on birds, fish, and other wildlife.

Under Alternative C, the FFO would identify, maintain, and enhance the habitat for deer and other migratory terrestrial animals. This alternative would have direct, beneficial impacts on migratory animals and their associated habitats. Enhanced habitat within

riparian areas would also have beneficial impacts on fish and other wildlife, as discussed above under Alternative B.

Alternative D is a combination of actions proposed under alternatives B and C. Under Alternative D, the FFO would use Partners in Flight focus species to determine the relative health of key bird habitat from 0 to 3,500 ft in elevation. These habitats would be maintained and enhanced through work with federal and state agencies as well as conservation entities. In addition, habitat for deer and other migratory terrestrial animals would be identified, maintained, and enhanced through land acquisition, consolidation, and vegetation manipulation along migratory routes. Enhanced habitat within riparian areas would also have beneficial impacts on fisheries in the planning area. Overall, Alternative D would have the most beneficial impacts on fish and wildlife.

4.5.3 Impacts of Other FFO Programs' Proposed Actions on Fish and Wildlife

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Depending on scale, intensity, duration, and time of year, motorized vehicle/OHV use has the potential to adversely impact fish and wildlife and their habitat. Potential adverse impacts on fish and wildlife may include direct mortality, injury, habitat disturbance, vegetation alteration, increased erosion, and disturbance from vehicle noise/human interaction. Motorized use in or near streams often causes increased sedimentation and turbidity, which can decrease water and aquatic habitat quality. These impacts are particularly adverse during the reproductive season of species. For example, increased sedimentation in streams may cover spawning gravel used by salmon. In addition, new route construction could cause disturbance to wildlife species that are sensitive to interaction with humans.

Alternative A would continue to allow all FFO-managed lands within the planning area to be open to motorized vehicle/OHV use (including off-road use) unless closed by a prior FFO action. Under all the other alternatives, motorized vehicle use would be limited to existing routes. Under Alternatives B and D, a limited number of existing routes would be designated for use; all other routes would be off limits unless the user has specific permission from the FFO.

Under Alternative A, impacts to fish and wildlife from motorized vehicle use would likely be greater than under any other alternative. Depending on the extent and intensity of current motorized vehicle use and the likelihood of increased use and route development, there could be adverse impacts on fish and wildlife. Alternative A would likely lead to a proliferation of new routes. This could destroy vegetation, potentially harming fish and wildlife or their habitats. By increasing motorized vehicle access to more areas, Alternative A would likely facilitate illegal dumping, fuelwood trespass, and accidental fire ignitions, all of which can adversely affect fish and wildlife.

Alternative C limits OHV/motorized vehicle use to existing routes, except where closed by a previous FFO action. This alternative, because it limits OHV/motor vehicle use to

existing routes, appears to have less impacts on fish and wildlife, compared to Alternative A. Alternative C would probably cause more adverse impacts on fish and wildlife compared to Alternatives B and D because, under Alternative C, it would be difficult if not impossible to limit motorized vehicle use to the existing trail network.

Under alternatives B and D, the FFO would designate specific routes for OHV/motorized vehicle use. This would greatly reduce the potential for adverse impacts on fish and wildlife. No off-road travel would be allowed. Under these alternatives, fish and wildlife would remain largely undisturbed. Of the four alternatives, alternatives B and D would limit motorized vehicle/OHV use to a specified route network and would therefore most beneficially impact fish and wildlife species.

Recreation (SRMAs)

Recreation can have adverse impacts on fish and wildlife. Certain types of recreation (such as OHV use) can cause direct mortality, injury, alteration of habitats, noxious weed introduction, soil erosion, and dust which could decrease population viability. The proposed SRMA designations would specifically manage recreational use in popular areas such as the South Yuba River, Red Hills, and Merced River. The proposed designations could, therefore, have beneficial impacts on fish and wildlife. The designation of SRMAs would focus on recreational management to provide particular recreational opportunities, particularly low impact, river-oriented recreation. The proposed SRMAs would have High, Transitional, or Remote Use zones, according to the ROS (discussed in Chapter 2). The proposed zoning strategy helps the FFO appropriately manage recreational uses that could potentially degrade fish and wildlife.

Under alternatives B and D, the FFO would designate four new areas as SRMAs. These areas include parts of the South Yuba River, North Fork American River, South Fork American River, and Merced River. Under Alternative C, the FFO would designate five SRMAs: the same four as under alternatives B and D, plus the Red Hills. All five areas would be assigned ROS zones. The proposed ROS zoning strategy is similar for all four areas. The proposed SRMAs would include few areas zoned for high and transitional use. Most of the SRMAs would be zoned for low use; therefore, adverse impacts on fish and wildlife would be minor if not negligible. Because Alternatives B, C, and D propose SRMAs designations for areas where the demand for recreation is already high, they may limit adverse impacts on fish and wildlife resulting from uncontrolled public use far better than Alternative A, which proposes no new SRMAs.

Special Designations

ACECs

ACEC designation allows focused management to occur in a designated area, protects and enhances the natural and/or cultural resource values for which the ACEC was set aside, and minimizes detrimental impacts. The ACEC designation does not imply any specific management actions. Management laid out in an ACEC management plan can be tailored to the specific resources (or hazards) that inspired designation. For ACEC's

where fish and wildlife species are a primary focus, management actions might include changing the timing or location of various activities that might affect the animals to be conserved. Grazing, mining, recreation, and OHV/motor vehicle use might be affected. This special designation would generally have beneficial impacts to fish and wildlife and their habitat by facilitating management and protection of natural resources.

Alternatives A and C would not designate any new ACECs. The lack of additional ACEC designations could have adverse impacts on fish and wildlife species or habitats in need of the additional protection these designations would provide.

Alternative B would designate six new ACECs and expand three existing ACECs. These designations and expansions would provide long-term, beneficial impacts to fish and wildlife by protecting natural resources and restricting potential adverse impacts. By designating the most new ACECs, Alternative B would most beneficially impact fish and wildlife.

Alternative D would designate five of the six new ACECs designated under Alternative B and expand the same three existing ACECs. Like Alternative B, Alternative D would have long-term, beneficial impacts to fish and wildlife.

ACEC Use Restrictions

All alternatives would maintain the existing ACECs, and Alternatives B, C, and D would include general use restrictions for these existing ACEC's, any additions to these existing ACECs, and any new ACECs. In addition, specific restrictions would be applied to the Red Hills and Pine Hill Preserve ACECs. These additional restrictions are designed to further protect the special status species for which the ACECs were designated.

General use restrictions proposed for all of the ACECs would help to conserve ACEC values. These restrictions are designed to limit disturbance. For instance, under these use restrictions a ROW would not be issued through an ACEC if it impacted the values that lead to ACEC designation. Similarly, grazing and OHV use would not be allowed to damage ACEC values. Fish and wildlife would similarly benefit from many of the use restrictions designed primarily for the benefit of special status species.

Wild and Scenic Rivers

The special designation of wild and scenic rivers would focus management to occur in designated areas, which protects and enhances the free-flowing or river-related values for which they were set aside and minimizes detrimental impacts. Rivers under this designation would maintain free-flowing characteristics and would not be modified by stream impoundments, diversions, channelization, riprap, or any other modification of the waterway. Adverse impacts to fish and wildlife from these modifications could include direct mortality or blockage of migrating fish, and loss or alteration of habitat due to alteration of riverine habitats, natural lakes, riparian areas, and wetlands by inundation, dewatering, channelization, and filling. Other impacts include changes in flow regimes, sediment transport, water quality, dissolved oxygen, and water temperature which can

make habitat unsuitable for aquatic invertebrates, amphibians, and fish. Therefore, such designations that maintain the natural condition of the river would benefit fish and wildlife by increasing protection of aquatic species and habitat as well as wildlife and riparian habitat adjacent to designated rivers.

Alternative A would not recommend to Congress any new rivers as suitable for wild and scenic river designation. This lack of additional designation could have adverse impacts on fish and wildlife species or habitats in need of the additional protection these designations would provide.

Alternative B would recommend to Congress seven new rivers be designated as wild and scenic rivers. This alternative would provide long-term, beneficial impacts to fish and wildlife by protecting natural resources and restricting potential adverse impacts, as discussed above. By designating the most new wild and scenic rivers, Alternative B would most beneficially impact fish and wildlife.

Alternative C would recommend to Congress one new river for wild and scenic river designation because of its remarkable recreational values. This designation would benefit fish and wildlife by including additional protective measures to both the aquatic area and associated riparian habitat. Because this alternative does not provide as many wild and scenic river designations as Alternative B, it is less beneficial to fish and wildlife.

Alternative D would recommend to Congress two new rivers for wild and scenic river designation because of their recreation, cultural, scenic, and/or water quality values. This designation would benefit fish and wildlife by including additional protective measures to both the aquatic area and associated riparian habitat. Because this alternative does not provide as many wild and scenic river designations as Alternative B, it is less beneficial to fish and wildlife.

Lands and Realty

Land Tenure Adjustment

Under all of the alternatives, the FFO would attempt to adjust its land ownership pattern. Public land would be consolidated into key areas to make management more efficient and to serve particular public needs. Prior to disposal, FFO would determine whether the disposal would adversely impact significant fish and wildlife. This determination would be beneficial to fish and wildlife because significant fish and wildlife would likely preclude the disposal action.

Under Alternative C, the FFO would focus acquisition efforts on land within or adjacent to High Use recreation areas (the proposed SRMAs). While Alternative C would increase blocks of available fish and wildlife habitat, the acquired land would likely have unremarkable biological values (nothing that is regionally important). Lands with special status species, rare plant communities, and other regionally important biological values might get overlooked. Alternative C therefore would not be as beneficial to fish and wildlife as the acquisitions proposed in Alternatives B and D.

Under Alternative B, the FFO would focus acquisition efforts on land with special status species and other significant biological resources. Acquisition efforts would emphasize Central Valley wetlands, riparian forest, riverine habitat, vernal pools, and blue oak woodlands. These acquisitions would benefit fish and wildlife within the planning area. The consolidation of public land parcels with high biological resource values, such as land with special status species and rare plant communities, would have long-term, beneficial impacts on fish and wildlife by expanding, diversifying, and connecting habitats.

Under Alternatives A and D, the FFO would continue to retain lands with both significant recreation and habitat value, and dispose of lands that have low values. The FFO would continue to consolidate lands within wild and scenic river corridors, ACECs, and elsewhere. These alternatives would have long-term, beneficial impacts on fish and wildlife by expanding, diversifying, and connecting regionally important habitats, but the impact would not be as beneficial as under Alternative B.

Mineral Withdrawals

Under alternatives B and D, the FFO would withdraw from mineral entry ACECs, wild and scenic river corridors, and the Yuba Goldfields. ACEC designation by itself gives FFO greater oversight of mining claim operations because in ACECs all mechanized mining and other activities exceeding casual use would be conducted under a plan of operations subject to FFO approval. Mineral withdrawals would prohibit locating new mining claims in the withdrawn area, thereby reducing the probability of adverse impacts to fish and wildlife species from mining. Alternatives B and D propose extensive mineral withdrawals and would have the greatest benefit on fish and wildlife species.

Special Status Species/Conservation Strategies

The proposed conservation strategies (Appendix B) would serve as guidelines for managing special status species. The objective of these guidelines is to sustain viable species populations by managing factors affecting the distribution, abundance, and quality of habitat. The conservation strategies also attempt to minimize adverse impacts on special status species. Because fish and wildlife species have interrelationships (linking assemblages of species to one another and to their habitats), the conservation strategies would have direct, beneficial impacts on specific special status species as well as on other fish and wildlife in the planning area.

Alternatives A and C would not implement the conservation strategies. The lack of implementation could have adverse impacts on fish and wildlife and their habitat. Alternatives B and D would implement the conservation strategies, which would have beneficial impacts on fish and wildlife as discussed above.

Visual Resource Management

A high VRM class (I or II) reflects a strong desire to protect or enhance the visual resources of the area. Conversely a low VRM class means the land manager is less likely

to protect the area's visual resources. Higher VRM class assignments generally mean a greater level of environmental protection, including protection of fish and wildlife habitat.

Under Alternative A, few areas under FFO management have been assigned a VRM class because the system was not in use during the last major plan amendment. Visual resources are considered mainly on a case-by-case basis. The FFO is required to maintain the outstanding visual resources of congressionally designated wild and scenic river corridors, including the North Fork American, the Tuolumne, and the Merced (wild section). The FFO manages these corridors according to Class I standards. This has beneficial impacts on a wide range of resources, including fish and wildlife. The FFO is less likely to allow projects in this area that typically degrade visual resources. These projects could include major quarrying operations, the construction of high voltage power lines, or the building of large-scale roads. Many such projects can have direct adverse impacts on wildlife habitat.

Under Alternative B, the FFO would manage the largest amount of public land according to VRM Class I and Class II standards. All FFO-managed land within the planning area would be given either a Class I or Class II status. This would have the greatest beneficial impact on fish and wildlife, as well as other environmental resources. The FFO would be unlikely to allow projects that could potentially degrade visual resources on the lands it manages. Habitat would be protected from the adverse effects of these projects (which often involve the construction of roads, telecommunication towers, high voltage transmission lines, etc.).

Under Alternative C, the FFO proposes the least amount of Class I and Class II lands. In fact, most FFO-managed land would be managed according to Class III standards, which allow the field office considerable flexibility in allowing projects that could degrade visual resources and other environmental qualities. This is potentially good for resource use but allows the most adverse impacts to the environment. Alternative D is intermediate to alternatives C and B.

Forestry, Livestock Grazing, and Energy and Minerals

Depending on the scale, intensity, duration, and time of year of forestry, livestock grazing, and energy and minerals development, potential adverse, short-term impacts to fish and wildlife could include direct mortality, injury, wildlife relocation, habitat loss or fragmentation, alteration of prey populations, increased exposure to predation, temporary loss of food and shelter, vegetation disturbance, soil compaction or erosion, and decreased water quality due to sedimentation. New roads and additional vehicles in these areas may lead to increased wildlife disturbance, and direct interaction between wildlife and humans. Forestry practices such as thinning and prescribed fire to improve wildlife habitat or reduce fuel hazards would have beneficial, long-term impacts on fish and wildlife by improving or increasing habitat diversity, controlling undesired non-native or invasive species, and reducing the risk of severe wildland fire. With management actions specific to forestry, livestock grazing, and minerals, the FFO is subject to project-specific

planning and environmental review to avoid or minimize potential adverse impacts to fish and wildlife.

All alternatives would make the Yuba Goldfields available for solid mineral material sales. These sales would include reclamation requirements which would be used for the restoration of wetlands and riparian habitats on FFO-managed lands. The restoration of these unique habitats would have long-term, beneficial impacts to fish and wildlife.

Alternative A would continue to maintain the scale, intensity, duration, and timing of forestry, livestock, and energy and mineral development that is currently conducted. Because this alternative provides the least restrictive management for consumptive uses, there could be adverse impacts to fish and wildlife as discussed above.

Alternative B would provide the most restriction of forestry, livestock grazing, and minerals practices. This alternative would manage conifer forests towards old growth seral conditions and implement thinning, thereby increasing habitat for wildlife that prefer late-seral stage forests. In addition, this alternative would decrease livestock grazing by 14,497 acres and would cancel grazing leases on lands that impact significant biological resources.

Alternative C would increase overall timber production, designate all lands outside of SRMAs and special designated areas open to grazing, and expand mineral material sales. This alternative would increase production of timber, thereby decreasing and altering wildlife habitat. Increased grazing may impact riparian areas which could potentially have adverse impacts on fisheries in adjacent streams and wildlife that use the riparian area for habitat.

Alternative D would increase overall timber production by thinning, reduce grazing, and limiting mineral material sales. This alternative would beneficially impact fish and wildlife, however, the impact would not be as beneficial as proposed in Alternative B.

Wildland Fire Ecology and Management

Although wildfires are a natural ecosystem process, high-intensity wildfires caused by extreme weather, artificially enhanced fuel loading from fire suppression, or human negligence can devastate fish and wildlife and their habitat. Prescribed fire could be used to reduce the amount of hazardous fuels and the risk of severe wildland fires, therefore benefiting fish and wildlife. Additionally, prescribed fire could be used to improve wildlife habitat by controlling noxious weeds or non-native species and increasing vegetative habitat diversity. Both actions would have long-term, beneficial impacts to fish and wildlife.

Prescribed fire would result in short-term, adverse impacts to fish and wildlife and their habitat, including wildlife relocation, direct mortality, vegetation disturbance and alteration, alteration of prey populations, increased exposure to predation, temporary loss of food and shelter, soil compaction and erosion, and a decrease in air and water quality due to smoke and increased particulates. If prescribed burns occur on a large-scale basis,

impacts could include a change in species composition (e.g., from those adapted to chaparral to those adapted to grassland). However, long-term beneficial impacts include improvement and increased diversity of wildlife habitat, and reduced risk of high-intensity wildfires. Wildfires would have the same impacts as above (only more extreme and not as temporary) due to the uncontrolled nature of wildfire.

All alternatives will implement and maintain the FFO's FMP. In addition, Alternative A would prescribe burns for fuel hazard reduction and suppression methods that have the least impact on the landscape sensitivities of the area.

Alternative B would prioritize fuel hazard reduction projects that would improve significant biological resources. This alternative would most beneficially impact fish and wildlife by improving habitat.

Alternative C would prioritize fuel reduction projects in high-density recreation areas and communities at risk. While this fuel reduction would beneficially impact fish and wildlife by reducing the risk of severe wildland fire, the benefits of improved wildlife habitat would not be as significant as those proposed in Alternative B.

Alternative D would prioritize fuel reduction projects to benefit habitat enhancement and communities at risk. Long-term, beneficial impacts to fish and wildlife would include decreased risk of severe wildland fire and improved wildlife habitat.

4.5.4 Impacts of the Fish and Wildlife Program's Proposed Actions on the Environment and Other FFO Programs

The fish and wildlife communities program's proposed actions are expected to have a beneficial impact on the environment, including air, soil, water, and other resources. There may, however, be minor short-term impacts on other FFO programs.

4.5.5 Cumulative Impacts

The cumulative impacts of the fish and wildlife proposed actions (under all of the alternatives) are expected to be beneficial. All of the alternatives would strive to improve fish and wildlife and their habitats within the planning area. Public lands managed by the FFO are intermixed with other government lands and private lands. Continued residential development on private lands in the planning area will likely create long-term adverse impacts on fish and wildlife by reducing the amount of habitat and blocking migration routes. Forestry activities on other private and federal lands in the planning area are anticipated to continue and will probably also have the potential to impact fish and wildlife. In this context, FFO actions to enhance habitat on public lands and acquire additional habitat are even more important for fish and wildlife populations. This would be particularly evident with undesired non-native wildlife species control and key bird or migratory deer habitat enhancement. These proposed actions would likely have a beneficial impact by increasing species populations in areas adjacent to FFO-managed land. In addition, if habitat improvements are made in riparian areas, fish populations in adjacent areas would benefit. Key habitats are also provided by lands managed by the

USFS, USBR, NPS, and CDPR, creating networks and blocks of public land in the planning area that are important to fish and wildlife populations. Although Alternatives A and C would have beneficial cumulative impacts, Alternatives B and D would have the greatest beneficial, cumulative impacts because they have the most proactive and protective fish and wildlife proposed actions.

4.6 Special Status Species

4.6.1 Introduction

Refer to Section 2.6 for the proposed special status species management actions under each alternative, and refer to Section 3.6 for a description of existing special status species conditions in the Sierra Planning Area.

For ease of reference, the Chapter 2 management goals for special status species are:

- Ensure all management activities and BLM authorizations on public lands are consistent with the conservation needs for special status species; and
- Manage special status species habitat to assist in the recovery of listed species.

Special status species include those plant and animal species: federally listed as threatened, endangered, proposed, or candidates, listed by the state of California as threatened, endangered, or rare; or designated by the BLM California State Director as BLM sensitive. The list of BLM sensitive plant species corresponds very closely to the list of California Native Plant Society List 1B species (1B species are described as “Plants rare, threatened or endangered in California and elsewhere”). BLM sensitive species are managed by the FFO in a manner to prevent the need for federal listing. The restricted distributions, specialized habitat requirements, and population pressures (human induced and natural) facing special status species contribute to a high potential for extinction; thus, their populations are of conservation interest.

The term “rare” is not an official BLM category, but the term is used throughout this document. Herein, this term is defined as biological resources that are uncommon and worthy of special management attention but do not fit into BLM’s definition of special status species. Examples would include species that have only one or a few populations in the region but are more common elsewhere, newly discovered species whose extent are unknown, and genotypes whose taxonomic status are yet to be determined. Many of these rare species may become special status species during the next 20 years.

4.6.2 Impacts of the Special Status Species Program’s Proposed Actions on Special Status Species

In general, the management actions for the special status species program aim to protect or enhance special status species populations and habitat, and are not expected to generate adverse impacts on special status species. Specifically, Alternatives A and C would protect bald eagle roosting sites at specific locations, amend the Red Hills ACEC plan, implement the Spivey Pond Management Area plan, address new threats to special status species (e.g., *Phytophthora cinnamomi*, plant pathogen), and conduct inventories of the Limestone Salamander ACEC, spotted owl, and rare biota in the South Yuba River. All actions would have direct, beneficial impacts to special status species.

Alternatives A and C would not implement the conservation strategies (Appendix B), as discussed further under Alternative B. This lack of implementation could result in adverse impacts to special status species and their habitats, or the absence of beneficial impacts to the species that would flow from conservation actions included in the strategies.

Under Alternatives B and D, the conservation strategies (Appendix B) developed with the USFWS would be implemented and would serve as guidelines for helping the FFO protect individual special status species. The objective of these guidelines is to sustain viable special status species populations. The conservation strategies provide specific guidance for the avoidance of negative impacts and a priority list of proactive conservation actions for each species treated. BLM manages for wildlife mostly by using tools that affect the distribution, abundance, and quality of habitat. Because plants and wildlife species have interrelationships which link assemblages of species to one another and to specific habitats, adopting these conservation strategies would have direct beneficial impacts on specific special status species as well as indirect beneficial impacts on other plant and animal species and habitats. For instance, the protection of the habitat of one special status plant species of the Pine Hill Preserve often produces benefits for other special status plant species because, in this ecosystem, eight special status plant species often share habitat. At the same time, conserving this plant habitat also produces benefits for the California horned lizard, a reptile that makes its home in similar habitat.

In addition to the management actions listed under Alternative A, Alternatives B, C, and D would develop a new Red Hills ACEC management plan and a Pine Hill Preserve management plan. Development and implementation of these plans would result in long-term, beneficial impacts to special status species because they will include provisions for habitat preservation and monitoring of species' abundance.

Alternative B would implement the recovery plan for gabbro soil plants of the central Sierra Nevada foothills, protect four bat species located in the Crystal Palace cavern complex (SRAA), and restrict all surface-disturbing activity in the critical limestone salamander habitat in the Merced River corridor. This alternative would protect special status species habitat and result in long-term, beneficial impacts.

Alternative D would implement the conservation strategies discussed under Alternative B, beneficially impacting special status species as discussed above. Overall, Alternative D would protect special status species habitat and result in long-term, beneficial impacts. Alternative D is nearly as beneficial to special status species as Alternative B.

4.6.3 Impacts of Other FFO Programs' Proposed Actions on Special Status Species

Special Designations

ACECs

ACEC designation allows focused management to occur in a designated area, protects and enhances the natural and/or cultural resource values for which the ACEC was set aside, and minimizes detrimental impacts. The ACEC designation does not imply any specific management actions. Management is laid out in an ACEC management plan and can be tailored to the specific resources or hazards that inspired designation. For ACECs where special status species are a primary focus, management actions might include changing the timing or location of various activities that might affect the plants and animals to be conserved. Grazing, mining, recreation, and OHV/motor vehicle use might be affected. This special designation would have long-term, beneficial impacts on special status species by focusing management on the protection of the special status species for which the ACECs were designated.

All alternatives would maintain the existing ACECs, and Alternatives B, C, and D would include general use restrictions for these existing ACECs, any additions to these existing ACECs, and any new ACECs. In addition, specific restrictions would be applied to the Red Hills and Pine Hill Preserve ACECs. These additional restrictions are designed to further protect the special status plant species for which the ACECs were designated.

Alternatives A and C would not designate any new ACECs. ACEC designation can both reduce adverse impacts to special status species and set in motion beneficial management actions. For instance, although direct adverse impacts to special status species are generally avoided simply by adhering to BLM guidance, ACEC designation could provide additional buffers around rare plant or animal populations, reducing the likelihood of indirect impacts. Similarly the writing of an ACEC management plan is an opportunity to pull together current scientific information and prescribe proactive management actions to foster special status species. ACEC designation focuses management attention on an area of recognized resource values which increases project funding opportunities.

Alternative B would designate six new ACECs, as discussed further in the special designations section. Five of these ACEC's include significant special status species habitat, and four of them focus on the conservation of special status species. Special status species would also benefit from the expansion of three existing ACECs. These designations and expansions would provide long-term, beneficial impacts to special status species. Specifically, direct, beneficial impacts would occur for at least 15 special status plant species and six special status animal species that occur on lands that would gain ACEC status. By designating the most new ACECs, Alternative B would most beneficially impact special status species.

Alternative D would designate five of the six new ACECs proposed under Alternative B, except the Yuba Brownsville ACEC, and expand three existing ACECs. Relative to Alternative B, under Alternative D the habitat of the population of Layne's butterweed, (a federally listed threatened species), at the Yuba Brownsville site would not receive ACEC protection under this alternative. However, like all federally listed species, this population enjoys robust ESA protection (from adverse federal actions) even without ACEC designation. On the other hand, a rare dwarf flannelbush of scientific interest and unknown taxonomic status at the Yuba Brownsville site does not receive ESA protection and might benefit from ACEC designation. Like Alternative B, Alternative D would have long-term, beneficial impacts to special status species.

ACEC Use Restrictions

General use restrictions proposed for all of the ACECs would help to conserve ACEC values. These restrictions are designed to limit disturbance. For instance, under these use restrictions a ROW through an ACEC that could potentially impact the values that lead to ACEC designation would not be issued. Similarly, grazing and OHV use would not be allowed to damage ACEC values.

The use restrictions proposed for the Pine Hill Preserve ACEC (and other ACECs) restricts ROWs to areas that lack the values for which the ACEC was designated. This provision would directly affect a potential road project that has been discussed by some members of the public. There is interest in widening and paving a road that crosses BLM-administered land within the Pine Hill Preserve. The road parallels Highway 50 on the north side between the Cameron Park Drive and Ponderosa Road exits. It is estimated that, if the project were to be implemented, it would extend along a 0.5-mile long by 100-foot-wide belt of existing rare plant habitat on BLM-administered land. The project not only would directly impact (destroy) rare plant populations within the Preserve but would also permanently destroy habitat that had been set aside for conservation, interfering with the achievement of local, state, and federal conservation goals for rare plant habitat protection. Funds to acquire this parcel were contributed by the USFWS, USBR, National Fish and Wildlife Foundation, and the Wildlife Conservation Board. All of these agencies donated their funds with the express understanding that the land purchased would be used for the conservation of five federally and state listed species and the habitat on which they depend. To use the land for another purpose that would involve the destruction of large numbers of plants of these species and the permanent destruction their habitat would violate the intent under which the funds were donated.

Specific use restrictions for the Red Hills ACEC and the Pine Hill Preserve ACEC, proposed under Alternatives B and D, prevent horse and mountain bike use off of existing trails, preventing crushing of special status plant species and the proliferation of new trails, which has been an ongoing problem in the Red Hills in particular. The elimination of camping would prevent disturbance in the form of campsite clearing, fuelwood cutting, littering, and the like in an area that has no facilities for camping. The lack of bathrooms is a particular problem. Camping in summer poses a wildfire threat. Wildfire can lead to direct and indirect impacts (from fire suppression) to the special

status plants of these areas. There has been very little demand for camping in the Red Hills or the Pine Hill Preserve.

Wild and Scenic Rivers

The designation of wild and scenic rivers would focus management on these areas. An important management goal for wild and scenic rivers is to protect the free-flowing conditions and the outstandingly remarkable values for which the rivers were designated. The FFO would be required by law to protect the free-flowing characteristics and outstandingly remarkable values of these rivers. The FFO would not allow designated rivers be modified by stream impoundments, diversions, channelization, riprap, or any other modifications. Adverse impacts to special status species from these modifications could include direct mortality or blockage of migrating fish. Other adverse impacts would result from the loss or alteration of habitat due to changes to the river itself, natural lakes, riparian areas, and wetlands by inundation, dewatering, channelization, and filling. Other impacts include changes in flow regimes, sediment transport, water quality, dissolved oxygen, and water temperature which can make habitat unsuitable for aquatic invertebrates and fish. Therefore, such designations that maintain the naturalness of the river system would benefit special status species by maintaining natural flow regimes, which are essential components of aquatic species habitat. Wild and scenic river designation would also protect wildlife and riparian habitat adjacent to designated rivers.

Alternative A would not recommend to Congress any new rivers as suitable for wild and scenic river designation. This lack of additional designation could have adverse impacts on special status species dependent on natural flow regimes or whose habitat might be altered by impoundments or other projects that might occur if a river is not designated as wild and scenic.

Alternative B would recommend to Congress seven new rivers be designated as wild and scenic rivers. This alternative would provide long-term, beneficial impacts to special status species by protecting natural resources and restricting potential adverse impacts, as discussed above. Specifically, designation of the North Fork Merced would protect the limestone salamander and of the North Fork Mokelumne would protect the valley elderberry longhorn beetle. By designating the most new wild and scenic rivers with special status species, Alternative B would most beneficially impact special status species.

Alternative C would recommend to Congress one new river for wild and scenic river designation because of its remarkable recreational and cultural values. This designation could benefit special status species by including additional protective measures for both the aquatic area and associated riparian habitat. Because this alternative does not designate the same segments as Alternative B (where special status species are known to exist), it is less beneficial to special status species.

Alternative D would recommend to Congress two new rivers for wild and scenic river designation because of their recreational, cultural, scenic, and water quality values. This designation would benefit special status species as discussed under Alternative B.

Because this alternative does not provide as many wild and scenic river designations as Alternative B, it is less beneficial to special status species.

Lands and Realty

Land Tenure Adjustment

Acquisitions of land with high biological resource value, such as lands in or adjacent to ACECs and important habitat for special status species and rare-plant communities would have long-term, beneficial impacts on special status species by expanding, diversifying, or connecting habitats.

All alternatives would ensure that prior to disposal, lands would be analyzed for significant special status species. This analysis would be beneficial to special status species since it would ensure that important habitats are retained or transferred to an agency or group with the means and commitment to carry on long-term conservation management.

Alternative A would continue to retain lands of significant recreation or habitat value and would dispose of, acquire, or transfer lands to ensure more efficient management. In addition, Alternative A would consider ROWs on a case-by-case basis.

Alternative B would focus acquisitions efforts on land in or adjacent to special designation areas and would important habitat for special status species. Other acquisition efforts would emphasize Central Valley wetlands, riparian forest, riverine habitat, vernal pools, and blue oak woodlands. These actions would have long-term, beneficial impacts to special status species by increasing the important habitat managed by BLM and decreasing fragmentation. Beneficial impacts would be the greatest for special status species, such as the giant garter snake, sandhill crane, Swainson's hawk, Chinese Camp brodiaea, and California verbena. In addition, Alternative B would approve ROWs and authorize other lands uses only if there are no conflicts with special status species.

Alternative C would focus acquisition efforts on land within or adjacent to SRMAs. While Alternative C might in some cases increase the habitat available to special status species, land adjacent to SRMAs most likely has less biological value than land adjacent to ACECs and, therefore, would not be as beneficial to special status species as the acquisitions proposed in Alternative B. In addition, Alternative C, because it proposes no new ACECs, would not have the restrictions on the approval of ROWs in the new ACECs proposed in Alternatives B and D. Because of these additional use restrictions, Alternatives B and D might produce a minor beneficial effect for special status species relative to Alternative C.

Alternative D would focus acquisition efforts both on land in or adjacent to SRMAs and land with high biological resource value. Acquisition of land with high biological resource value would have long-term, beneficial impacts to special status species, as discussed under Alternative B. More funds might be available for such acquisitions

under Alternative B, because, under Alternative D, acquisitions for recreation would also be a priority.

Mineral Withdrawals

Under alternatives B and D, the FFO would withdraw from mineral entry all ACECs, wild and scenic river corridors, and the Yuba Goldfields. ACEC designation by itself gives BLM greater oversight of mining claim operations because in ACECs all mechanized mining and other activities exceeding casual use are conducted under a plan of operations subject to BLM approval. Mineral withdrawals would prohibit new mining claim location in the withdrawn area, thereby reducing the probability of adverse impacts to special status species from mining. If an area is withdrawn from mineral entry, operations other than casual use would require a BLM-approved plan of operations. Plan approval will require a determination of a valid existing right through a validity exam, a procedure that assesses the economic viability of mining the site. Many of the FFO's ACECs and proposed ACECs contain special status plants and animals that could be irreparably damaged by mineral development, even on a small scale. Good examples are the California red legged frog, Red Hills roach, and the limestone salamander. Some species have been impacted by prospecting with hand tools, an activity classified as "casual use" and falling below the threshold requiring a plan of operations. Alternatives B and D propose the most extensive mineral withdrawals and would have the greatest beneficial impact on special status species.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Depending on scale, intensity, duration, and time of year, motorized vehicle/OHV use and other high-impact recreational activities have the potential to impact special status species and their habitat. Unauthorized vehicle access can damage areas intended to remain undisturbed. Problems can be caused by direct vehicle impacts or indirect impacts from other activities that would not occur without easy access (e.g., remote cave exploration which affects bat populations). Potential adverse impacts to special status species may include direct mortality, injury, vegetation alteration, noxious weed or undesired non-native species propagation, soil compaction, increased erosion, and disturbance from noise or human interaction. If vehicles cause much ground disturbance near streams or other aquatic habitat, soil erosion could increase sedimentation and turbidity therefore decreasing water and aquatic habitat quality. These impacts are particularly adverse during the reproductive season of species. For example, increased sedimentation in streams may cover spawning gravel used by salmon. In addition, new road or trail construction opens areas to the public, which can cause disturbance to wildlife species that are sensitive to interaction with humans. For example, recreational cave or abandoned mine exploration and their associated activities, such as camping or bonfires, can disturb bat roosting areas.

Alternative A would continue to allow all FFO-managed lands within the Sierra Planning Area to be open to OHV/motorized vehicle use (including off-road use), unless specifically closed. All the other alternatives would limit OHV/motorized vehicle use to existing routes. Under Alternative A, impacts to special status species from

OHV/motorized vehicle use would be greater than under any other alternative. Depending on the extent and intensity of OHV/motorized vehicle use and potential increases over time, there could be adverse impacts to special status species as discussed above.

Alternatives B and D would limit OHV/motorized vehicle use to designated routes, reducing the potential for adverse impacts on special status species. No off-road travel would be allowed anywhere on FFO-managed land. Under these alternatives, special status species would remain undisturbed due to no new routes being created and the elimination of some existing routes, (i.e., those routes that are not designated as “open”). Of the four alternatives, alternatives B and D would limit motorized vehicle/OHV use to a specified route network and therefore would most beneficially impact special status species. For example, several special status species, including a federally listed species, would benefit from the route designations that would curtail traffic (especially potential off-road traffic) in the Deadman’s Flat area.

Alternative C would make all existing routes available to OHV/motorized vehicle use (except where closed by a prior FFO action). In theory, at least, no OHV/motorized vehicle use would be allowed in new areas. Alternative C, because it limits OHV/motor vehicle use to existing routes, appears to be relatively benign in its effects to special status species. However, because of enforceability issues (see above), Alternative C is likely to lead to a proliferation of new trails displacing native vegetation and potentially affecting special status species or their habitats. By allowing more vehicle access to more areas, Alternative C is likely to facilitate more illegal dumping, timber and fuelwood trespass, and accidental fire ignitions, all of which can adversely affect special status species. Alternative C, because it disallows off-road use, would limit adverse effects to special status species relative to Alternative A. Alternative C would allow more adverse impacts to special status species when compared to Alternatives B and D because, under Alternative C, it would be very hard to limit vehicle use to the existing trail network.

Recreation (SRMAs)

The ROS zoning strategies for each proposed SRMA would enhance primary recreation opportunities for that particular SRMA. The proposed ROS zoning is discussed in more detail in 2.15 and 4.15. The zoning would create relatively large areas that would be managed for remote use. In fact, most of the proposed SRMAs would be managed for remote use. High Use and transitional use areas would be confined to relatively small areas at key access points and along hiking trails. The proposed ROS strategies are generally beneficial to water and other environmental resources because the non-motorized recreation proposed for these SRMAs is generally low impact. The low use areas would see little use compared to the High Use areas. Except in some key areas of special status species concentration, recreation activities like rafting, hiking, nature viewing, backcountry camping, etc., in remote use areas generally would have only negligible effects on special status species. Most visitors would recreate in the proposed High Use areas, which can be designated to avoid the habitat of special status species. These areas (campgrounds, parking areas, day-use areas, boat launches, etc.) are

relatively confined and receive considerable management attention (ranger patrols, regular maintenance, etc.). OHV use and other kinds of high impact recreation would be prohibited within the proposed SRMAs.

The SRMA proposed for the Red Hills only under Alternative C, would accommodate two primary activities, a consistent public interest in equestrian use, as well as a short season of wildflower viewing. The SRMA would shift management emphasis away from the ACEC's primary purpose to conserve the rare serpentine ecosystem of the Red Hills. Compared to the other alternatives, more environmental damage would occur under alternative C, with the construction of additional recreational facilities and an increase in number of visitors and horseback riders. In the Red Hills, horse trails have proliferated as riders avoid older trails that have deteriorated with accelerated erosion caused by horse use, especially riding that occurs in the wet season. Impacts to special status species are likely to increase with increased public use of the SRMA proposed under Alternative C. In terms of SRMA designation, the other alternatives are more beneficial for special status species than Alternative C.

Visual Resource Management

The VRM class system was developed to guide the management of public lands, especially those lands with notable and important visual resources (i.e., viewsheds, landscapes, etc.). The land manager assigns an area a VRM class (I to IV) according to the visual resource management goals for that area. The class can be higher or even lower than the actual existing condition, depending on the land manager's goals for the area. A high VRM class (I or II) reflects a strong desire to protect or enhance the visual resources of the area. Conversely, a low VRM class means the land manager is less likely to protect the area's visual resources.

Under Alternative A, few areas under FFO management have been assigned a VRM class because the system is relatively new and was not in use during the last major plan amendment. Visual resources are considered mainly on a case-by-case basis. The FFO is required to maintain the outstanding visual resources of Congressionally designated wild and scenic river corridors, including the North Fork American, the Tuolumne, and the Merced (wild section). The FFO manages these corridors according to Class I standards. This has beneficial impacts on a wide range of resources, including special status species in these corridors aside from the visual qualities. The FFO is less likely to allow projects in this area that typically degrade visual resources. These projects could include major quarrying operations, the construction of high voltage power lines, or the building of large-scale roads. Such projects can have direct or indirect adverse impacts on special status species. While direct impacts would generally be avoided after the environmental analysis required by NEPA, subtle indirect impacts might be missed. Restrictive VRM classes can reinforce other factors that limit disturbance of special status species.

Under Alternative B, the FFO would manage the largest amount of public land according to VRM Class I and Class II standards. All FFO-managed land within the planning area would be given either a Class I or Class II status. This would have the greatest beneficial impact on special status species as well as water, soils, vegetation, and other

environmental resources. The FFO would be unlikely to allow projects that could potentially degrade visual resources on the lands it manages. Under Alternative C, the FFO proposes the least amount of Class I and Class II lands. In fact, most FFO-managed land would be managed according to Class III standards, which allow the field office considerable flexibility in allowing projects that could degrade visual resources and other environmental qualities. This is potentially good for resource use, but it allows the most adverse impacts to the environment. Alternative D is intermediate to Alternatives C and B.

Wildland Fire Ecology and Management

Periodic low-intensity wildfires are essential to the health of certain ecosystems. Some plant species, including some special status plant species, depend on fire to reproduce, while other whole plant communities, such as chaparral, have adapted to periodic fires. Although wildfires are a natural ecosystem process, high-intensity wildfires caused by extreme weather, artificially enhanced fuel loading from fire suppression, or human negligence can devastate vegetation, sometimes negatively impacting rare plant communities and special status plants and animals. Special status wildlife species that are particularly vulnerable include California spotted owl, limestone salamander, and California red legged frogs. High-intensity fires can burn vegetation and organic matter down to bare earth. This can damage soil, destroy roots, tubers, and rhizomes, at least temporarily replacing entire plant communities. In some ecosystems, invasive species have become dominant when the usual competitive advantage of native perennial species has been reduced or eliminated following intense wildfires.

Prescribed fire generally will beneficially impact special status plants and animals if the prescription is chosen to control or eliminate noxious weeds or undesired non-native species, foster the propagation of a special status plant that depends on fire-stimulated germination, or improve the habitat of a special status animal.

Prescribed fire could sometimes result in short-term, adverse impacts to special status species, including direct mortality, injury, seed bank depletion, alteration of plant communities, wildlife relocation, alteration of prey populations, increased exposure to predation, temporary loss of food or shelter, and accelerated soil erosion. However, long-term, beneficial impacts include reduced risk of severe wildfires, reduction of noxious weeds or undesired non-native species, and increased propagation of some special status plant species. Reducing the likelihood of severe wildfire is important because each of the potential adverse impacts of a prescribed fire listed above can also occur with a wildfire. With a severe wildfire, each of those adverse impacts is much more likely.

All alternatives would implement the FFO's FMP. In addition, Alternative A would use prescribed burns for fuel hazard reduction and would employ wildfire suppression methods that have the least impact on resource values within specified modified suppression zones. For instance, when CDF fights a wildfire in the Red Hills ACEC and Limestone Salamander ACEC under the modified suppression plan for these areas, wide dozer lines that clear all vegetation down to mineral soil would be less likely to be used than they would be in other areas without modified suppression plans.

Modified suppression plans would continue to be used under all of the alternatives. However, the alternatives with more special designations, such as Alternatives B and D, are better situated for the addition of new modified suppression plans to cover these additional special designation areas. If CDF agrees to these additions, the modified suppression plans under Alternatives B and D would encompass more acreage and affect more special status species habitat than the modified suppression plans under Alternatives A and C. Generally under modified suppression plans, fires that do not threaten lives or property are fought less aggressively to avoid or lessen long-term environmental impacts. Of course, if lives or property are at risk, fire fighters will use every tool at their disposal to control the fire. Under Alternatives B and D, potential short-term adverse impacts to special status species from modified suppression plans covering additional areas would include larger fires and more widespread alteration of habitat. Long-term impacts of increased, modified suppression plans would be a closer approximation of natural fire cycles, a more natural mosaic of different-aged stands of vegetation, and less long-term modification of habitat due to the alteration of soils that accompanies heavy equipment use during standard fire suppression. Dozer operations can be the most destructive aspects of wildfires for special status species.

Alternative B would prioritize fuel reduction projects that would improve significant biological resources as well as protect communities at risk. This alternative would be most beneficial to special status species because prescriptions would be designed to benefit these species.

Alternative C would prioritize fuel reduction projects in high-density recreation areas and communities at risk and that benefit recreation and commodity production. While this fuel reduction might occasionally beneficially impact special status species, most projects would likely occur away from special status species habitat. If special status species habitat were involved, there might be occasions when the prescription would be suboptimal for those species because of the emphasis on enhancing other resources.

Alternative D would prioritize fuel reduction projects to benefit communities at risk, habitat enhancement, and High Use recreation areas. Long-term beneficial impacts to special status species would be the same as under Alternative B for the projects undertaken to improve special status species habitat. However, less firefighting resources would be dedicated to conduct prescribe burns for the enhancement of biological resources under this alternative than under Alternative B.

Forestry, Livestock Grazing, and Energy and Minerals

Under Alternative C, the FFO would increase production of resource products. This means increased production under forestry, livestock grazing, and energy and minerals programs. This is most evident in the forestry and livestock grazing. Timber yields and AUMs would increase substantially. Typically, special status species are identified and afforded protection in advance of projects like timber sales, authorization of grazing leases, and approval of plans of operations. This is required under the ESA and other authorities. Therefore, impacts on special status species are avoided or minimized. However, if the FFO increases production, as proposed under Alternative C, there is a

risk. There would be a greater chance of adverse impacts on special status species compared to the other alternatives. Alternative C could be viewed as having the greatest adverse impact on special status species compared to the other alternatives. Alternative B would have the least impact. Alternatives A and D would be intermediate.

4.6.4 Impacts of the Special Status Species Program's Proposed Actions on the Environment and Other FFO Programs

The special status species program's proposed actions are expected to have a beneficial impact on the environment, including air, soil, water, and other resources. There may, however, be minor short-term impacts on other FFO programs, such as mineral development and abandoned mined land remediation. Refer to Sections 4.17 and 4.18 for more information.

4.6.5 Cumulative Impacts

Because public lands managed by the FFO are intermixed with private lands and other ownerships, beneficial cumulative impacts could result from the interaction of FFO vegetation management and the actions of private landowners and other agencies. Under all the alternatives, the FFO would work toward conserving healthy ecosystems, with an emphasis on special status plants and animals and their habitats. Generally, the FFO would make a beneficial contribution to the conservation status of rare and special status plants and animals. For many of these species, the overall trend may be negative as important habitat on private land becomes developed. Public lands managed by other agencies, including the USFS, NPS, and CDF, provide habitat for some of the same special status species that occur on FFO-managed land. These agencies generally have beneficial impacts on these species through habitat retention, improvement, and other work. Residential development, forestry, and mining on private lands would likely have an adverse impact on rare and special status species that occur in the planning area, thus increasing the importance of habitat on public lands.

Since special status species and their habitats cross property boundaries, habitat improvements on FFO-managed lands would likely have beneficial impacts on adjacent lands. This would be particularly evident with regard to the FFO's actions to control weeds. Of course, without similar efforts on adjacent private lands, FFO actions are not likely to produce long-term, permanent results. Cooperation among landowners is a key to controlling weeds. Weed Management Areas, Resource Conservation Districts, and CDF fuels project, all present opportunities for worthwhile projects that reach across ownership boundaries.

Although Alternatives A and C have the potential to cause beneficial cumulative impacts on special status species, Alternatives B and D would make a greater beneficial contribution to special status species populations across ownership boundaries because these alternatives contain the most proactive special status species management actions.

4.7 Wildland Fire Ecology and Management

4.7.1 Introduction

Refer to Section 2.7 for the proposed fire and fuels proposed actions under each alternative, and refer to Section 3.7 for a description of existing wildfire and fuels conditions in the planning area.

For ease of plan reference, the management goal from Chapter 2 is reiterated here:

- Establish a fire management program that is cost efficient and commensurate with threats to life, property, public safety, and resources.
- Use fire to restore and/or sustain ecosystem health.
- Cooperate with communities at risk within the WUI to develop plans for risk reduction.
- Cooperate with regional partners in fire and resource management across agency boundaries.
- Reduce human-caused fires, with a special emphasis on reductions in developed areas such as communities, campgrounds, and transportation corridors.

4.7.2 Impacts of the Fire Program's Proposed Actions on Wildland Fire Ecology and Management

Wildfire prevention and suppression are important components of the FFO's overall management strategy. This section discusses the impacts of implementing the FFO's FMP. It also discusses the proposed actions concerning fuels management in the planning area. The FFO's wildland fire ecology and management program is referred to simply as the fire program in this section.

Fire Management Plan

The FMP strategies would be implemented under all of the alternatives. The FMP lays out activity plans for each FMP (Map 3, Appendix A). Though updated regularly to meet changing conditions and public demands, the FMP would establish:

- A fire management program that is cost efficient and commensurate with threats to life, property, public safety, and resources;
- Management strategies to achieve a wildfire initial attack success of less than 10 acres at 90 percent of the time;

- Strategies to use prescribed fire and non-fire fuels treatments to reduce WUI hazardous fuels and improve or sustain ecosystem health;
- Strategies not to use wildland fire as a management action;
- Strategies to reduce the occurrence of human caused fires; and
- Strategies to improve communication with WUI communities to develop plans for risk reduction.

Under the FMP, the FFO would continue to collaborate with federal and state land managers (such as the CDF), fire safe councils, and private landowners to develop cross-boundary fire management strategies. The FFO would work with its partners to identify high-priority, at-risk areas and to design and implement prescribed fires and other major fuels treatment projects for these areas. The FFO also would also do public outreach to reduce the frequency of human-caused fires.

The FMP also contains strategies for fighting fire and reducing fuels in environmentally important areas managed by the FFO. Under the FMP, prescribed fire would be used to mimic the natural role of fire in ecosystems to enhance resource values and to reduce wildfire risks in ACECs, wild and scenic river corridors, and areas with sensitive cultural and biological resources. Fire suppression methods that have the least impact on the landscape would be used in these areas. Modified or constrained suppression would occur in these areas and full suppression would occur in the other areas. A copy of the FMP is available through the BLM's FFO.

Other Proposed Actions

Under Alternative A, the FFO's existing fire program would continue to be commensurate with the evolving threat of wildfire to life, property, public safety, and environmental resources. The FFO would use prescribed fire and mechanical treatments to reduce fuel hazards. Collaborative opportunities would continue to be important. The proposed actions under Alternative A would benefit the planning area by reducing fuel hazards in WUI areas and around communities at risk. However, Alternative A lacks a clear emphasis; the FFO would prioritize work as it saw fit and according to the current public demand.

Alternative B emphasizes the use of fuels management to protect and enhance the environment. Treatments would be done using prescribed fire, mechanical mastication, herbicides, manual removal, or a combination of these methods. Priority would be given to projects that improve special status species habitat or protect sensitive cultural resources. This management direction would have a long-term and major beneficial impact on the environment; however, WUI areas may be adversely impacted by being subject to fewer fuels projects.

Alternative C emphasizes the use of fuels management to protect WUI areas and communities at risk. This emphasis would provide a long-term major benefit to these

communities by decreasing the risk of catastrophic fire in WUI areas. Mechanical and hand fuels treatments would be more likely to be used than prescribed fire because of proximity to homes, neighborhoods, businesses, and other property. Some biological and cultural resources that could benefit from fuels reduction projects could be adversely impacted. Significant cultural resources, such as standing stamp mills, could be lost in a wildfire.

Compared to Alternative B and C, Alternative D proposes a balanced approach to fuels management. Projects that benefit both the environment and communities at risk would be planned and implemented. A balanced approach would have minor beneficial long-term impacts on both the environment and communities at risk.

4.7.3 Impacts of Other FFO Programs' Proposed Actions on Wildland Fire Ecology and Management

Air Quality

The air quality proposed actions laid out in Chapter 2 direct the FFO to meet local, state, and federal air quality standards. Without question, these standards are beneficial to air quality, people, and the environment, but they do sometimes cause minor to moderate adverse long-term impacts on fuels management. The timing of prescribed burns is critical. To be effective, the burns must occur within prescription (temperature, time of day, time of year, humidity, etc.) and with adequate numbers of firefighting resources present. This can be an extremely small window in time—perhaps a few weeks or even a few days. Land managers must sometimes hold off from igniting prescribed burns because local officials predict that air quality would be temporarily impacted by prescribed burning. Agencies such as the BLM have had to wait until the following year (window of opportunity) to implement prescribed burn projects.

Vegetative Communities

Under all of the alternatives, the vegetation-related proposed actions would improve the existing conditions by controlling noxious invasive weeds and by promoting healthy and diverse vegetation. This would have long-term beneficial impacts on fire management in the planning area. Excessive vegetation (dense brush, conifer crowding, etc.) and “weed patch monocultures” are sure signs of unhealthy ecological condition in central California. These are also the same conditions that are often subject to intense and destructive wildfires. The vegetation-related proposed actions would help to prevent, restrict, or reduce the severity of these conditions. Alternatives B and D would particularly improve vegetation communities managed by the FFO and would therefore benefit wildfire management.

Visual Resources

Under Alternative B, all FFO-managed land within the planning area would receive either a VRM Class I or II assignment—the highest possible assignment. Under this scenario, the FFO might prohibit large-scale fuels reduction projects in this area. A large

fuel break, for example, might degrade Class I or II visual resources (i.e., a viewshed around a reservoir, etc.). This management scenario might cause moderate to major long-term impacts to fire management, especially where large areas of hazardous fuels exist. Alternatives C and D would have less stringent visual resource management goals. Under these alternatives, most FFO-managed land would receive Class III status. This might have beneficial impacts on wildfire management by allowing large “visually poor” fuel breaks or other fuels treatments.

Transportation and Access

OHV/motorized opportunities are provided throughout the planning area. Alternative A might cause the most adverse and long-term impacts, compared to Alternatives B, C, and D. Under Alternative A, open motorized vehicle/OHV use would be allowed (including cross-country access) on FFO-managed land that has not been previously closed or limited by a prior FFO action. Open use would increase the risk of wildfire ignition, especially during the warm, dry months. Under alternatives B, C, and D, motorized vehicle use would be limited to existing routes (and designated routes only under Alternatives B and D). This would greatly reduce the likelihood of igniting wildfire, especially during the dry season.

Recreation

Proposed use restrictions for the Merced River SRMAs could benefit fire management. The FFO would restrict overnight camping on the south bank of the Merced River (except in situations where the camper has written permission from the FFO). This area has a long history of illegal campfires, which could ignite a wildfire that would be devastating to the outstandingly remarkable recreation and scenic values of the Merced Wild and Scenic River corridor.

Lands and Realty (Land Tenure Adjustment)

Consolidation of FFO-managed lands (disposal of scattered parcels) would beneficially impact the wildfire management strategies. The FFO manages about 1,000 parcels. Many of these parcels are small and widely scattered. Some of the parcels contain significant fuels. More and more people are beginning to move into the area and live adjacent to these lands. They are concerned about the wildfire danger posed by the fuels on FFO-managed land. The FFO does not (and will not) have the time and staff to respond to the concerns of these people. Given the long-term budget outlook, it would not be feasible for the FFO to do dozens of fuels projects per year on small parcels. Under all of the alternatives, the FFO would work to dispose of small parcels (with low resource values) and consolidate lands in areas with either high-quality environmental resources or high-quality recreational resources or both. The end result is that the planning area would contain fewer small parcels with unmanaged fuels. The FFO could focus its wildfire management efforts in the larger blocks of public land.

Special Designations (ACECs and ACEC Use Restrictions)

Under the FMP, the ACECs and other sensitive areas would require minimum impact suppression tactics to avoid damage to special status species, rare soils, paleontological localities, and other important environmental resources. This strategy would have a moderate adverse impact on firefighters' ability to combat wildfire. However, firefighters would still have a variety of tools and methods at their disposal to fight fires in these areas. Fighting fire has not been a problem within ACEC boundaries and no communities would be threatened by the need to change fire-fighting tactics. Nevertheless, Alternatives B and D could be seen as having the greatest adverse impact on firefighting tactics because these alternatives propose the greatest number of new ACECs and ACEC additions.

Under alternatives B, C, and D, the proposed ACECs would have use restrictions. These restrictions could have a moderate beneficial impact on wildfire prevention efforts. Use restrictions for the Red Hills ACEC and proposed Pine Hill Preserve ACEC are proposed under Alternatives B and D only. These use restrictions would prohibit overnight camping. Restricting overnight camping would reduce the possibility of illegal campfires, which have led to wildfire ignition. It appears that Alternatives B and D are most beneficial to wildfire prevention.

4.7.4 Impacts of Wildland Fire Ecology and Management on the Environment and Other FFO Programs

The fire program's proposed actions are expected to have a beneficial impact on the environment, including air, soil, vegetation, and other resources. The impacts of implementing the fire program's proposed actions under the different alternatives on the natural resources of air, soil, vegetation/forestry, wildlife, cultural, paleontological, visual, and recreation is discussed elsewhere in this chapter. Refer to Sections 4.1 Air Quality, 4.2 Soil Resources, 4.4 Vegetative Communities, 4.8 Cultural Resources, 4.10 Visual Resources, and 4.12 Forestry.

4.7.5 Cumulative Impacts

No adverse cumulative impacts are anticipated from implementing the FMP or the fire program's proposed actions. Residential development is expected to increase in the planning area, creating a larger amount of wildland urban interface and potentially greater risks to life and property from wildfire. The FFO would continue to protect life and property under all of the alternatives, especially alternatives A, C, and D. Non-FFO fuels treatment projects would occur on lands throughout the planning area, particularly in the national forests, state parks, and around communities with active fire safe councils. CDF and local fire districts would also be heavily involved with wildfire prevention activities on private lands in the planning area. In fact, the FFO would be on the forefront of working with these organizations to encourage communities and landowners at risk to take proactive steps to reduce the threat and protect themselves. These efforts, in addition to FFO's ongoing work, would further reduce the threat of catastrophic wildfire in the planning area.

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4.8 Cultural Resources

4.8.1 Introduction

Refer to Section 2.8 for the proposed cultural resource management actions under each alternative and refer to Section 3.8 for a description of the cultural resources in the Sierra Planning Area. This section describes impacts that may be caused by implementing the cultural program proposals as well as impacts caused by implementing proposals from other resource programs. Cultural resources include prehistoric and historic archaeological sites, artifacts and rock art, sacred sites and other traditional cultural places, old buildings and structures, and landscapes.

For ease of reference, the management goals for cultural resources are restated below:

Identify, preserve, and protect significant cultural resources and ensure they are available for appropriate uses by present and future generations.

Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflicts with other resource uses.

4.8.2 Impacts of Cultural Resources Program's Proposed Actions on Cultural Resources

Under Alternative A, the FFO would continue to ensure that significant cultural resources are identified and given proper consideration in advance of project-level decisions, as required under Section 106 of the NHPA and other authorities. However, a comprehensive planning area-wide strategy for the inventory, protection, and interpretation of cultural resources is not explicitly addressed in the management actions of existing plans or, therefore, under Alternative A. The current guidance is derived from the various provisions of the NHPA, federal regulations associated with the NHPA, and Interior Department and BLM policies. Alternative A would not be as beneficial as the other alternatives, especially Alternatives B and D, on cultural resources.

The proposed actions common to the action alternatives would provide beneficial impacts on cultural resources. The FFO would continue to ensure that significant cultural resources are identified and given proper consideration in advance of project-level decisions, as required under Section 106 of the NHPA. In addition, the FFO would be required to consult with the State Historic Preservation Officer in situations where a proposed action would adversely affect a significant cultural resource, providing further beneficial, long-term impacts on the resource.

Under Alternative B, the FFO proposes several cultural resource program actions. These include: creating an alternate access point for the Stevens Trail; improving protection for cemeteries, graves, and other human burial sites; developing an interpretive program for cultural resources in the South Yuba River Comprehensive Management Plan area; developing a preservation plan for the Excelsior Ditch; and developing an interpretive program for cultural resources in the South Fork American River Management Plan area.

These actions would have a moderate beneficial impact on cultural resources, compared with Alternative A.

Alternative C includes proposed actions that emphasize recreational use of cultural resources. The proposed actions include the restoration of the Blue Wing Trail in the American River Assessment Area and a plan to interpret the Indian Diggings Cemetery in the CRAA. This alternative is more protective of cultural resources than Alternative A but does not include the comprehensive protection, preservation, and maintenance programs included in Alternative B. Additional interpretative opportunities could provide indirect beneficial impacts on cultural resources by emphasizing the value of the resource and the importance of protection. However, even if done very well, interpretation would probably have an adverse impact on the resource. Features and artifacts associated with the interpreted resources could be looted or vandalized.

Alternative D provides specific protection, preservation, and maintenance programs that would represent beneficial impacts on cultural resources. The management actions included in Alternative D provide more beneficial impacts than Alternative A and are comparable to those proposed under Alternative B.

4.8.3 Impacts of Other FFO Programs' Proposed Actions on Cultural Resources

All FFO Programs

Management of cultural resources on BLM-administered land is directed by various federal statutes, regulations, executive orders, and policies. Section 106 of the NHPA is perhaps the key authority. It requires federal agencies to take into account the effects of their actions on significant cultural resources and outlines federal agency procedures for identification, management, protection, preservation, and use of significant cultural resources. The principal federal regulations that guide implementation of the NHPA are found at 36 CFR 800 (Protection of Historic Properties) and 36 CFR 60 (National Register of Historic Places). The BLM National Programmatic Agreement between BLM, the Advisory Council on Historic Preservation, the National Conference of State Historic Preservation Officers, and the California Statewide Protocol provide alternative procedures for implementing 36 CFR 800.

Cultural resources on federal lands are identified through field surveys, documentary research, and consultation, actions that are taken in advance of most land use decisions. Not all cultural resources are significant and qualified for protection under the NHPA. Significant resources are termed "historic properties" and are defined in 36 CFR 800.16(1) as "any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, the NRHP." For management purposes, BLM assumes significance of cultural resources until conclusively demonstrated otherwise through formal evaluation procedures. Cultural resources may be evaluated for significance through further research to determine their eligibility for listing in the National Register of Historic Places.

Identification of cultural resources can require a tremendous level of specialist effort, especially when large public land holdings are involved. Treatments and procedures developed to protect and preserve individual historic properties are typically tailored to specific resources, and such treatments may be complex. Therefore, management strategies for protection of cultural resources are often developed in specific plans that focus on certain resource types or particular areas of cultural sensitivity within the larger planning area.

The FFO is obliged to consider potential effects on cultural resources in advance of management decisions; therefore, the FFO takes very few actions that would change the significant qualities of specific historic properties. Instances to the contrary are either inadvertent or the result of rare, overriding considerations, such as immediate protection of life or property. The conditions under which the FFO would elect to permit adverse effects to occur would be limited to specific instances that typically are not foreseeable at the broad planning level.

Thus, the direct effects of management actions on cultural resources, with a few exceptions, are similar for all alternatives. However, the alternatives do vary significantly in the extent to which the FFO can protect cultural resources from indirect effects over which the FFO has limited control. For example, the actions of private citizens on public land, such as OHV use or the illegal collection of artifacts, can severely damage cultural resources.

Forestry

Under each of the alternatives, the FFO would allow timber sales and thinning projects. These operations could have an adverse impact on cultural resources by clearing vegetation and exposing artifacts to inadvertent actions such as trampling or theft. Prior to allowing sales to proceed, however, the FFO would conduct a survey to assess the potential for the presence of cultural resources and to place appropriate mitigation on the permit. See impacts under each alternative below for more information.

The FFO forestry program is minor in comparison to many other Western Field Offices. Green timber sales consist primarily of thinning efforts to enhance habitat, with average sales of 50,000 board feet per year. It is possible that green timber sales would be initiated in response to other FFO programs (ROW authorization, fuel break construction, etc.) and decisions made in community-based plans. Timber sales that involve the salvage of timber damaged by insects or fire would continue. The average salvage sale has been less than 250,000 board feet per year and would probably remain at this level. The impact on cultural resources would be minor. Thinning projects would reduce the risk of catastrophic wildfire, which would be a beneficial impact, but the removal of vegetation could expose artifacts and leave them vulnerable to vandalism or theft.

Under Alternative C, timber production would increase above current levels. The FFO would be required to complete inventories of its existing forestland and timber volume. Green timber sales would be based on sustained yield calculations derived from these inventories. The average annual yield would gradually increase. The increase in timber

production would require FFO to put more emphasis on plantations and other reforestation projects. Fuels projects would be needed to maintain plantations. Impacts on cultural resources would be slightly higher under this alternative than under Alternative B. However, protections under the NHPA would largely mitigate the impacts.

Under Alternative D, the FFO's forestry program would focus on forest health, and timber sales would normally involve salvage of timber damaged by insects or fire. Average salvage sales have totaled less than 250,000 board feet per year, and this level would continue under Alternative D. Impacts on cultural resources would be slightly lower than under Alternative B. As with the other alternatives, protections under the NHPA would largely mitigate potential impacts.

Wildland Fire Ecology and Management

Although protection of cultural resources during wildfires is an element of the FMP, wildfire and wildfire suppression are a major cause of damage to cultural resources. Thus, fire management proposals can have major implications for cultural and historic resources. The FFO's FMP provides overall direction for reducing the threat of catastrophic fire for all resources, including sensitive cultural resources. Fuel reduction projects would also reduce this threat over time, but, until the plan is fully implemented, cultural resources would be at a relatively greater risk from adverse impacts. Alternatives B, C, and D are identical in terms of the amount of acreage that would receive fuels treatment. All would help protect cultural resources from wildfire impacts. Alternative B provides additional protection for sensitive cultural resources, including standing historic structures—the type of cultural resource most vulnerable to wildfire effects.

Lands and Realty

Under all of the alternatives, the FFO would continue to process ROW applications on a case-by-case basis and consider land tenure adjustment proposals to consolidate land management. All proposals for ROWs and land tenure adjustments would follow the requirements of the NHPA to ensure the lands actions do not cause an adverse impact on significant cultural resources. Site-specific surveys would be required to determine the extent and significance of any resources that may be eligible for listing in the NRHP. Properties potentially eligible for listing would not be transferred out of federal ownership. The alternatives are generally similar in this regard. However, it should be emphasized that Alternatives B and D propose to acquire significant cultural resources, and such acquisition would have a beneficial impact. Alternatives B and D would probably have the greatest beneficial impact on cultural resources.

Recreation

The alternatives vary in the extent to which lands are assigned to either special recreation management status (e.g., SRMAs) or to a default custodial management status (e.g., ERMAs). SRMAs provide a greater degree of protection to cultural resources because of the intensity of management of public use. Two major agents of indirect impact are

public access to unmanaged cultural resources and wildfire on lands, regardless of special management status.

Recreation demand will continue to increase. Public access to unmanaged cultural resources consistently produces a deterioration of the resource through inadvertent actions such as trampling or through deliberate actions such as artifact theft or vandalism of historic-era buildings and structures. Management of public access and management of cultural resources reduce impacts from recreation use.

Under Alternative A, the FFO would designate no SRMAs. Resources would be protected from recreation impacts on most public lands only through existing laws under a program of custodial management. New non-motorized trails would be authorized to accommodate the expected increases in recreation use.

Under Alternatives B, the FFO would designate four SRMAs. New non-motorized trails would be authorized to accommodate the expected increases in recreation use. Impacts would be similar to those under Alternative D (see below).

Under Alternative C, the FFO would designate five SRMAs. New non-motorized trails would be authorized to accommodate the expected increases in recreation use. Alternative C proposes the most new trails among all the alternatives, producing a major increase in the risk of indirect impacts on cultural resources from recreational access and potential increased surface disturbance.

Under Alternative D, the FFO would designate four SMRAs. While this alternative proposes fewer SRMAs than Alternative B, it does recommend more than Alternatives A and C and focuses the FFO's limited resources on high value environmental and cultural resources. Impacts on cultural resources would be minor and beneficial.

The ROS zoning strategies for each proposed SRMA would be the same under all of the alternatives. The ROS zoning would enhance river-oriented recreation. The ROS is discussed in the recreation sections (especially 2.15). In all of the SRMAs, the ROS zoning would create relatively large areas that would be managed specifically for remote use. High Use and Transitional Use areas would be confined to relatively small areas at key access points and along hiking trails. The proposed ROS strategies are generally beneficial to cultural resources and other environmental resources because river-oriented recreation is generally low impact. The low use areas would see little use compared to the High Use areas. Recreation activities such as rafting, hiking, nature viewing, backcountry camping, etc., in remote use areas generally would not adversely impact cultural resources. Primitive campgrounds and trails would be routed away from cultural resources. Most visitors would recreate in the proposed High Use areas. These areas (campgrounds, parking areas, day-use areas, boat launches, etc.) are relatively confined and receive considerable management attention (ranger patrols, regular maintenance, etc.). Protection of cultural resources and other environmental resources is a high priority in these areas. The FFO carefully plans recreational development in these areas using best management practices to avoid or minimize impacts on cultural resources. Heavily used trails in transitional areas are also planned and built using best management

practices. The FFO is careful to route the public away from sensitive cultural resources—those containing archaeological remains that would be vulnerable to looting or vandalism. OHV use and other kinds of high-impact recreation that also threatens sensitive resources would be prohibited or extremely limited within the proposed SRMAs (confined to parking areas and designated routes).

Transportation and Access

Currently, all lands not previously closed are open to OHV and motorized use. Impacts on cultural resources would be major and adverse and could be expected to increase. Motorized access throughout the planning area presents an ongoing threat to cultural resources under the current plan.

Under Alternative C, new non-motorized trails would be authorized to accommodate the expected increases in recreation use, and motorized vehicle/OHV use would be limited to existing routes not previously closed. There would be a commensurate increase in access to unmanaged cultural resources.

Under Alternatives B and D, the FFO would limit motorized vehicle/OHV use to a select number of designated routes, with all other lands being closed. The selected routes would not impact any known cultural resources. The FFO would also create new non-motorized trails to accommodate the expected increases in hiking, mountain biking, and horseback riding use. Less non-motorized trails would be built under these alternatives than under Alternative C. By reducing motorized vehicle use and access, Alternatives B and D would have far less of an adverse impact than Alternatives A and C.

Special Designations (Wild and Scenic Rivers and ACECs)

Special designations receive management attention and priority, and generally have a beneficial impact on cultural resources, regardless of their overriding intent or focus. The current plan has three congressionally designated WSR, one wilderness study area, one state wild and scenic river, and six ACECs. These designations place additional management attention on natural and cultural resources, affording them greater protection.

Alternative B would designate six ACECs, and expand three others, and recommend seven additional rivers for designation as wild and scenic rivers. The impetus for these designations is largely to protect important natural resource values, but these designations would provide important protection for cultural resources through enhanced management of the areas.

Under Alternative C, no new ACECs would be designated, and one additional river segment—the South Fork American River—would be recommended for designation as a wild and scenic river. The relative de-emphasis on protecting natural resources under this alternative would have an indirect adverse impact on cultural resources, though the South Fork American does have outstandingly remarkable cultural resource values that would benefit from wild and scenic status.

Under Alternative D, the FFO would recommend two additional wild and scenic river segments (South Fork American and North Fork/Main Stem Mokelumne), designate five new ACECs and expand three others, and designate the Dutch Flat/Indiana Hill Research Natural Area. While this alternative proposes fewer special designation areas than Alternative B, it does recommend more than Alternatives A and C, and it focuses the FFO's limited resources on high value environmental and cultural resources. Impacts on cultural resources would be minor and beneficial. The two wild and scenic river segments both have outstandingly remarkable cultural resource values that would benefit from wild and scenic status.

4.8.4 Impacts of the Cultural Resources Program's Proposed Actions on the Environment and Other FFO Programs

The cultural resources program's proposed actions are expected to have a beneficial impact on the environment, including air, soil, water, and other resources. Some of the proposals may benefit recreation. There may, however, be minor impacts on other programs (such as transportation and access).

4.8.5 Cumulative Impacts

While cumulative impacts on cultural resources are difficult to predict, the increased or strengthened management programs for the protection and long-term preservation of significant cultural resources (as proposed under Alternatives B, C, and D) would ultimately prevent cumulative impacts from occurring. Under these alternatives, the FFO would continue to actively identify and preserve significant cultural resources under its administration. Negative impacts on these resources would be avoided or minimized through the Section 106 NHPA process as well as through other laws, regulations, and policies. Recreation, access, and motorized vehicle use would be managed in a way that limits potential impacts on cultural resources. By providing the greatest level of protection and limiting public access to certain significant cultural resources, Alternatives B and D would likely have the most beneficial impact on significant and nonrenewable cultural resources. Under these alternatives, the FFO would also potentially acquire significant cultural resources that perhaps do not currently enjoy federal or state protection.

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4.9 Paleontological Resources

4.9.1 Introduction

Refer to Section 2.9 for the paleontological resource proposed actions under each alternative, and refer to Section 3.9 for a description of existing paleontology conditions in the Sierra Planning Area.

For ease of reference, the management goal for paleontology is restated below:

- Identify, preserve, and protect significant paleontological resources, and ensure they are available for appropriate uses by present and future generations.

4.9.2 Impacts of the Paleontological Resources Program's Proposed Actions on Paleontological Resources

Under Alternative A, there would continue to be no land-use plan decisions that specifically address paleontological resources on FFO-managed land. Alternative A could result in adverse impacts because there is lack of management guidance to prevent or minimize disturbance of paleontological resources. The impacts would be adverse but are likely to be minor because the FFO complies fully with current laws, regulations, and policies concerning paleontological resource protection.

Alternatives B, C, and D would protect paleontological resources by assessing threats to these resources and implementing measures designed to mitigate adverse impacts. These actions would result in beneficial impacts since they provide a clear management direction for paleontological resources.

Alternative B would designate the Dutch Flat/Indiana Hill paleobotanical resources as a RNA, close all motorized vehicle access to these resources (except for study by qualified researchers and for administrative purposes), and require the FFO to inventory and evaluate paleontological resources under its control. These actions would have beneficial impacts on paleontological resources because unchecked access to these resources could cause increases in unauthorized collection and resource damage as a result of off-road motorized vehicle use. Alternatives B and D would provide the most protection for paleontological resources in comparison with the other alternatives.

4.9.3 Impacts of Other FFO Programs' Proposed Actions on Paleontology

The occurrence of significant paleontological resources is highly localized and tends to occur at specific, known locations. The main impact on paleontological resources is unauthorized collection and vandalism by the public. Motorized vehicles and mechanized forms of travel enhance the threat because they enable relatively easy access to paleontological resources and because they create more intensive ground disturbance. Other recreational activities, such as hiking and equestrian activities, also have the

potential to impact paleontological resources, although at a less significant level because access is generally not as easy or quick, and ground disturbance from these activities is generally less than motorized vehicles.

Transportation and Access

Paleontological resources on BLM-administered land are public resources; they are managed by BLM on behalf of the American people. The resources should be preserved and used for enjoyment of present and future generations. Unfortunately, the greatest threat to paleontological resources on FFO-managed land has been from theft and damage caused by the use of off-highway vehicles off of existing routes. The better the motorized vehicle access/OHV to the resource, the greater the chance the resource will be looted and destroyed. Therefore, the motorized vehicle/OHV route designation proposals are key to understanding potential impacts to paleontological resources.

Under Alternative A, the FFO would allow all FFO-managed land in the planning area to be open to motorized vehicle/OHV use except where previously closed or limited by a FFO action. Use of motorized vehicles would likely have moderate adverse impacts on paleontological resources due to increased access and ground disturbance caused by “off-road” OHV use. This alternative would afford the least protection to paleontological resources compared with the other alternatives.

Alternatives B, C, and D would limit motorized vehicle/OHV use to certain areas. These alternatives would limit access to paleontological resources, thereby resulting in less adverse impacts. Alternative C would limit motorized vehicle/OHV use to existing routes that have not already been closed by a previous FFO action. This alternative would have a beneficial impact on paleontological resources, but less so than Alternatives B and D which would limit motorized vehicle/OHV use to designated routes. The designated-routes scenario would limit access to scientifically important resources. This would alleviate potential disturbance of paleontological resources caused by looting and cross-country OHV use.

4.9.4 Cumulative Impacts

There are no cumulative impacts expected from the proposed actions for paleontological resources. Adverse impacts on paleontological resources on non-BLM lands in the planning area may occur from residential development on private lands and from mining and timber activities.

4.10 Visual Resources

4.10.1 Introduction

Refer to Section 2.10 for the proposed VRM actions, and refer to Section 3.10 for a description of the existing conditions relating to VRM in the Sierra Planning Area.

For ease of reference, the management goal for VRM is:

- Protect and enhance the scenic qualities and visual integrity of the characteristic landscapes in the Sierra Planning Area.

This section discusses the impacts of implementing the visual resources program's proposed actions on visual resources within the planning area. The BLM handbook (8410-1) discusses BLM's policy concerning VRM. This section deals only with the implications of the proposed actions on visual resources on FFO-management land in the planning area. It is important to point out that, in many areas, FFO-managed visual resources/lands are heavily intermixed with private lands, which the FFO has no authority over. The FFO may set high visual management objectives for many areas with a considerable amount of FFO-managed land and outstanding scenery, but meeting those objectives can be very challenging (if not impossible) because of development of private lands in these areas.

As part of the scoping phase of the RMP process, the FFO contracted an inventory of the existing visual resource condition. Only areas with extensive amounts of FFO-managed lands were inventoried by the contractor. Other areas have assigned visual resource goals or have been previously inventoried by FFO staff for other projects.

Table 4-1 Provides an Overview of Visual Resources Inventory and the VRM Proposed Actions

Area	Existing Condition/ Inventory Class	Alternate A	Alternate B	Alternate C	Alternate D
Inimim Forest	Class II (1,813 acres)	Case-by-case assessment	Class II (1,813 acres)	Class II (1,813 acres)	Class II (1,813 acres)
South Yuba	Class II (6,685 acres)	Class II (6,685 acres)	Class II (6,685 acres)	Class II (6,685 acres)	Class II (6,685 acres)
North Fork American WSR	Class I (7,244 acres)	Class I (7,244 acres)	Class I (7,244 acres)	Class I (7,244 acres)	Class I (7,244 acres)
South Fork American	Class II to IV (6,065 acres)	Class II (6,065 acres)	Class II (6,065 acres)	Class II (6,065 acres)	Class II (6,065 acres)
Clark Mountain (S. F.American)	Class II (300 acres)	Class I (300 acres)	Class I (300 acres)	Class I (300 acres)	Class I (300 acres)
Pine Hill Preserve	Class III (3,236 acres)	Case-by-case assessment	Class II (3,236 acres)	Class III (3,236 acres)	Class II (3,236 acres)

Table 4-1 Provides an Overview of Visual Resources Inventory and the VRM Proposed Actions

Area	Existing Condition/ Inventory Class	Alternate A	Alternate B	Alternate C	Alternate D
Cosumnes River (Main Stem)	Class II to III (541 acres)	Case-by-case assessment	Class II (541 acres)	Class III (541 acres)	Class II (541 acres)
North Fork Cosumnes	Class II (1,605 acres)	Case-by-case assessment	Class II (1,605 acres)	Class III (1,605 acres)	Class II (1,605 acres)
Middle Fork Cosumnes	Class II (1,819 acres)	Case-by-case assessment	Class II (1,819 acres)	Class III (1,819 acres)	Class II (1,819 acres)
Cosumnes River Preserve	Class II to III (2,035 acres)	Case-by-case assessment	Class II (2,035 acres)	Class III (2,035 acres)	Class II (2,035 acres)
North Fork/ Main Mokelumne	Class II (3,738 acres)	Case-by-case assessment	Class I (3,738 acres)	Class II (3,738 acres)	Class I (3,738 acres)
Middle Fork Mokelumne	Class II (824 acres)	Case-by-case assessment	Class I (824 acres)	Class III (824 acres)	Class I (824 acres)
South Fork Mokelumne	Class II (1,392 acres)	Case-by-case assessment	Class I (1,392 acres)	Class III (1,392 acres)	Class II (1,392 acres)
New Melones Reservoir area	Class II to III (7,108 acres)	Case-by-case assessment	Class II (7,108 acres)	Class III (7,108 acres)	Class II (7,108 acres)
Tuolumne WSR (lower)	Class I (1,396 acres)	Class I (1,396 acres)	Class I (1,396 acres)	Class I (1,396 acres)	Class I (1,396 acres)
North Fork Tuolumne	Class I (1,141 acres)	Case-by-case assessment	Class I (1,141 acres)	Class II (1,141 acres)	Class I (1,141 acres)
Turnback Creek	Class II (530 acres)	Case-by-case assessment	Class I (530 acres)	Class II (530 acres)	Class II (530 acres)
Red Hills	Class II (10,131 acres)	Case-by-case assessment	Class II (10,131 acres)	Class III (10,131 acres)	Class II (10,131 acres)
Lake Don Predro/ Hwy 49	Class II to IV (11,344 acres)	Case-by-case assessment	Class II (11,344 acres)	Class III (11,344 acres)	Class III (11,344 acres)
Lake McClure/ Hwy 49	Class II to III (25,967 acres)	Case-by-case assessment	Class II (25,967 acres)	Class III (25,967 acres)	Class II (25,967 acres)
Merced WSR (wild section)	Class I (540 acres)	Class I (540 acres)	Class I (540 acres)	Class I (540 acres)	Class I (540 acres)
North Fork Merced	Class I (1,880 acres)	Case-by-case assessment	Class I (1,880 acres)	Class II (1,880 acres)	Class I (1,880 acres)
Merced River WSA	Class II (11,643 acres*)	Case-by-case assessment	Class I (11,643 acres*)	Class III (11,643 acres*)	Class II (11,643 acres*)
Other FFO-managed areas	Indeterminate	Case-by-case assessment	Class II 122,409 acres	Class III 153,731 acres	Class III 122,708 acres

Table 4-1 Provides an Overview of Visual Resources Inventory and the VRM Proposed Actions

Area	Existing Condition/ Inventory Class	Alternate A	Alternate B	Alternate C	Alternate D
Totals					
Class I	12,201 acres	9,480 acres	30,628 acres	9,480 acres	17,063 acres
Class II	Indeterminate	12,750 acres	200,758 acres	21,852 acres	80,271 acres
Class III	Indeterminate	Indeterminate	0 acres	200,054 acres	134,052 acres
Class IV	Indeterminate	Indeterminate	0 acres	0 acres	0 acres

* The acreage total for the Merced River Wilderness Study Area does not include 540 acres in the Merced Wild and Scenic River corridor (wild section) and 900 acres in the proposed North Fork Merced Wild and Scenic river corridor.

4.10.2 Impacts of VRM Proposed Actions on Visual Resources

Under Alternative A, the FFO would continue to manage visual resources under its control according to federal laws, regulations, and policies. Areas that have previously received VRM classes would continue to be managed according to the management goals of these class assignments. These areas include FFO-managed lands along the South Yuba River and the South Fork American River. Both of these areas received classes through the community based planning process, and it was decided to manage the visual resources of these areas using Class II goals. (A small portion of the South Fork American River area will be managed as Class I.) The FFO also attempts to maintain or enhance outstanding visual resources in congressionally designated wild and scenic river corridors. These areas include the North Fork American River (Class I), the Tuolumne River (Class I) and the Merced River (Class I, wild section only). Under Alternative A, areas that have not previously received VRM classes would be assessed on a case-by-case basis using existing VRM inventory data.

Though outstanding visual resources managed by the FFO would continue to receive consideration and protection under Alternative A, the impacts of this alternative could be moderately adverse and long-term. A case-by-case strategy, as proposed under this alternative, discourages the management of the visual resources on a viewshed scale. The FFO manages considerable amounts of public land that have not been assigned a VRM class. These areas include the North Fork/Main Stem Mokelumne River canyon, the Lake Don Pedro/Highway 49 viewshed, and the Lake Mclure/Highway 49 viewshed. The management of visual resources in these areas is becoming increasingly important to the public (due to urban encroachment) and would be improved by the assignment of VRM classes, which encourages a more even, consistent approach to dealing with visual resource issues.

Alternative B proposes a management scenario that would be most beneficial to the protection of visual resources within the planning area. Under this alternative, the FFO would manage all land under its jurisdiction as either Class I or Class II—the highest

VRM classes possible. Areas such as the North Fork Mokelumne, Middle Fork Mokelumne, Turnback Creek, and Merced River WSA would be managed as Class I. High-quality visual resources exist in these areas and would benefit from this class assignment. Activities that might degrade these visual resources (i.e., ROW/road construction, large-scale mining, timber sales, etc.) may be either prevented or redesigned to minimize impacts on visual resources.

Under Alternative C, most FFO-managed land within the planning area would receive Class III status. A small amount of land—about 30,000 acres—would be managed as either Class I or Class II. These include lands previously assigned VRM classes, including wild and scenic river corridors and areas subject to community based plans. Outstanding visual resources would continue to receive proper consideration under this management scenario; however many high-quality but less prominent visual resources would not benefit from protection afforded by a Class II status as would under Alternative B. The FFO might be more likely under Alternative C to authorize activities in these areas that are beneficial to recreation, economic development, and other public interests but that might degrade visual resources. The impacts of Alternative C on visual resources would probably be adverse but minor and would certainly be more localized.

Alternative D seeks to protect visual resources yet meet increasing public demands to use FFO-managed land in ways that might degrade visual resources. These uses include high-voltage transmission line construction (as part of a ROW authorization), large-scale mining, timber sales, etc. A wide variety of viewsheds, landscape, and specific visual resources would receive high VRM class assignments (Class I and II). Remaining lands would be assigned Class III, which gives the FFO flexibility in managing visual resources and making management decisions that could either protect or degrade visual resources. Inventory data suggest that areas with Class II caliber visual resources exist in the remaining lands. A Class III assignment would give the FFO more flexibility in managing these resources. Potentially, a project that degrades Class II visual resources could be allowed if it is in the public's best interest. Projects could potentially be denied to preserve visual resources.

4.10.3 Impacts of Other FFO Programs' Proposed Actions on Visual Resources

Lands and Realty (Land Tenure Adjustment)

All of the alternatives could be viewed as having a long-term beneficial impact on visual resources because under each management scenario, the FFO would strive to consolidate land in areas with outstanding visual resources or maintain areas (viewsheds) with considerable amounts of FFO-managed land.

Under Alternative A, the FFO would continue to focus on providing access to public lands, consolidating FFO ownership in river corridors (including wild and scenic rivers), and acquiring additional special status habitat (including in the Red Hills, TRAA). This would continue to have long-term beneficial impacts on visual resources.

Under Alternative B, the emphasis would be on land exchanges, land donations, and LWCF acquisitions to acquire riparian habitat, riparian forest, blue oak woodland, Central Valley wetlands, grassland vernal pools, and significant cultural resources. An important goal under Alternative B would be to expand new and existing ACECs and preserves, including the Red Hills ACEC and Pine Hill Preserve, both of which are important viewsheds. The impacts of Alternative B would be long-term and beneficial.

Alternative C proposes to increase access to FFO-managed parcels and consolidate FFO ownership in SRMAs and wild and scenic river corridors with high recreational values. Proposed SRMAs like the South Yuba River, the North Fork American River, and the Merced River are also in part wild and scenic corridors known for their outstanding visual resources. The FFO would attempt to consolidate its ownership in these areas, if possible, to protect and enhance these important visual resources. The impacts would be long-term and beneficial.

Alternative D is similar to Alternative A. It would direct the FFO to consolidate land ownership in areas with either outstanding resources, high recreational values, or both. Under this alternative, there is an increased potential for the FFO to acquire and protect a wider range of important visual resources (Sierra Nevada river canyons, Central Valley wetlands, the Red Hills) within the planning area.

Special Designations

ACECs

The FFO is required to manage an ACEC in ways that protect and prevent irreparable damage to the values for which the ACEC was designated. In cases where ACECs were designated to highlight a natural hazard, the FFO would be obligated to keep the areas of the hazards safe for the public. The FFO currently manages six ACECs, all of which were designated to protect important natural resources, including rare soil formations, special status species, and the Merced River. Under alternatives B and D, several new ACECs and ACEC additions are proposed to protect important natural resources, including rare soils, special status species, and scientifically important paleontological resources. If these areas are designated, the FFO would be required to protect these important natural resources. This means that activities that have the potential to cause a significant amount of ground disturbance (i.e., timber sales, large-scale mining, and the construction of roads, high-voltage transmission lines, telecommunication towers, etc.) may not be allowed in these areas or would require careful planning to avoid important resources. This could potentially be beneficial to visual resources because these same ground-disturbing activities often degrade visual resources. Therefore, it appears that Alternatives B and D could have the most beneficial impact on visual resources.

Alternative B proposes seven new ACECs and three additions to existing ACECs. Alternative D proposes six new ACECS and three additions. Both would have long-term benefits on visual resources. Alternative B would perhaps be more beneficial than Alternative D, but not by much. Under Alternatives A and D, no new ACECs would be designated; only the existing six ACECs would remain designated. This does not

necessary mean adverse impacts on visual resources would result, but clearly it would not be as beneficial in these areas.

Wild and Scenic Rivers

Many of the rivers in the national wild and scenic river system were determined to be eligible because they have outstanding scenic values (among other values). The managers of these rivers are required to protect and enhance outstanding scenic values, which is beneficial to VRM. The FFO currently manages three national wild and scenic rivers and one state wild and scenic river. All have outstanding visual qualities that the FFO protects. Under Alternative B, the FFO would recommend to Congress that an additional seven rivers would be eligible and suitable to become part of the national system. Many of these rivers are eligible because they have outstanding visual resources or other outstandingly remarkable values (i.e., wildlife, recreation, cultural resources, etc.), the management of which would probably lead to increased protection of the river's visual resources.

Under Alternative A, no new rivers would be recommended. Under Alternative C, only one would be recommended, and, under Alternative D, two would be recommended. Clearly, Alternative B, which would recommend seven new rivers, would be most beneficial to the visual resources in these areas. Under this alternative, many river corridors with outstanding or notable visual resources could potentially be included in the national wild and scenic river system, pending Congressional action. The FFO would be required by law to protect and enhance these resources. Under Alternative D, only two rivers would be recommended as eligible and suitable. One of these rivers, the North Fork/Main Stem Mokelumne, has outstandingly remarkable scenic values which would receive increased protection if the river becomes part of the national system. The other river—the South Fork American—has outstanding scenery in some areas which would also benefit from national wild and scenic status. Under Alternative A, no rivers would be recommended, and under Alternative C, only one would be recommended. These two management scenarios are not as beneficial as the scenarios proposed under Alternatives B and D, but they probably would not lead to adverse impacts on visual resources. High-quality visual resources would still receive proper consideration pursuant to federal laws, regulations, and policies. The VRM class is perhaps a moot issue because of FFO's mandate to protect scenic values, but a high VRM class can bolster protection.

Other FFO Programs

Visual resources on FFO-managed land within the planning area are given the appropriate level of management consideration, as required by federal laws, regulations, and policies. Regardless of which alternative is selected for the RMP, any FFO actions that have the potential to adversely impact visual resources would be carefully planned and reviewed by the FFO staff. Proposed actions that did not meet the VRM class objective would not be allowed. VRM class assignments, NEPA requirements, and other factors would be taken into account in this planning process. While the FFO would do everything it could to protect outstanding visual resources (pursuant to its operating procedures and land use plans), it is clear that the proposed alternatives are not equal with

respect to visual resources protection. Under Alternative C, the FFO proposes to increase opportunities for members of the public and other entities to use FFO-managed land within the planning area. This means increased opportunities for timber sales, minerals development, and land use authorizations (ROWs, leases, etc.). The VRM class assignments under Alternative C reflect this emphasis on use. Most land would be assigned Class III, giving the FFO flexibility to allow uses that might degrade visual resources. The increase in use means potentially increased adverse impacts to visual resources. The impacts could be predicted to be localized (to specific project areas), moderate in scale, and both long- and short-term. Alternative D and especially Alternative B would assign VRM Class I and II to a much greater amount of FFO-managed land than Alternatives A and C and would thus increase protection for visual resources.

4.10.4 Impacts of the VRM Proposed Actions on the Environment and Other FFO Programs

Refer to other sections in Chapter 4, including Vegetation (4.4) and Lands (4.17), for a discussion of how the VRM proposed actions could impact the environment and other FFO programs.

4.10.5 Cumulative Impacts

Many federal- and state-controlled public lands abut or are near FFO-managed lands. These agencies utilize the VRM system for classifying their holdings and are probably not managing visual resources inconsistently with the FFO. Private property in the planning area is not subject to VRM requirements and policies, and private landowners are not required to follow VRM guidelines except in certain cases, when they require a federal or state permit. Private lands can be developed or utilized for agricultural, industrial, or commercial uses without attention to overall visual resource issues. Cumulative impacts to visual resources could occur as development pressure increases in the planning area. Because Alternative B and D would allow the least degradation of visual resources, they also have the least potential for cumulative impacts. Potential impacts from Alternative C, which has less stringent visual resource objectives, would be offset by careful project planning, public review, using best management practices, and implementing mitigation measures. The FFO's goal of consolidating land in key river viewsheds would go a long way to avoiding cumulative impacts.

The FFO's management of visual resources could affect those people capable of viewing and observing FFO-managed lands from adjacent private lands. The FFO's visual resource management direction, as proposed under all of the alternatives, generally has a beneficial impact on adjacent private lands because the management contributes to desirable visual qualities for entire landscapes and viewsheds. Development of undeveloped private lands in the planning area to residential and commercial uses continues to alter visual quality. Observers on FFO-managed land will be more likely to see an altered landscape as this growth on adjacent private lands continues. This is especially true for smaller parcels of BLM lands that abut growing urban areas.

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4.11 Caves

4.11.1 Introduction

Refer to Section 2.11 for the proposed caves management actions under each alternative, and refer to Section 3.11 for a description of existing caves conditions in the Sierra Planning Area.

For ease of reference, the management goal for caves is restated below:

- Manage caves to protect and maintain significant cave resources in the planning area.

4.11.2 Impacts of the Caves Program's Proposed Actions on Caves

There are no proposed for actions specific cave resources under Alternative A. Accordingly, a lack of management direction could result in adverse impacts on cave resources because the FFO would not likely take proactive steps to reduce the chance for cave disturbance or take other necessary management actions.

Alternatives B, C, and D include proposed actions specific to cave resources. All of these alternatives would focus the FFO's attention on Crystal Palace Cave, located in the SRAA. This cave is perhaps the most extensive, well-known, and important cave resource that the FFO manages.

Under Alternatives B, C, and D, the FFO would be required to complete a geospatial survey of Crystal Palace Cave to determine its location with respect to FFO- and USFS-managed lands. This cave resource would benefit from this survey because cave management is dependent on accurate locational information.

Under Alternative B, the FFO would conduct a study to determine whether Crystal Palace Cave is significant according to federal regulations. The FFO would also develop a plan to manage the cave. Both proposed actions would have a long-term beneficial impact on the cave. Overall, Alternative B would likely have the greatest beneficial impact on cave resources because it would require the FFO to take the most proactive steps to learn about and manage caves under its jurisdiction.

4.11.3 Impacts of Other FFO Programs' Proposed Actions on Caves

The limestone caves that occur on FFO-managed land in the planning area are fragile and can be impacted by a variety of activities. Perhaps the most damaging activity is casual use by people who are ignorant of fragile cave resources and who intentionally vandalize or inadvertently damage the caves by carving their names in the wall or by removing cave features such as stalagmites. Fragile cave-dwelling wildlife such as rare bats and other species could be disturbed. Increased access generally causes increased damage to caves. Transportation and access are to this key analysis.

Transportation and Access

Under Alternative A, all FFO-managed land not previously closed would be open to motorized vehicle/OHV use, including cross-country use. Such activities could adversely impact cave resources because this management scenario improves access to cave locations. The impacts would probably be minor; many caves on FFO-managed land are already being used by the public on a regular basis. However, use of motorized vehicles such as OHVs in close proximity to cave entrances may disrupt sensitive flora and fauna that live within caves. Alternative A might result in minor adverse impacts on caves.

Under Alternative C, OHV use would be limited to existing routes that have not previously been closed by FFO. This is far better than Alternative A in terms of cave protection, but there could be adverse impacts on caves as a result of OHV access.

Alternatives B and D would be the most aggressive in limiting access to fragile caves. This alternative would restrict motorized vehicle/OHV use to designated roads. This alternative also would decrease unauthorized OHV route development, thereby reducing access to caves in the planning area. Alternatives B and D would result in the greatest beneficial impacts on cave resources of all the alternatives considered.

Special Status Species (Conservation Strategies)

Because of the widespread decrease in bat populations and increasing loss of habitat, the FFO's management approach under Alternatives B and D would be to protect all species of bats and their habitats. The conservation strategies (Appendix B) developed with the USFWS promote the preservation and protection of bats and bat habitat, which includes some caves. Therefore, the implementation of the strategies would likely have an indirect beneficial impact on cave resources managed by the FFO.

Under Alternatives A and C, practices to protect bat habitat are not specified; therefore, this alternative has the possibility to result in more adverse impacts than the other alternatives because it would not provide as much active protection of caves/cave-dwelling bats on FFO-managed land.

Alternatives B and D would implement conservation strategies to protect bat habitat. These alternatives would have the greatest indirect beneficial impact on cave resources because they strive to protect bat habitat (including caves).

4.11.4 Cumulative Impacts

No cumulative impacts are expected from implementation of the proposed actions specified for cave management. The FFO manages few caves.

4.12 Forestry

4.12.1 Introduction

Refer to Section 2.12 for the proposed forestry and timber management actions under each alternative, and refer to Section 3.12 for a description of the forestry resources in the Sierra Planning Area.

For ease of plan reference, the management goal from Chapter 2 is reiterated here:

Manage all forests and woodlands under the principles of multiple use, sustained yield, and protection of the environment in accordance with federal laws, regulations, and policies.

4.12.2 Impacts of the Forestry Program's Proposed Actions on Forestry

All four alternatives would incorporate community based planning. This planning structure is the process whereby the public is heavily involved in the planning process from start to finish, and has the opportunity to direct FFO's management of a particular area, including the forest and timber resources. To date, this planning process has played a major role in forest management within the planning area.

Timber management for all FFO-managed forestlands would allow for multiple use, sustained yield, and environmental protection. Management would focus on forest ecological conditioning, improving forest health, increasing vigor and resistance to insect or disease epidemics, reducing catastrophic wildfire hazard, and developing old-growth attributes (e.g., multi-layered canopies, large snags, downed logs, and large-diameter trees). The natural processes of growth and decay would be encouraged to allow the reestablishment of old-growth forest conditions, providing long-term benefits to forest health.

Forest products would include both timber and fuelwood harvesting. Timber harvesting would include salvage logging of diseased, damaged, or hazardous trees, as well as thinning of green trees to improve forest health and reduce hazardous fuels.

Alternative A would require the management of forests for sustained yield employing intensive forest practices, consistent with environmental quality, and appropriate management plans. Prescribed fire would be used to improve timber production and reduce the risks of catastrophic wildfire. Improving forest health would be an important component of management. These actions would have long-term benefits on the forestry program and would create additional opportunities for companies to buy and harvest FFO-managed timber.

Of all four alternatives, Alternative B would provide the most intensive management; it would be directed toward establishing old-growth coniferous forests and enhancement of forest health. This alternative would allow salvage timber sales but would be mainly oriented toward improving forest health and creation of old growth stands. There would

be a long-term beneficial impact to old growth habitat and forest health under this alternative. There would be less opportunities for companies to buy and harvest FFO-managed timber.

Alternative C would maintain similar management practices of forest health and timber harvesting as alternatives A, B, and D; however, Alternative C would increase tree harvesting over the next 20 years. This alternative would also increase plantation maintenance. Adverse impacts from tree harvesting would be minimal to moderate and the time of recovery would depend on harvest rates, soil disturbance, and rehabilitation. This alternative would provide the greatest opportunity for companies to buy and harvest FFO-managed timber.

Alternative D would manage for both forest health and timber production, depending on the area and the outcome of community based plans. In some areas, communities may want to see local forestland managed in a way that creates old growth conditions. In other areas, the communities may want to see increased timber production to promote local economic development. Fuels reduction and plantation maintenance would be done where needed. The impacts of Alternative D are nearly the same as under Alternative A. Compared to Alternative B there would be more opportunities for timber companies, but the opportunities would probably not be as numerous as under Alternative C.

Overall, alternatives B, C, and D would all provide similar measures of protection and enhancement of forest resources. They would require forest management for consumptive and non-consumptive sustained yield, while refining woodland inventories. Rehabilitation of disturbed areas would occur, providing long-term benefits to the resource. All three of these alternatives would require compliance with the Timber Harvest Criteria (Appendix D).

4.12.3 Impacts of Other FFO Programs' Proposed Actions on Forestry

Special Designations (ACECs and Wild and Scenic Rivers)

On special designation lands (e.g., ACECs and wild and scenic rivers), forest management would be oriented towards environmental protection and salvage of damaged timber rather than commodity production.

Under Alternative A, no new special designations are proposed, although the existing wilderness study area, wild and scenic rivers, and ACECs would continue to be managed as they have been, placing the same level of constraints on timber harvest opportunities.

Under Alternative B, designation of several new ACECs, ACEC additions, and wild and scenic rivers would increase the amount of protection to special status species, paleontological resources, and outstanding river corridors. These new designations might result in the closure of these areas to green timber sales. The restriction would increase protection of special status species, but could be a moderate adverse impact to timber harvesting. The overall effect on total harvest volume, however, would be slight; these

special designation lands are not well stocked with timber. The net result would be a negligible adverse impact to the timber program.

One new special designation area, the South Fork American Wild and Scenic River, would be proposed under Alternative C, leaving a larger amount of FFO-managed land open to green timber sales. This would be a long-term, beneficial impact to the timber commodity program; the volume harvested would potentially be greater than in Alternative B.

Alternative D proposes 11 special designations, including six new ACECs, three ACEC additions, and two wild and scenic rivers. The designation of these new ACECs and wild and scenic river corridors would probably increase protection for vegetation, resulting in the closure of these areas to green timber sales. These closures would increase protection of outstandingly remarkable values and special status species, but would reduce the potential for timber harvests. Again, the net result would be a negligible adverse impact to the timber industry because, generally, the areas that would be designated do not have abundant timber.

Wildland Fire Ecology and Management (Including the Fire Management Plan)

The FFO's Fire Management Plan (FMP) is expected to benefit the forestry program. The plan calls for the removal of hazardous fuels across the planning area. This would be expected to benefit the health of forested areas in which natural fire cycles have been altered. The suppression of fire results in the buildup of dead plant materials (e.g., litter and dead woody materials), and often increases the density of flammable living fuels (e.g., dead branches on living shrubs or live plants, especially during dry periods). The resultant fires burn hotter, spread more quickly, and consume more plant materials than the historical fires that occurred under conditions of lower fuel loading. Restoring and maintaining fire-adapted forests, as proposed in the FMP, would decrease the effects from wildfire to forest communities and improve their resilience and sustainability.

Under Alternative A, fire management actions include the use of prescribed fire to reduce fuel hazards (with an aim to limit 90 percent of all wildfires to less than 10 acres), the use fire-suppression methods with the least amount of environmental impact, and the reduction of heavy fuel loading. In addition, fire management actions would also include modifying or constraining fire suppression in the 'Inimim Forest (YRAA), on Round Mountain (YRAA), in all wild and scenic river corridors, in the Merced River Wilderness Study Area, in the Pine Hill Preserve (ARAA), and in all ACECs. Full fire suppression would occur in all other areas, while hazardous fuels would be reduced in the WUI and communities-at-risk areas. There would be special emphasis on implementing fuel-reduction projects specified in community based plans. These actions would constitute a moderate beneficial impact to the forestry and timber management program, as heavy fuel loading would be reduced and forest health would improve and the risk of losing forestry resources would be reduced.

Fire management actions under alternatives B, C, and D would not change appreciably from Alternative A. Under Alternative B, the emphasis would be on prioritizing fuels

reduction projects, benefiting significant biological resources, and providing additional protection for sensitive cultural resources. Under Alternative C, priority would be given to fuel reduction projects for communities at risk. Alternative D would prioritize fuels reduction projects to benefit both communities at risk and significant natural and cultural resources. Actions under all three of these alternatives would have negligible impacts on the forestry management program.

Visual Resource Management

Under Alternative B, FFO-managed lands would receive Class I and II status. This is a very high standard for visual resource management, and could affect timber sales and other forestry program actions if disturbance were to exceed the thresholds specified for the visual resource class. Under Alternatives C and D, FFO-managed lands would receive lower classes. Alternative C would assign Class III visual resource goals to 200,054 acres. Alternative B would assign Class III to 134,052 acres – roughly 65,000 acres less than Alternative C. A Class III assignment means that most timber sales could go forward with respect to visual resource issues. Alternative D could be viewed as having less of an adverse effect on the forestry program. Alternative C would probably have the least adverse effect of the action alternatives.

Recreation

Timber management activities can be adversely affected by restrictions placed on the forestry program as a result of their proximity to important recreation opportunities and facilities (i.e., campgrounds, trails, day-use areas, white-water rafting tour routes, etc.). Some restrictions could be temporary, such as timing limitations on timber operations near campgrounds. Others could be permanent, such as timber sales in the viewshed of popular High Use trails, which would be adversely affected by clearing of trees and other vegetation.

Alternatives B, C, and D involve the designation of SRMAs. Timber management would be allowed in SRMAs as long as the area's recreational opportunities and other resource values are not degraded. Green timber sales would likely be prevented. In some cases, timber management may be needed to reduce fuels, clear trails, salvage damaged timber, and improve the natural aesthetics of the area. Since the proposed SRMAs have little timber resources, the overall impact on the forestry program would be adverse but negligible.

Transportation and Access

Under Alternative A, all FFO-managed land within the planning area would remain open to OHV/motorized users (except where previously closed or limited). Because land would be open, it is likely that OHV users would go off existing routes, causing additional routes to become established. This would probably have an adverse impact on forest health (erosion, crushed reproduction, etc.).

Under Alternative C, hundreds of miles of OHV/motorized routes would be designated open. This increased level of access to FFO-managed lands could adversely affect forest health by encouraging off-road use; thus increasing erosion and crushing seedlings.

Under Alternatives B and D, OHV/motorized use would be limited to designated routes. This reduced level of motorized access could beneficially affect forest health by reducing soil erosion along the routes compared to present conditions. Undesignated routes could be repaired if necessary and used by logging companies as haul roads, so there would be no impact on the opportunity for companies to buy and harvest FFO-managed timber.

Lands and Realty (Land Tenure Adjustment)

Some FFO-managed forestlands could be transferred out of BLM ownership under all of the alternatives. Other forestry resources may be acquired, especially in and around SRMAs, wild and scenic river corridors, and ACECs. Forestry actions would probably be restricted within these areas with special designations. Over the long-term, this would be a negligible to minor adverse impact to the program.

Under Alternative B, acquisition would focus on lands with high-quality natural and cultural resource values. Future forestry activities on these lands would be restricted or carried out in a way that protects the resource values. Salvage of damaged timber would be allowed only if can be done without damaging the protected resource. The land tenure strategy under Alternative B would benefit the environment but would have a negligible adverse effect on the forestry program.

Under Alternative C, acquisition would focus on acquiring lands for recreational use and to improve public access. This may increase the opportunity for economic development, including perhaps forestry program activities. Still, forestry activities would be restricted in recreation areas (like the proposed SRMAs) and would be only carried out to salvage damaged timber, reduce significant fuels, and enhance recreation and access.

Acquisition efforts under alternatives A and D are similar. Under these alternatives the FFO would focus on the acquisition of land with both high-quality recreational resources and high-quality environmental resources. Lands within outstanding river corridors would be of particular interest. This alternative would balance economic development, including forest-based activities, and environmental protection. These alternatives would have less impact on the forestry program than Alternative C. This impact would not be as great as under Alternative B.

Other FFO programs

Under the four alternatives, forest and timber management could be affected by fire and fuels projects, recreation management, and energy and minerals development. Alternative C, in particular, would increase public use of FFO-managed land. Some uses may affect forest cover and productivity, resulting in habitat loss, soil erosion, and perhaps increased weedy vegetation. Short- or long-term adverse impacts may result depending on the degree of disturbance, terrain, soils, and land use. When monitoring

provides evidence that forest health standards are not being achieved, then corrective actions would be implemented, including adjustments to forest and timber management, if warranted. The impacts would be negligible and short-term.

4.12.4 Impacts of the Forestry Program on the Environment and Other FFO Programs

This section summarizes some of the impacts on the environment and other FFO programs from implementation of the forestry proposals. These resources include air (4.1), soils (4.2), water (4.3), special status species (4.6), fire (4.7), cultural (4.8), visual resource management (4.10), energy and minerals (4.14), transportation and access (4.16), lands (4.17), special designations (4.19) and socioeconomics (4.20). See the individual sections for more detailed discussions of the impacts.

4.12.5 Cumulative Impacts

Because forestry activity in the planning area primarily occurs on private lands and on the National Forests, the FFO's actions would have negligible cumulative impacts on this use and industry. The FFO manages a small percentage of the forested lands in the region compared to the USFS. Continued residential development in the planning area could negatively impact forest resources by converting forests to urban land uses or by creating increased surface water run off, soil erosion, and air quality degradation.

4.13 Livestock Grazing

4.13.1 Introduction

Refer to Section 2.13 for the grazing program's proposed action under each alternative, and refer to Section 3.13 for a description of the grazing program in the Sierra Planning Area. This section describes impacts that may be caused by implementing the proposed actions on grazing opportunities in the planning area and the FFO's livestock grazing program.

For ease of plan reference, the management goal from Chapter 2 is reiterated here:

- Livestock management will be manageable and achieve the four fundamentals of rangeland health:
 - Watersheds are properly functioning;
 - Ecological processes are in order;
 - Water quality complies with state standards; and
 - Habitats of protected species are in order.

4.13.2 Impacts of the Livestock Grazing Program's Proposed Actions on Livestock Grazing

Under alternatives B, C, and D, the FFO would continue to make progress toward improving rangeland health through continued compliance with the Central California Standards and Guidelines for Livestock Grazing. Grazing activity would be altered in leases not meeting these standards and guidelines. Adherence with this policy would provide a long-term benefit because it would improve overall rangeland health. Improving rangeland health would sustain rangeland productivity and could therefore increase grazing opportunities. Under alternatives B, C, and D, the FFO would suspend grazing activities where monitoring indicates that there are adverse impacts on special status species. Because grazing and special status species conflicts are rare, impacts on grazing would be negligible.

Under Alternative A, grazing would be managed to provide 700 pounds of residual mulch per acre and to increase forage production. Some leases are small, largely unable to be grazed due to precipitous topography and unsuitable vegetation, do not support a high number of AUMs, are difficult for BLM staff to access, and therefore are difficult and costly to manage. Reducing leases over time would benefit FFO management, requiring less administration.

Alternative B emphasizes environmental protection. Under this alternative, grazing would be reduced by eventually phasing out leases that do not meet the threshold of 100 AUMs. Leases less than 100 AUMs would be considered unmanageable and would be relinquished or cancelled upon renewal. Reductions in grazing allocations in all the

assessment areas would be beneficial to BLM by reducing the FFO's administrative cost, but would have a long-term adverse impact on grazing opportunities.

Alternative C emphasizes use of public land. Under this alternative, the FFO would not restrict lease size and number of AUMs. This would provide the highest level of grazing allocations compared to all other alternatives. Compared to alternatives A, B, and D, the increased grazing allocations under this alternative would be the most beneficial for grazing opportunities. However, the reduced restrictions on allotment sizes and number of leases would increase the FFO's workload and administration costs.

Under Alternative D, the FFO would phase out leases with less than 25 AUMs (except those under "special circumstances") because leases of this size cost more for the FFO to manage than the revenue they generate for the federal government. Leases considered to be "special circumstance" cases would be analyzed on a case-by-case basis. This analysis would include size and validity of the lease and resource conditions. Compared with the other alternatives, Alternative D would be the best management direction for balancing FFO's administrative costs and providing economically viable grazing opportunities. Over time, there would be a reduction of 1,429 acres of public land available for grazing and a reduced allocation of 156 AUMs. To place this in context, there would still be 57,482 acres available for livestock grazing in 34 allotments with an allocation of 5,567 AUMs.

4.13.3 Impacts of the Other FFO Programs' Proposed Actions on Livestock Grazing

Lands and Realty (Land Tenure Adjustment)

FFO-managed lands not identified for retention would be available for possible disposal (pending FLPMA and NEPA reviews and other procedures). Land tenure adjustment goals would benefit recreational uses, environmental resource, management efficiency, or combination of these, depending on the alternative. Under all of the alternatives, the FFO would work to dispose of small parcels (with low resource values) and consolidate lands in areas with either high-quality environmental resources or high-quality recreational resources, or both. Many of these areas have special designations (ACECs, wild and scenic river corridors, etc.) or other kinds of designations (preserves, SRMAs, etc.). Grazing opportunities would be more limited within these areas. Consolidation of public lands into special designation areas would, over time, adversely impact the potential to graze on FFO-managed land. The number of allotments would likely decline. The impacts seem to be similar under all four alternatives. Grazing may still be allowed in areas with special designations but many of these areas do not have much rangeland. The proposed South Fork American and Merced River SRMAs are exceptions to this.

Recreation

Grazing would be allowed in the proposed SRMAs only in situations where it is needed to reduce weeds and fuels or to enhance the SRMA in some other way. There are a few leases in the proposed SRMAs: the proposed Red Hills SRMA has two leases. One of

the leases is only accessible through locked gates and does not receive much recreational use. The second lease is only accessible across private land. The proposed Merced River SRMA would have three leases which are only accessible through locked gates and do not receive much recreation use. Much of the recreational use is near the river and does not affect grazing. The impacts on grazing opportunities would be negligible or none. Under Alternative C, the FFO proposes to create the greatest number of SRMAs. The FFO would emphasize recreational uses. This alternative might have the greatest potential to see a conflict between recreation and grazing resolved in favor of recreation.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Under Alternative A, FFO-managed land would be open to motorized vehicles/OHVs except where it has been closed or limited by a prior FFO action. OHV users could potentially drive off of existing routes and go “cross-country.” Rangeland is relatively open and is particularly susceptible to off-road OHV use. The noise from OHV use could scare livestock. Under Alternatives C, motorized vehicles/OHVs would be limited to existing routes that have not been closed by a prior FFO action. Under alternatives B and D, motorized vehicles/OHVs would be limited to designated routes. The reduction of areas and routes available to motorized vehicles, as proposed under the action alternatives (especially B and D), would greatly reduce the possibility for conflicts between OHV use and grazing. Leasees would still be permitted to use motorized vehicles/OHVs on certain routes only as part of their grazing operation. Overall impacts to the grazing program under the action alternatives, especially alternatives B and D, would be major and beneficial.

Special Designations

Under Alternative A, the FFO would maintain the current special designations: three federal wild and scenic rivers, the Merced River Wilderness Study Area, and six ACECs. These designations place additional management attention on the important resources for which these areas were designated. Grazing would be allowed in these areas, unless this activity is shown to be impacting the special designation values. Impacts on grazing from maintaining the special designations would be negligible. None of the areas have significant rangeland.

Alternatives B, C, and D – the action alternatives – would increase the acres of FFO-managed land with special designations. Alternative B, for example, proposes seven new wild and scenic rivers, seven new ACECs, and three additions to existing ACECs. Grazing would be allowed in these areas, unless it is shown to be impacting the special designation values. Grazing would be, in some cases, used as a tool to enhance or protect the special designation values (i.e., using grazing to reduce noxious weeds may protect special status plants in a proposed ACEC). However, the effect of increasing special designation acreage would probably be to reduce grazing opportunities. The impacts would be negligible because many of the areas proposed for special designation lack rangeland (or productive rangeland). Alternative B, which proposes the greatest number of new special designations, would have the greatest adverse impact on grazing. Alternatives A and C would have the least. Alternative D is intermediate.

4.13.4 Impacts of the Livestock Grazing Program on the Environment and Other FFO Programs

The grazing program has the potential to cause impacts to the environment and other FFO programs, including soils (4.2), water quality (4.3), vegetation (4.4), fish and wildlife (4.5), cultural resources (4.8), recreation (4.15), special designations (4.19) and socioeconomics (4.20).

4.13.5 Cumulative Impacts

Potential cumulative impacts would be slight as a result of the reductions in livestock grazing proposed under alternatives A, B and D. Increasing residential and commercial development on private land in the planning area is adversely impacting the grazing industry. However, overall, the planning area does not contain an economically significant livestock industry. Most residents with grazing leases are not dependent on grazing to earn a living. The loss of their leases would cause them to move their herds to non-FFO-managed lands for grazing or to give up ranching, with little or no impact on regional grazing practices/opportunities.

4.14 Energy and Minerals

4.14.1 Introduction

This section discusses impacts on energy and mineral development opportunities that could result from implementing the proposed actions under the FFO's energy and minerals program. See Section 2.14 for the energy and minerals proposed actions under each alternative, and refer to Section 3.14 for a detailed description of existing energy and minerals resources in the Sierra Planning Area. Also see Appendix D for the RFD scenario for the planning area.²

For ease of reference, the management goals for energy and minerals are restated below:

- **Leasable minerals.** Provide opportunities for the exploration and development of oil and gas resources.
- **Locatable minerals.** Provide opportunities for the exploration and mining of mineral resources locatable under the 1872 Mining Law.
- **Salable minerals.** Provide opportunities for the exploration and orderly development of saleable mineral materials.

4.14.2 Impacts of the Energy and Minerals Program's Proposed Actions on Energy and Minerals Development

Leasable Minerals (Oil and Natural Gas)

Under alternatives A, B and D, the FFO would make available for lease 37,000 acres with high oil and gas potential, all located in the CVAA and YRAA assessment areas. These acres would be available for leasing under the standard stipulations. Leasing would not be allowed in urban residential areas or within national wildlife refuges unless there is a drainage problem. In the unlikely event of a drainage problem, national wildlife refuges could be available for leasing under the no surface-occupancy stipulation. Surface drilling facilities would be placed outside of the refuge. Drilling would be directional into the area of drainage problem. The RFD scenarios indicate that historic development of federal oil and gas deposits in the planning area has been low. Development is expected to remain at relatively low levels.

Under Alternative C, all high potential land in the planning area would be available for lease. This includes 37,000 acres located in the CVAA and YRAA (the same acres

² The reasonably foreseeable development scenario is based on known or inferred oil and gas potential and applies the conditions and assumptions discussed [therein]. Changes in available geologic data or economic conditions may alter this scenario, and some deviation should be expected over time. The lands included are limited to those with BLM-administered minerals, including split estate with federal minerals. It should be noted that the RFD scenario is a not a management decision and does not limit the number of wells that may be drilled in the future. It is possible and permissible to consider approving well permits in excess of the hypothetical level used in the RFD scenario, as long as such approval is consistent with the analysis in this and future environmental analyses.

available under Alternatives A, B, and D). It would also include an additional 39,000 acres within NWRs, all located in the CVAA. A total of 76,000 acres would be available for lease. These acres would be available under the standard stipulations, except in the case of the national wildlife refuges. These refuges would be available only under the no occupancy stipulation. Surface drilling facilities would not be allowed within the refuges. Alternative C assumes that new regulations would be developed and an EIS is completed to address leasing in national wildlife refuges (see BLM Handbook H-3101-1 at I.A.2.j.). Compared to the other alternatives, Alternative C would provide the greatest opportunities for mineral development.

Table 4-2 Mineral Leasing by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Leasing under standard, timing limitation and controlled use stipulations	37,000 acres	37,000 acres	37,000 acres	37,000 acres
Leasing under no surface-occupancy stipulation within NWRs	None	None	39,000 acres	None

Locatable Minerals

The administration of locatable minerals would be the same under all the alternatives. The FFO would continue to administer about 1,200 claims at any given time in a year. The FFO would continue to process 20 new notices and 10 new plans of operations per year. Most notices and plans that the FFO receive involve gold prospecting/mining using underground/hardrock methods or using suction dredges in rivers and major creeks. Mining claim operations are subject to environmental restrictions to prevent impacts to significant biological and cultural resources. Suction dredging in wild and scenic rivers would be allowed under approved plans as long as the dredging does not impact significant biological and cultural resources or the river's outstandingly remarkable values. It is likely that over the next 20 years only a few claims would be developed into industrial mining operations.

Salable Materials

The administration of saleable minerals is similar under all of the alternatives. The FFO would continue to entertain proposed sand and gravel sales in the Yuba Goldfields, and any authorized extraction activities on FFO-managed land in the Yuba Goldfields would be used to conduct wetlands restoration. Mineral material sales and free use permits would be limited to existing pits and other sites where impacts on other resources would be minimal or could be avoided. Under Alternative B, which emphasizes environmental protection, only existing pits would be available for the extraction of mineral materials under free use permits and sale contracts. Alternatives C and D greatly expand the potential areas available for free use and mineral material sales and could be seen as having the greatest beneficial impact on mineral development opportunities.

4.14.3 Impacts of Other FFO Programs' Proposed Actions on Energy and Minerals Development

Air Quality

Under all of the alternatives, the FFO would cooperate with local counties to work toward achieving air quality goals in the Mountain and Valley Air Basins. The FFO energy and minerals program would comply with the National Ambient Air Quality Standards, California State Ambient Air Quality Standards, State Implementation Plans, and applicable federal, state, and local air quality regulations. Approval of all actions that require permits from the local APCDs would include measures necessary for the phased reduction of pollutants in accordance with the Air Quality Attainment Plan for the local air basin. This would include authorizations for construction, road maintenance and improvement, mineral development, and OHV authorizations. The FFO's management actions would conform to the objectives and strategies of local APCDs for achieving federal and state air quality standards.

These requirements affect how FFO-managed mineral estate is developed. The impact to mineral development would be the same under all of the alternatives. The FFO would determine if leasees have received the necessary air permits from state and local authorities. This would also be true when FFO reviews plans of operations and issues permits for mineral material sales and free use. The FFO would not allow development that does not comply with the air quality standards.

Special Status Species/Conservation Strategies

Appendix B contains the proposed conservation strategies that the FFO developed with the USFS to protect special status species and their habitat. If adopted, as proposed under alternatives B and D, these strategies could affect the minerals program. Timing limitations, avoidance areas, and other restrictions could affect where and when mineral development occurs. Of particular interest is the protection of special status bat habitat, which is often includes underground mine workings that are no longer under development. If renewed development is proposed, FFO would need to make sure that the proposal would not adversely impact special status bats. The adoption of the conservation strategies under alternatives B and D could be seen as potentially limiting mineral development opportunities.

Visual Resources

The FFO is required to protect and enhance outstanding visual resources under its management. Under Alternative A, several areas would receive Class I management consideration. These areas include wild and scenic river corridors. For the most part, these areas are not subject to major development proposals (i.e., quarrying operations) that could degrade visual resources. The visual resources of other areas are reviewed on a project-by-project basis.

Under the action alternatives, proposed VRM classes could limit the location of some mineral development projects that have the potential to degrade visual resources. Some new proposals would need to be designed to conform to the new visual resource objectives.

Alternative B proposes the greatest amount of Class I and II areas – the highest standards possible. This would be the most adverse to the mineral development opportunities because any project with the potential to degrade visual resources would be denied. Alternative C proposes the least amount of Class I and II areas. Most FFO-managed land would receive a Class III status. This would have the least impact on mineral development. Impacts on mineral development from the VRM proposals under Alternative D would be somewhat less restrictive than those proposed under Alternative C.

Lands and Realty

Land Tenure Adjustment

Under all of the alternatives, the FFO would attempt to take over jurisdiction of USCE-owned lands in the Yuba Goldfields. Additional lands in the Yuba Goldfields may also be transferred to the FFO through a land exchange. After consolidation of these lands into FFO ownership, the sale of sand and gravel in the Yuba Goldfields would continue, creating additional opportunities for salable mineral development. This would have a beneficial impact on the regional mining industry. Production totals from these lands would be added to that already being produced from private lands in the Yuba Goldfields. The scale of production from public lands could be around 20 million tons per decade. The resource is such that, at almost any scale, production would continue for many decades.

Mineral Withdrawals

Withdrawals of public land from mineral entry under the 1872 Mining Law would prevent the location of new mining claims and would consequently result in an adverse impact on opportunities for the development of locatable minerals. Under alternatives B and D, the FFO would withdraw from mineral entry public lands within wild and scenic river corridors and ACEC boundaries. Andrews Creek would be included in the withdrawal of the Red Hills ACEC. The FFO would also withdraw from mineral entry all FFO-managed land in the Yuba Goldfields.

This proposed withdrawal would appear to have a decidedly adverse effect on locatable minerals development. However, the areas proposed for withdrawal are not known to have significant locatable mineral (gold) potential. Also, the proposed withdrawals could improve opportunities for large-scale development of salable minerals in the Yuba Goldfields because they would eliminate mining claim conflicts with proposed sand and gravel sales.

Special Designations

Designation of special areas (like ACECs and wild and scenic rivers) could limit mineral development opportunities. Valid existing mining claims would be honored in areas with new or existing special designations, but all notice-level operators would need to file plans of operations, subject to FFO approval and regulation. Some claimants may opt to conduct only casual use activities. New claims under the General Mining Law of 1872 would be prohibited for those areas withdrawn from mineral entry. Under Alternative B, the FFO proposed the greatest number of special designations. This alternative would have the greatest adverse affect on mineral development opportunities. Alternatives A and C proposes the fewest new special designations. In fact, no new special designations would occur under Alternative A – the no action alternative. Alternative D is intermediate between Alternative A and Alternative B.

4.14.4 Impacts of the Energy and Minerals Program on the Environment and other FFO Programs

Refer to resource and resource use sections in this chapter for more detailed discussion of the impacts of the energy and minerals program on the environment and other FFO programs. These sections include air (4.1) soils (4.2), water (4.3), special status species (4.6), fire (4.7), cultural resources (4.8), visual resource management (4.10), transportation and access (4.16), lands (4.17), hazardous materials (4.18), special designations (4.19) and social and economics (4.20).

4.14.5 Cumulative Impacts

The proposed actions would have a low potential to cause adverse cumulative impacts. The most economically important mineral resources managed by the FFO would remain available for development at the virtually same levels under all of the alternatives. These include sand and gravel deposits in the Yuba Goldfields, high potential oil and gas areas in the Central Valley, locatable gold resources in the Sierra Nevada foothills, and certain sources of solid mineral materials also in the Sierra Nevada foothills. Yuba Goldfields' sand and gravel is clearly the most economically important mineral resource that the FFO has authority to manage. Under all of the alternatives, this resource would be available for extraction.

Some FFO-managed land could be made off limits to mineral development. The proposal to withdraw lands from mineral entry under alternatives B and D is most notable. This would reduce opportunities for locatable mineral development. Overall, the mineral potential of the lands proposed for withdrawal is not high.

Minerals development may also cause cumulative environmental impacts, but anticipated impacts would be likely be minor and would contribute little to the overall impacts (adverse and beneficial) caused by mining operations on non-BLM land in the planning area. Under all of the alternatives, the FFO would work to reduce environmental damages caused by the mining activity it administers. The Yuba Goldfields would be restored ecologically through the extraction of sand and gravel. The RFD scenario

4.15 Recreation

4.15.1 Introduction

Refer to Section 2.15 for the proposed recreation management actions under each alternative, and refer to Section 3.15 for a description of existing recreational opportunities in the Sierra Planning Area.

For ease of reference, the management goal for recreation is restated below:

The general goal of the recreation program is to continue to meet the increasing public demand for recreational opportunities while protecting other resources and resource uses.

4.15.2 Impacts of Recreation Program's Proposed Actions on Recreation

Special Recreation Management Areas

The FFO's recreation program focuses in large part on its popular and unique river resources. These areas have the highest use and provide a wide range of recreational experiences. Based on public input from community-based planning processes, the alternatives provide a reasonable range of management options to meet current and expected increased use of these areas. Under the alternatives, various river corridors and other FFO-managed tracts have been proposed for designation as SRMAs. The proposed SRMAs are depicted on Map 4 in Appendix A. The SRMAs have been zoned using the ROS discussed in section 2.15 and depicted on Maps 4a to 4e in Appendix A. This zoning establishes the FFO's strategy for each SRMA. All other FFO-managed lands not designated as a SRMA would become an ERMA.

The number and management emphasis of each SRMA varies somewhat depending on the overall emphasis of the alternative. For that reason, this section discusses impacts of the proposed SRMA and then of the alternatives. Following the discussion of the SRMAs, there is an analysis of impacts of the ERMAs and target shooting proposals for all areas.

Under the current land use plan, no areas are designated as SRMAs and none would be designated under Alternative A. Some areas, such as the South Fork American River, have been managed as *de facto* SRMAs to focus management attention on them. Such management does not in and of itself create any limitations on uses, allocation, or restrictions for the areas.

Alternative A calls for management under current direction, which includes the recommendations of completed community-based plans. Improved signing, developing parking areas, closing illegal routes, and limiting use to designated routes in some of these areas may result in beneficial impacts on the local natural resources.

South Yuba River

The South Yuba River SRMA would have areas zoned as High Use, Transitional Use, and Remote Use, in accordance with the ROS (defined in Chapter 2.15). The zoning strategy is shown in Map 4a and is derived from the South Yuba River Comprehensive Management Plan and the Round Mountain Management Plan. All public lands within the SRMA would be managed in accordance with these plans.

The ROS zones would be the same across the action alternatives and the impacts would be the same (except as a result of proposals from other programs [see below]). The use of the ROS would allow FFO to manage the various segments of the river to accommodate different users' preferences. High Use areas would be relatively easily accessible (crossings) and would allow for social interaction. Transitional Use areas (e.g., 1 mile from the High Use areas) would allow visitors to enjoy a less crowded recreational experience. Remote areas are abundant within this proposed SRMA and would enable visitors to enjoy solitude and a more wild recreational experience.

Under all of the alternatives, some currently used recreational OHV routes would be posted as closed. Riders would move to designated routes. This would be a permanent minor adverse impact on OHV users. The closures would have a major beneficial impact on other recreational users.

North Fork American River

This SRMA would have areas zoned for High Use, Transitional Use, and Remote Use experiences, per the ROS. The ROS zoning is shown in Map 4b. All public lands within the SRMA would be managed in accordance with the North American River Wild and Scenic River Management Plan (to be developed).

The ROS zoning creates an abundance of remote use areas within the SRMA. High Use and Transitional Use areas would be confined to a few access points, trailheads, and trails. This zoning strategy helps the FFO protect and enhance the outstandingly remarkable values of the North Fork canyon.

The area would be open only to non-motorized and mechanized recreational uses and closed to motorized uses, with the exception of Truro Mine Road which would remain open until its fate can be decided by the Wild and Scenic River Management Plan (to be developed). This would be a minor adverse impact on OHV/motorized recreation, which would be displaced to other open routes elsewhere on the public lands or to other non-FFO routes in the region. Closure of some routes to OHV/motorized use but not to non-motorized, mechanical, or equestrian use would be a minor beneficial impact for those uses.

The FFO would not issue special recreation permits (guiding) in the proposed SRMA under Alternative B. This would be a minor adverse impact to recreation, as people interested in running the river, but without the necessary whitewater equipment and

skills, would be denied the experience of rafting it. Alternatives C and D would allow commercial outfitters to operate under permit.

In addition to those actions and impacts described for Alternative B, Alternatives C and D propose to improve and develop parking areas and access points. Overall, these proposals would improve opportunities for recreation in the North Fork American River area for some users. Expanding and improving parking would enable more visits, which would have a minor beneficial impact on the recreation program and user.

South Fork American River

The South Fork American River SRMA would contain areas zoned for High Use, Transitional Use, and Remote Use recreational experiences, per the ROS. The ROS zones are shown in Map 4c. This zoning strategy is derived from the South Fork American River Management Plan (and the Cronan Ranch plan amendment). All public lands within the SRMA would be managed in accordance with this plan. The plan would be adopted under all of the alternatives.

Horseback riders and mountain bikers would be limited to designated trails signed open for these uses. Closures of trails to improve trail conditions and protect resources would be minor and temporary in nature. Equestrians would be displaced to other trails, causing a minor, temporary inconvenience for riders. Recreational OHV/motorized vehicle use would be limited to designated routes. This proposed action would displace this activity to other areas and create possible minor adverse impacts by overcrowding designated routes elsewhere.

Where the FFO closes areas to hunting, hunters would be displaced other areas. Most of the FFO-managed land within the SRMA would be open to hunting so impact on hunting would be negligible. If the lands are closed to protect sensitive species, it may be a negligible and collateral beneficial impact on wildlife in general because game habitat could thrive.

Camping would be allowed in designated camping areas only. If these areas are filled, campers would be prohibited from overnight camping along the river and would need to find camping opportunities elsewhere. This would be considered a minor adverse impact. The FFO proposes to improve facilities and expand interpretation within the SRMA, which would be a minor beneficial impact to recreation.

Although the river can be run privately, most raft it with a trained outfitter. By permitting commercial outfitters under all the alternatives, those who lack whitewater rafting skills could more fully enjoy the experience in a safe manner, which would be a moderate beneficial impact on recreation.

The FFO would consider proposals to expand its trail network to accommodate the ever-increasing public demand for hiking, equestrian, and mountain biking. Many of the trail proposals attempt to connect existing trails. The proposals come from land trusts and trail advocacy groups. If and when these trails are built, they would have a moderate

beneficial impact on recreation users. New trail construction would reduce impacts on presently overused and crowded trail segments and provide tremendous opportunities for the public to enjoy the river. Under the four alternatives, increased public access would also improve recreational opportunities in the SRMA. Additional trail access and put-in points would expand opportunities for the recreating public. Depending on how many access and put-in points are provided, this would be a minor to moderate beneficial impact to the recreation program.

Red Hills

This fragile 10,131-acre area contains the existing Red Hills ACEC which would continue to be managed in accordance with its ACEC management plan. The area would be designated an SRMA only under Alternative C. Under alternatives B and D, the FFO would give the ACEC values (special status plants) preferential treatment. A potential conflict between the ACEC values and recreation would be decided in favor of the ACEC values. The impacts of not designating the area a SRMA under Alternatives B and D are negligible. If, for example, a proposed trail was rerouted or denied to prevent irreparable damage to the ACEC values, little would be lost because there are miles of other trails that could be used.

The Red Hills SRMA would contain areas zoned for High Use, Transitional Use, and Remote Use experiences, per the ROS. The proposed ROS zoning is shown in Map 4d. This zoning strategy was designed to help protect the special status plants by confining High Use (and high impact) recreation to certain areas. At the same time, the strategy allows the public to have a variety of non-motorized low impact recreational experiences. The vast majority of people visit the area during the cooler weather months, especially the spring when people come in droves to enjoy the magnificent wildflower displays. Horseback riding is also popular. The ROS zoning strategy takes this into account.

The Red Hills would be open to non-motorized recreation use only. This would have a moderate beneficial impact on horseback riders, mountain bikers, walkers/hikers, and other non-motorized users. OHV/motorized vehicle use would remain confined to county-maintained roads and a few FFO-designated routes which provide excellent access to the High Use areas and viewpoints for the spring wildflower displays (especially along Serpentine Loop). The Red Hills has been closed to off-road motorized vehicle use since the early 1990s. The area was closed because this use was causing irreparable damage to the ACEC values. At the time of the closure, there was little public objection. There has been virtually no public interest since that time.

Merced River

This SRMA would contain areas zoned for High Use, Transitional Use, and Remote Use recreational experiences, per ROS. The proposed ROS zoning is shown in Map 4e. This zoning strategy was designed to protect and enhance outstanding values associated with the Merced River Wild and Scenic River corridor, the Merced River Wilderness Study Area, and the Merced River ACEC. All FFO-managed lands within the SRMA would be

managed in accordance with the Merced River Wild and Scenic River Management Plan (to be developed).

Similar to the other proposed SRMAs, the Merced River SRMA would contain mostly areas zoned for remote recreational experiences, per the ROS. High Use and Transitional Use experiences would be allowed in and within close proximity to the FFO's visitor center, campgrounds, parking areas, trails, and day-use areas near Briceburg. This ROS zoning strategy is expected to have a beneficial impact on recreation, not to mention the area's many outstanding resource values. The zoning strategy would provide a variety of experiences. Most importantly it would provide opportunities to have a satisfying river recreation experience. In some areas, rafters could enjoy the solitude of a wild river. In other areas, families and other groups can enjoy swimming and picnicking together on a hot summer day.

Under all of the alternatives, motorized vehicle/OHV use would be allowed only on designated routes. Only street legal vehicles would be allowed on the Merced River campground access roads. This would have a permanent minor adverse impact on recreational OHV/motorized users. The area sees little recreational motorized vehicle use. There are few viable routes, and the terrain is generally so steep it severely restricts motorized use. Under alternatives B and D, the FFO would keep key routes open to facilitate access but, at the same time, protect and enhance the outstanding river-oriented recreational opportunities and environmental resources that exist in the Merced River canyon.

The FFO would not allow camping on FFO-managed land on the south side of the river, except in cases where the camper has written permission from the FFO. This proposed action would have a permanent minor adverse impact because campers would be required to find other places to camp, which are abundant within the developed FFO campgrounds on the north side of the river. The prohibition on camping would help prevent wildfires ignited by illegal campfires. Littering has also been a problem on the south side of the river.

Target Shooting in SRMAs

Target shooting and hunting would be prohibited within 0.25 mile of South Yuba River (0.5-mile corridor) in the proposed South Yuba River SRMA. This proposed action would be beneficial for public health and safety because it would reduce the chances for shooting accidents. It would have a permanent but minor adverse impact on hunters and target shooters, who would be required to move farther away from the river corridor to conduct these activities.

In the proposed North Fork American River SRMA, target shooting would be allowed in designated areas, if any can be identified by the FFO. This would be a minor adverse impact for some visitors. Mitigation would be in place to eliminate public safety impacts. It would have a minor beneficial impact for target shooters. Indiscriminate target shooting would not be allowed, which may be considered a minor adverse impact on individuals who enjoy such activities. The long-term viability of target shooting in this

area will be assessed, with appropriate public involvement, during the development the Wild and Scenic River Management Plan.

Target shooting would be prohibited everywhere in the proposed South Fork American River SRMA. This is a key decision of the South Fork American River Management Plan, and its amendments. The impacts would be mixed. Shooters would have to go elsewhere to shoot. Hikers, horseback riders, and others might feel safer recreating within the SRMA.

Target shooting would continue to be strictly prohibited in the Red Hills. Similar to the motorized vehicle closure, the area was closed to shooting during the early 1990s because this activity was causing extensive damage to the environment and ACEC values. The shooting was causing safety problems. There was little public objection to the closure. Many applauded the FFO's action. The impacts of maintaining the target shooting closure would be negligible.

The discharge of firearms would be prohibited within 0.5 mile of the centerline of the Merced River in the proposed Merced River SRMA. This proposed action would have a minor beneficial impact for recreationists because it would reduce the chances for shooting accidents. It would have a permanent but minor adverse impact on hunters and target shooters, who would be required to move farther away from the river corridor to conduct these activities.

Extensive Recreation Management Areas

Under alternatives B, C, and D, all FFO-managed areas outside of the proposed SRMA would become extensive recreation management areas or ERMA. These areas would receive custodial management attention, though maintaining air quality, significant biological and cultural resources, watershed protection, and public health and safety would remain priorities for the FFO.

The FFO would allow limited motorized vehicle/OHV use in ERMA. Under Alternative C, routes would be open unless they have been previously closed by a FFO action. Under alternatives B and D, motorized vehicle use would be limited to designated routes. Many ERMA would not contain any designated routes. Access to ERMA would be via county-maintained roads and other public roads, where possible. Within ERMA, access would be by horseback, mountain bike, and foot. Given the scattered nature of the FFO's lands, motorized vehicle/OHV use is not realistic unless the user has permission to cross private lands. Overall, the impact would be a minor on motorized vehicle/OHV users. Some users rely on motorized vehicles to get to hard to reach places on FFO-managed land. These users would be inconvenienced by the proposed action.

Overnight camping in ERMA would be limited to 14 days within a 90-day consecutive period. This proposed action would have a negligible adverse impact; this is already the standard for FFO-managed lands. Cutting trees and firewood for camping purposes in developed recreation sites would be prohibited. This would be a negligible impact on recreation. People would be required to bring their own campfire wood.

Recreational suction dredging would continue to be allowed on rivers and streams throughout the ERMA. Most of this use is casual and requires miners to file for notices of operation with the FFO annually to conduct mining. As this is a continuation of current management, the impact would be negligible. Hunting would be generally allowed unless signed closed. The impact would be negligible because hunting would be allowed most of the time, just not within the higher use areas where there could be conflicts between hunters and other public land users.

Target Shooting in ERMA's

Some areas that may become ERMA's have already been closed to shooting by the FFO. Under Alternative B, target shooting would be allowed only designated areas. This would have a long-term moderate adverse impact on target shooters because there is increasingly less accessible and free places to shoot in the planning area. Under alternatives A, C, and D, target shooting would be generally allowed in ERMA's unless signed closed. (See Section 2.15 in Chapter 2 for a description of allowable actions and uses under all alternatives in ERMA's.) Impacts on recreational target shooters would be negligible. Shooters would be responsible for safety and state regulations concerning discharge of firearms. Most shooters would probably feel that this proposed action under alternatives A, C, and D is reasonable and generally beneficial to shooting. The Campo Seco parcel (MoRAA) is a popular shooting area that would become an ERMA. This area has been closed to shooting by the FFO because of a long history of public littering in the shooting area. The FFO proposes to close this area permanently under alternatives A, B, and D. This could have a moderate adverse effect on shooters.

4.15.3 Impacts of Other FFO Programs' Proposed Actions on Recreation

Water Resources

The FFO's responsibilities under the Clean Water Act may affect how it manages recreational use. Under all of the alternatives, the FFO would focus recreation management on its land holdings along rivers, especially in river canyons like the North Fork American and the Merced. These rivers are obviously important water resources managed, in part, by the FFO. Though there are no water-related proposed actions that would affect the recreation program, the goals of maintaining high water quality would dictate how recreation would be managed. Trails, bathrooms, parking areas, and other recreational developments would be planned, built, and managed in ways that avoid or minimize adverse impacts on water resources. These developments would be built in an extremely limited area – areas within SRMA's zoned for High Use or, in the case of trails, transitional use (per the ROS). The FFO would continue to use best management practices and monitor for any adverse impacts on water resources.

Special Status Species/Conservation Strategies

The conservation strategies would be adopted under alternatives B and D. Under Alternatives A, B, and D, certain recreational activities could be limited or prohibited on a short- or long-term basis to protect special status species and their habitats. For

example, the FFO might close trails in the Red Hills ACEC seasonally or permanently if excessive use is found to be causing irreparable damage to special status plants and rare soils. If that were to occur, it would result in minor short- or long-term impact for recreation. The conflicts are few and far between. Recreationists would move to other trails and areas.

Under Alternative C, recreation receives more management consideration. The Conservation Strategies would not be adopted and the Red Hills would become an SRMA. Potentially, recreation would receive equal weight in resolving conflicts between recreation and special status species.

Cultural Resources

Under all of the alternatives, the FFO would attempt to interpret cultural resources for the benefit of public land users. The FFO would interpret resources in the proposed South Yuba River, South Fork American River, and Merced River SRMAs. Even if done very well, interpretation would probably have an adverse impact on the resource, causing theft, vandalism, and accidental damage. Drawing attention to a cultural resource usually has this effect. However, the impacts on recreation would be beneficial. The public would have additional opportunities to learn about cultural resources on FFO-managed lands. These resources could be used to teach the public about the history and prehistory of these areas. Alternative C proposes the most cultural resource interpretation and might have the greatest beneficial impact on recreation. Alternative D is not far behind in terms of interpretation benefits.

Visual Resources

See Chapter 2.10 for a detailed description of the VRM classes proposed under each alternative. Under all of the alternatives, the proposed VRM classes would encourage the FFO to protect, and even attempt to enhance, the visual quality of all of the proposed SRMAs. Many of the VRM classes were established by community based plans and wild and scenic river management mandates. In particular, Alternative B gives the SRMAs the highest overall VRM classes. Maintaining visual quality is important to providing an outstanding recreational experience. Alternative B does this but may go too far because it could discourage the development of new trails, parking areas, and other recreational developments also needed to provide an outstanding recreational experience. Alternative D could be seen as the middle ground and perhaps the best scenario for recreation management because it strives to protect outstanding visual resource but also gives the FFO flexibility in allowing recreational developments.

Livestock Grazing

Grazing management under Alternative A would not likely impact opportunities for recreation. The presence of livestock near or in recreation areas can affect the recreational activities occurring in the area or have an impact on the user's enjoyment, depending on personal preference. This is a negligible and localized impact on recreation.

Under Alternatives B, C, and D, grazing would continue, albeit at different levels based on the specific alternative's management emphasis. The impacts would be similar to those under Alternative A. This is true even under Alternative C which proposes the largest increase in grazing production. None of the SRMAs would be affected. Within ERMAs some recreationists may enjoy viewing cattle on the landscape, while the signs of livestock grazing, such as fences, manure, and stock ponds, may impact the natural aesthetic for some visitors and impair the ability to enjoy the scenery and/or the solitude of the area they are visiting.

Energy and Minerals

Proposed actions under the energy and minerals program would have little effect on recreation. Under all of the alternatives, mineral leasing would be allowed only in areas with high potential, all of which are located in the CVAA and a portion of the YRAA. Most recreational use occurs in the other assessment areas. Impacts on recreation would, therefore, be negligible or none.

Saleable mineral development (mineral material sales and free use) would be allowed throughout the planning area, with some seasonal restrictions to protect significant environmental resources. The FFO would work to avoid conflicts with recreation. The proposed SRMAs are not important sources of saleable materials. The greatest potential area where conflicts could occur is in the Yuba Goldfields. This area is a major source of solid mineral materials. It is also used by fishermen, hikers, and others. There could be some minor adverse impacts to recreation here, if FFO-authorized sand and gravel sales go forward. In the long-term, the FFO would use sand and gravel sales to help restore the area ecologically. Recreational uses like fishing could be enhanced.

Under the various alternatives, the FFO's lands and realty program would withdraw from mineral entry many public lands with high recreation values, including the Red Hills and the South Fork American River. Valid existing rights would be upheld. The mineral withdrawals could help prevent conflicts between recreationists and miners. Alternatives B and D propose the most mineral withdrawals and might therefore have the most beneficial impact on recreation.

Transportation and Access

Each alternative establishes varying degrees of motorized and non-motorized access to and within FFO-managed recreation areas. Travel within the recreation is considered recreation in its own right. This subsection first discusses motorized recreation, and then non-motorized recreation.

Motorized Vehicle/OHV Use

Under Alternative A, all FFO-managed land would be open to motorized vehicle/OHV use, except where closed or limited by a prior FFO action. OHV users could potentially drive off of existing routes and go "cross country" blazing a new route. This management scenario would give motorized vehicle users the most opportunities and

would be most beneficial to this form of recreation. Motorized access to and within recreation areas would be the best under Alternative A. There could be moderate adverse impacts on mountain bike riders, horseback riders, hikers, and others who do like the noise, dust, and other effects of motorized recreation.

Under Alternative C, motorized vehicle/OHV use would be limited to all existing routes that have not been previously closed by a prior FFO action. This would give motorized vehicle users hundreds of miles of routes to drive, including some very challenging and popular four-wheel drive roads. Access to and within SRMAs and ERMAs would not be as good as under Alternative A. Alternative C would have a moderate beneficial impact on recreation.

Under Alternatives B and D, OHV routes would be limited to designated roads. Prevented from cross-country use and some challenging routes, many OHV users would probably move to other areas. This would have the least beneficial impacts on motorized recreation. Access to and within recreation areas would not be as good as under Alternatives A and C but would still be adequate. The designated routes would probably not become more crowded.

Motorized vehicle use impacts other recreational users such as mountain bikers, hikers, and horseback riders. Trail conflicts and noise would continue to diminish these users' recreational experience. Alternatives B and D present the best way to reduce these impacts.

Non-Motorized and Mechanized Use

The most new trails would be built under Alternative C and provide the most benefits to those who enjoy trails for non-motorized/mechanized uses. Under Alternative B, less trail would be built. Alternative D is intermediate between alternatives B and C.

Lands and Realty (Land Tenure Adjustment)

All of the alternatives allow for land acquisition and disposal to further various management objectives (recreation, environmental protection, economic development, etc.). Under Alternative A, the acquisition of lands within popular recreation areas (the proposed SRMAs), ACECs, and wild and scenic river corridors would enhance public enjoyment and increase resource management efficiency. The FFO would enhance recreation by acquiring lands that offer desirable opportunities and that improve public access to these areas.

Under Alternative B, the FFO would give priority to the acquisition of lands that have environmental importance rather than recreational potential. Opportunities to acquire trailheads/key access points, trails and potential trail routes, and other recreational opportunities would not be pursued. This would have a minor to moderate adverse impact on recreation.

Under Alternative C, the FFO would place an emphasis on the acquisition of lands that have great recreational potential or that improve access to FFO-managed land. The FFO would attempt to consolidate lands in and adjacent to the proposed SRMAs. Acquisition of new lands for recreation or better access to key recreation facilities would have a long-term beneficial impact on recreation.

The FFO would give priority, under Alternative D, to lands that provide multiple uses. Priority would be to consolidate land holdings, reduce in-holdings in special designation areas (especially wild and scenic river corridors and ACECs) and acquire key trails and trail access. This would result in a moderate beneficial impact on the recreation program as it would reduce incompatible uses within recreation areas and maintain and improve viewsheds and access.

Special Designations (ACECs)

Recreational use would be affected by the designation of new ACECs/RNAs and additions to existing ACECs. These ACEC designations would be made to protect important natural resource values. In some cases, certain recreational uses are clearly incompatible with these designations. Of special interest are the use restrictions placed recreation activities in the proposed Pine Hill Preserve ACEC and the Red Hills ACEC.

Pine Hill Preserve

Under Alternatives B and D, FFO-managed lands in the Pine Hill Preserve would be designated an ACEC. If this area is designated, the following use restrictions would apply. The FFO would: allow hunting; prohibit overnight camping; allow commercial uses through special recreation use permits; and limit equestrian and mountain biking use to existing trails. It is unlikely that these use restriction would have a measurable impact on the recreation program. This area is not known for its hunting and camping opportunities. There is little opportunity to ride cross-country on horseback or mountain bikes in the Preserve because it is so brushy and the terrain is steep in areas. The impacts of keeping horseback riders and mountain bikers on existing trails would be negligible on recreational opportunities.

Red Hills ACEC

The following use restrictions slated for the Red Hills ACEC would affect recreation:

- Allow hunting.
- Prohibit overnight camping.
- Allow commercial uses through special recreation use permits.
- Maintain existing facilities to support pedestrian and equestrian activities.
- Allow non-motorized recreation use only.

- Limit equestrian and mountain bike use to existing designated trails. Creation of unauthorized trails would be prohibited. Proposals for new trail development would be considered on a case-by-case basis. Trails may be designated closed to equestrian and mountain bike use due to impacts on ACEC habitat values, visual qualities, and other factors on a case –by-case basis and with appropriate public comment.

The use restrictions for the Red Hills area, as proposed under Alternatives B and D, would have negligible to minor impacts on recreation in this area. Hunting would be allowed, which would be of moderate benefit for hunters. The area would be closed to overnight camping. Given that camping is not currently available in the Red Hills, this would be a negligible adverse recreation impact. Commercial uses would be allowed through special recreation use permits, which would be a minor beneficial impact on recreation. Permitting would allow the FFO to prepare for commercial use (i.e., movie filming, organized horseback rides, etc.) including avoiding conflicts between commercial activities and other users. Equestrian and mountain bike use is limited to existing designated trails. Proposals for new trail development would be considered on a case-by-case basis. Trails may be designated closed to equestrian and mountain bike use due to impacts to ACEC values, visual qualities, and other factors. The decision would be made on a case-by-case basis with appropriate public comment. If the trails are closed, it would be a minor but temporary adverse impact on recreation.

Special Designations (Wild and Scenic Rivers)

Under Alternatives B, C, and D, the South Fork American River would be recommended as suitable to become a wild and scenic river. One of its outstandingly remarkable values is recreation. The river is among the most popular white water rivers in the country. If the South Fork receives wild and scenic status, the FFO would be required to protect and enhance this value. This would have a long-term and potentially major beneficial impact on recreation because the wild and scenic designation would foreclose on the possibility of a major dam/reservoir project that would inundate the area and destroy the outstandingly remarkable recreation value.

4.15.4 Impacts of the Recreation Program on the Environment and Other FFO Programs

This section summarizes some of the impacts on the environment and other FFO programs that could result from implementing the recreation program's proposed actions. See the individual sections for more detailed discussions of these impacts. These sections include soils (4.1), water (4.2), special status species (4.6), fire (4.7), cultural (4.8), visual resources (4.10), energy and minerals (4.14), transportation and access (4.16), lands (4.17), and special designations (4.19).

4.15.5 Cumulative Impacts

There are two possible adverse cumulative impacts. First, the FFO's effort to accommodate increased recreation demands may lead to additional recreation demands – demands that may far exceed what are currently anticipated. There are numerous outdoor

recreational opportunities in the planning area. Outstanding opportunities exist on public lands managed by the CDRC, USBR, USFS, and NPS. Among these public land managers, the FFO has been in a unique position to provide recreational opportunities very near areas that are experiencing explosive population growth. FFO-managed recreation areas like the Cronan Ranch on the South Fork American River are within a short driving distance of metropolitan Sacramento and other regional urban areas.

The construction of additional parking areas, bathrooms, trails, etc. in popular FFO-managed recreation areas, as proposed under the Sierra RMP, may spur additional demand as people find out about these areas and return with their friends and family. The FFO could become the victim of its own success by creating a wealth of recreational opportunities on public lands that are easily accessible to a growing population. This scenario is possible but highly speculative, and it is difficult to say which alternative would be best for alleviating the potential for these kinds of adverse cumulative impacts. Under Alternative B, the FFO would emphasize environmental protection rather than recreation. Under this alternative, the FFO may be able to head off the problem of FFO-managed lands becoming so popular that they get overrun, diminishing the experience for all user groups. This may also be possible under Alternative D, but to a lesser extent. On the other hand, it is possible that the recreation and access emphasis of Alternative C could accommodate increased public demands over the next 20 years.

The second possible impact concerns OHV use. OHV use is becoming an extremely popular form of recreation in California. It usually requires large acreages and viable route networks to prevent conflicts between riders and to avoid impacts to adjacent private property. Driving off the existing routes (“free wheeling”) is popular with many OHV users but can take its toll on the environment. Off-road use can destroy vegetation, damage archaeological resources, disturb certain wildlife species, and cause serious erosion problems. The FFO manages relatively small tracts of public lands. These lands are often brushy and have steep terrain, providing few places for OHV users to go. The FFO’s land ownership pattern appears to be incompatible with OHV use. As a result, the FFO proposes to limit OHV use to existing routes (under Alternative C) or to designated routes (under Alternative D).

Placing heavy restrictions on motorized recreation/OHV use, as proposed under alternatives B, C, and D, could displace motorized use to the jurisdiction of other regional land managers like California State Parks or the USFS, which could, in turn, outstrip their capacity to accommodate the additional use. This would especially true for land managers that were not prepared for additional visitors. There are currently few OHV parks in the planning area. The USFS provides routes and other facilities for OHV users but substantial sections of national forests have been closed to OHV use, or OHV use has been restricted to designated routes. Overcrowding and overuse could lead to additional conflicts among user groups. However, there is little evidence that this would actually happen. Currently, FFO-managed land receives little OHV use, probably because the office manages mostly small tracts of public land that provide few viable OHV opportunities. OHV use is increasing, but the expected cumulative impact of limiting this use to existing routes (or designated routes) on FFO-managed land would be negligible to minor in scale. Leaving FFO-managed land open to OHV use, as proposed under

Alternative A, would do little to help accommodate increasing OHV use in the region. FFO-managed lands provide few opportunities for this use.

4.16 Transportation and Access

4.16.1 Introduction

Refer to Section 2.16 for the proposed transportation and access proposals under each alternative, and refer to Section 3.16 for a description of existing transportation and access opportunities in the Sierra Planning Area. This section describes impacts that may be caused by implementing the transportation and access proposals as well as impacts caused by implementing proposals from other FFO programs. Refer to section 4.15 (Recreation) for a discussion of the impacts on non-motorized trail use and motorized (OHV) recreation.

For ease of reference, the management goal for transportation and access is restated below:

- Provide for appropriate levels of motorized vehicular and non-motorized (e.g., pedestrian, equestrian, and mountain bike) uses commensurate with other resources and resource uses.

The aspects of access addressed in this section relate to *casual use by the public*. Other aspects of access, which would *not* be affected by the route designation discussed below, include: FFO authorizations granting specific use rights to specific roads (ROWs, permits); development and use of roads for specific commodity extraction/utilization actions (timber harvest, mining, grazing); and use of roads by emergency services personnel (fire, police, search and rescue, etc).

All FFO-managed lands in the planning area are assigned one of three travel management designations: (1) open, (2) limited (to designated routes), or (3) closed. The four alternatives address different options for designating FFO-managed land given the FFO's ownership pattern and the sensitivity of its resource base. The transportation and access proposals presented in alternatives B, C, and D would be affected by the FFO's ROW program. This program is described in Section 4.17 (Lands and Realty). Table 4-3 summarizes the use designations for motorized vehicles including off highway vehicles or OHVs.

Table 4-3 Designations for Motorized Vehicles

	Alternative A	Alternative B	Alternative C	Alternative D
Motorized vehicle/OHV use designations for all FFO-managed land	Open (except where previously closed or limited)	Limited to designated routes (74 miles)	Limited to all existing routes (not previously closed)	Limited to designated routes (74 miles)

Under Alternative A, all FFO-managed lands would be open to motorized vehicle/OHV use, except for those lands that have already been closed or limited through a prior FFO action.

Under Alternative B, motorized vehicle/OHV use would be limited to all existing routes (some of which are on easements across private property), except for those existing routes that have already been closed through a prior FFO action. Under Alternatives B and D, motorized vehicle/OHV use would be limited to designated routes managed by the FFO (some of which are on easements across private property). These routes are depicted on Maps 6a to 6g. People or companies holding ROWs, or that have other kinds of authorization from the FFO would continue to be allowed to use motorized vehicles where they have authorization.

Some of the designated routes depicted in Maps 6a to 6g in Appendix A have an “interim” status. They may remain open, depending on the outcome of future activity-level plans, developed with further levels of public input and environmental review. The criteria used to designate routes at this stage are located in section 2.16.

4.16.2 Impacts of the Transportation and Access Proposed Actions on Transportation and Access

Under Alternative A, cross-country motorized vehicle use would be allowed on many FFO-administered parcels. OHV users could potentially drive off of existing routes and create new ones. With increasing OHV use throughout the planning area, this would inevitably lead to an unsafe, chaotic transportation system that would be unfeasible for the FFO to manage. As the route system continued to develop, access would become less straightforward to the public. Motorists would potentially get lost or get their vehicles stuck on newly developed routes. Given the scattered nature of FFO-managed lands, impacts to adjacent private property (i.e., dust, noise, inadvertent trespass, etc.) would be unavoidable because virtually all of the routes that the FFO manage are “route segments” that cross public land and then return to private land. Working with private landowners to resolve trespass problems could place a tremendous management burden on the FFO.

Alternative C has many of the same problems that Alternative A has, except that Alternative C greatly alleviates the problems of cross-country OHV use by limiting motorized vehicles to existing routes that have not already been closed. Many existing routes have been created without FFO authorization or have become unsafe to drive, even for dirt bikes. Under Alternative C, the system would remain unsafe, chaotic, and difficult for the FFO to manage. Adverse impacts to private property would still occur on a wide scale.

Alternatives B and D offer perhaps the best management scenario for maintaining viable transportation and access. This alternative narrows the FFO’s transportation system down to key designated routes that ensure that the public would have straightforward, safe access to most FFO-managed lands, including trailheads, campgrounds, boat launches, and other developed recreation areas. This system of designated routes would improve safety, facilitate access to large blocks of public lands, respect historic public use, prevent trespass and other annoyances to private landowners, and maintain the regional transportation network. Also, the system can be feasibly managed by the FFO. The system would also help prevent wildfire and inadvertent damage to natural and cultural resources (as discussed in other sections in this chapter).

Those members of the public interested in driving cross-country for its own sake (i.e., driving off-road as an end in itself rather than for purposes of access or transport) would have their opportunities constrained by Alternatives B and D. In this respect, Alternatives B and D could be seen as having adverse impacts on public land access.

4.16.3 Impacts of Other FFO Programs' Proposed Actions on Transportation and Access

Cultural Resources

Cultural resource protection and preservation proposals in Alternatives B and D would have the most direct adverse impacts on access and transportation by requiring more route and access closures to protect significant cultural resources, compared to Alternatives A and C.

Lands and Realty

ROW proposals would continue to be considered under all alternatives. It is anticipated that that ROW program would continue to process the same annual caseload; therefore, impacts on transportation and access would be nonexistent. Land tenure adjustments strategies under the four alternatives focus on the consolidation of public lands either in areas with high-quality environmental resources or high-quality recreational resources, or both. Regardless of the emphasis, providing access to these areas is a key consideration. This would likely have a long-term beneficial impact on transportation and access.

Recreation

Under Alternatives B, C, and D, several outstanding FFO-managed recreation areas would be designated as SRMAs and managed primarily for river-oriented recreation (i.e., white-water rafting, water play, hiking, etc.). Presently, these recreation areas have excellent access via public roads and highways. The FFO has already built parking areas, campgrounds, boat launches, and roads to facilitate access to these areas. Access within these recreation areas is also excellent. The FFO has established non-motorized trails, primitive campgrounds, horse watering troughs, and bathrooms. Under all of the alternatives, the FFO would continue to build additional non-motorized trails and other facilities to improve access to and within the recreation areas/SRMAs. The impacts would be long-term and beneficial.

However, those seeking motorized/OHV access within FFO's recreation areas would find limited opportunities under alternatives B, C, and D, and specially alternatives B and D. The most popular recreation areas would be managed for low impact river-oriented recreation. Under alternatives B, C, and D, the proposed SRMAs would contain mostly "Remote Use" and "Transitional Use" areas with few motorized vehicle routes. In fact, motorized vehicle use is restricted mainly to the "High Use" areas, which are the access points (trailheads, parking areas, boat launches, campgrounds, etc.). To the extent that motor vehicle use is constrained within proposed SMRAs, impacts to motorized vehicle access could be considered adverse. Many of the most popular recreation areas managed

by the FFO (i.e., the South Fork American) are already have closed or limited motorized use designations which were established as a result of community based plans. These designation would remain in effect regardless of the alternative chosen.

Special Designations (ACECs and Wild and Scenic Rivers)

Under Alternatives B and D, several new ACECs and wild and scenic rivers are proposed. Less special designations are proposed under Alternative C, and no new designations are proposed under Alternative A. Generally, BLM has a tendency to restrict transportation and access within ACECs and wild and scenic river corridors. This is done to protect outstanding (or sometimes hazardous) values which led to the special designation. “Open” motorized vehicle/OHV use is particularly destructive to outstanding values like water quality, special status plants, paleontological resources, rare soil formations, etc. While restricting access may be good for protecting ACECs and wild and scenic rivers, it can cause adverse long-term impacts on access to public lands. Alternatives B and D, which propose the greatest number of new special designations, could be seen as having the greatest adverse effect on access to FFO-managed land.

4.16.4 Impacts of the Transportation and Access Proposed Actions on the Environment and Other FFO Programs

The proposed actions are expected to have a considerable impact on the environment and other FFO programs. Refer to other sections in this chapter for more detailed discussions. These sections include 4.2 (Soil Resources), 4.3 (Water Resources), 4.4 (Vegetative Communities), 4.5 (Fish and Wildlife), 4.6 (Special Status Species), 4.7 (Wildland Fire Ecology and Management), 4.8 (Cultural Resources), 4.15 (Recreation), 4.17 (Lands and Realty), 4.19 (Special Designations), and 4.20 (Social and Economic Impacts).

4.16.5 Cumulative Impacts

The FFO’s route network is not critical to the regional transportation system. Even with the reduction of available routes proposed under Alternatives B and D, the cumulative effect would be negligible or none. Key routes would remain open for motorized vehicle use.

The cumulative impacts on motorized recreational use (i.e., OHV use) are discussed at length in the section on recreation (4.15). Demand for OHV/motorized recreation is expected to be met on other lands in the planning area and in areas outside the planning area. OHV routes are provided on nearby by national forests and on public lands managed by the California Department of Parks and Recreation. Because the FFO’s would not be helping to meet this demand, the burden for providing motorized recreation activity would lie with other public land managers and perhaps even private entities.

Considering OHV’s growing popularity, it is possible that there would not be adequate opportunities to for OHV/motorized recreation to meet demand in the planning area. The experience may become less desirable at available locations if they become crowded.

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4.17 Lands and Realty

4.17.1 Introduction

Refer to Section 2.17 for the proposed lands and realty management actions under each alternative, and refer to Section 3.17 for a description of existing lands and realty actions in the Sierra Planning Area. This section describes the impacts on the lands and realty program and on opportunities for the public and local governments to receive various authorizations (ROWS, R&PP Act leases, etc.) through this program.

For ease of reference, the management goal for lands and realty is restated below:

Develop a public land pattern which enhances resource values and uses.

4.17.2 Impacts of the Lands and Realty Proposed Actions on the Lands and Realty Program

Land Tenure Adjustment

Under Alternative A, the no action alternative, the FFO would acquire and dispose of lands on a case-by-case basis in conformance with the Sierra MFP. Some improved efficiencies in the management of public lands would be realized, including reduced conflicts with other public and private landowners and increased management efficiency. Although this alternative would provide some direction for the acquisition and disposal of land, more specific direction is needed. To the extent that the existing situation is deficient in direction, this could be considered an adverse impact on the lands and realty program.

Under Alternatives B, C, and D, the FFO would retain public lands within designated ACECs, SRMAs, the wilderness study area, and wild and scenic river corridors. The FFO would also retain lands with outstanding cultural and biological resources, including federally listed species and cultural resources eligible for inclusion on the National Register of Historic Places. These alternatives would beneficially affect land ownership by enhancing the management of these protected areas; reducing administrative costs to the FFO with the disposal of unmanageable and uneconomic parcels with low resource value; and providing more effective land management. All of the alternatives, to different degrees, would have a beneficial effect on the FFO's lands and realty program (see specific alternatives below). The direct impacts would be administrative in nature. The management actions would probably lead to more efficient management of the public lands and protect important biological, cultural, and recreational resources.

Under Alternative B land tenure adjustment would focus on preserving and protecting the environment. The FFO would retain public lands with BLM sensitive species and state listed species (in addition to the lands and resources stated under Common to Alternatives B, C, and D). Additional cultural resources may be retained. Scattered tracts with low resource value would be targeted for disposal. This strategy would consolidate important resource lands in public ownership and eliminate lands low in

resource values. This would have a beneficial effect on the lands and realty program by opening up various opportunities for land exchanges, sales, etc. involving high quality environmental resources.

Under Alternative C, land tenure adjustment would focus on obtaining high quality recreation land rather than high quality environmental resources, like BLM sensitive species habitat. This would have a beneficial effect on the lands and realty program by opening up various opportunities for land exchanges, sales, etc. involving high quality recreation resources.

Alternative D is a compromise between alternatives B and C. For the lands and realty program, the impact of this alternative would not differ substantially from the other alternatives. Land acquisitions and disposals would be pursued, although for various management ends. Land acquisitions to expand ACECs, SRMAs, and wild and scenic river corridors would be emphasized. This alternative would best address the goals of the lands and realty program by giving it the most flexibility in pursuing various opportunities. This alternative would, therefore, have the greatest beneficial impact.

Land Use Authorizations

There are no impacts identified under Alternative A. The preservation and protection emphasis of Alternative B could potentially reduce opportunities for the public to receive land use authorizations through the FFO's lands and realty program. Land use authorizations that potentially damage sensitive environmental resources would be denied. Alternatives C and D, which would require the FFO to make authorizations on a case-by-case basis, responds more effectively to current and future demand for land use authorizations.

Withdrawals/Classifications

Generally, the mineral withdrawals proposed under the four alternatives would benefit natural and cultural resource programs but would pose an adverse impact on opportunities for the development of locatable mineral resources. Valid, existing rights would be protected under all alternatives. The impact would be greatest under Alternatives B and D.

4.17.3 Impacts of Other FFO Programs' Proposed Actions on the Lands and Realty Program

Special Status Species

To promote the preservation and recovery of special status species as called for, to some extent, in all of the alternatives, the FFO would be encouraged to acquire land with potential habitat for special status plant and animal species. This would be a beneficial impact for special status species protection proposals. Designation of areas for protection of special status species could limit some ROW authorizations. See Section 4.6, Special

Status Species, for information on specific areas that would be affected under each alternative.

Appendix B contains the conservation strategies that the FFO developed with the USFWS to protect sensitive plant, animal, and insect species and their significant habitats. If adopted (as proposed under Alternatives B and D), these strategies could affect the lands and realty program by limiting the location of utility facilities or other authorized land uses. The strategies could also play a part in determining which lands would be acquired or whether some land exchanges could go forward.

Special Designations

Any areas with special designations would receive management attention. The FFO would probably limit opportunities for various kinds of land use authorizations to protect the special designation values. Alternative B would have the most special designation areas and would, therefore, present the greatest impact on the lands and realty program. Alternative C would have the fewest special designations and would cause the least impact on land use authorizations. The impacts of Alternative D would fall somewhere between Alternatives B and C.

Visual Resources

The restrictions that some areas would be placed under to protect visual quality could affect the lands and realty program. For example, BLM might not approve transmission lines, communication sites, or other structures in areas with VRM Class I or II status. These land use proposals would be analyzed on a case-by-case basis and some could be denied or redesigned because they would degrade Class I or II visual resource management goals. Impacts on the lands and realty program would be greatest under Alternative B, which would create the greatest amount of Class I and II areas. Lesser impacts to the lands and realty program would occur under Alternatives D and C.

Under all of the alternatives the FFO would be encouraged to acquire lands in areas with outstanding visual resources (and high VRM class designations), which could have a beneficial impact on visual resource management goals. See Section 4.10, (Visual Resources) for a description of the proposed VRM class designations and the areas proposed for visual management.

4.17.4 Impacts of the Lands and Realty Program on the Environment and Other FFO Programs

For more detailed information, refer to Sections 4.1 (Air Quality), 4.2 (Soils Resources), 4.3 (Water Resources), 4.4 (Vegetative Communities), 4.5 (Fish and Wildlife), 4.6 (Special Status Species), 4.8 (Cultural Resources), 4.9 (Paleontology), 4.10 (Visual Resources), 4.14 (Energy and Minerals), 4.15 (Recreation), and 4.19 (Special Designations).

4.17.5 Cumulative Impacts

The cumulative impact of the lands and realty program would likely be beneficial. The consolidation of public land with recreational and environmental resources, as proposed in all of the alternatives to one degree or another, would benefit communities, tourists, and other who enjoy the central Sierra Nevada foothills. This area is experiencing rapid growth, and there is great demand for open space, places to recreate, and environmental protection. FFO's management strategy addresses this demand and helps to compensate for a loss of open space.

As discussed in more detail in the section on social and economic impacts (4.20), retention of lands by the FFO would likely increase the value of land in many growing residential communities in the planning area. Other federal lands in the planning area have caused similar increases in community real estate values and demands.

The growing residential and commercial development on private lands may lead to an increase in applications for ROWs for access roads, utility lines, and communication facilities. This demand will likely be made of federal lands in the area, including FFO-managed lands. The alternatives primarily provide for considering how best to meet these needs on a case-by-case basis.

4.18 Hazardous Materials and Abandoned Mine Lands

4.18.1 Introduction

Refer to Section 2.18 for the proposed hazardous materials and abandoned mine lands management actions, and refer to Section 3.18 for a description of the existing conditions relating to hazardous materials and abandoned mine lands in the Sierra Planning Area.

For ease of reference, the management goal for hazardous materials and abandoned mine lands is restated below:

Minimize hazardous conditions on FFO-managed lands to reduce risks to the public and to ensure environmental health and safety.

4.18.2 Impacts of the Program's Proposed Actions on Hazardous Materials and Abandoned Mine Lands

Management actions specified in Section 2.18 are common to all alternatives. Accordingly, impacts would be beneficial under all alternatives because the management actions represent measures to prevent releases of hazardous materials, remediate known sites contaminated with hazardous materials, and protect the public from physical hazards on abandoned mine lands. In addition, BLM is required by federal, state, and local regulations to collect, store, and dispose of hazardous materials and wastes appropriately.

These beneficial impacts are additionally ensured by implementing the recommendations from the past and future Compliance Assessment Safety, Health, and Environment (CASHE) audits. Such recommendations may include correcting deficiencies in storing hazardous materials, disposal practices for hazardous wastes, and other possible findings identified in the CASHE audits.

4.18.3 Impacts of Other FFO Programs' Proposed Actions on Hazardous Materials and Abandoned Mine Lands

Water Resources

Where there are water resources being contaminated by discharge of mine-related wastes, Clean Water Act enforcement actions would have long-term beneficial impacts. Remediation of mercury waste sites can control the off-site migration into adjacent surface waters, resulting in enhanced water quality.

Cultural Resources

Cultural resources significant for their historic values are sometimes affected by AML-hazmat concerns. Workings, structures, and buildings related to historic mining can have both historic significance and contaminant issues. Presence of toxic waste can constrain management for historic values, and, conversely, presence of historic values can complicate remediation of hazmat sites. An optimal management strategy often involves accommodation and compromise. In some cases where the FFO proposes to

develop an interpretive historic site, and contaminated mine waste must be cleaned up to insure public safety, the hazmat remediation can benefit both the cultural land AML programs.

Special Status Species (Conservation Strategies)

Alternatives B and D include implementing formal conservation strategies for fish and wildlife (Appendix B). These conservation strategies address protecting bat habitat, which often includes abandoned mine tunnels, shafts, and/or mill buildings. The FFO's ability to enhance public safety and/or reduce contaminant releases from these features could be complicated by the conservation strategies in the following ways:

- It is not desirable to block mine tunnels/shafts in such a way as to prevent bat ingress and regress. This can eliminate from consideration some simple and economical methods of closure. However, "bat gates" at tunnel/shaft entrances may be successfully employed.
- It may be desirable to keep intact abandoned mill structures used by bats for roosting. This is a potential resource protection/public safety conflict if building materials are sources of contaminant exposure to the public or the environment.

Due to the conservations strategies, some abandoned mine land remediation projects may have to be redesigned or not implemented under Alternatives B and D. The resulting severity of adverse impacts will be on a case-by-case basis. Alternatives A and C do not include implementation of the conservation strategies, and therefore these alternatives would not involve effects on the hazardous materials and abandoned mine lands program.

Transportation and Access

Route designations can have an indirect impact on hazardous materials because of the potential for illegal dumping. Routes designated as open, particularly in remote locations, can attract illegal dumping activity. Since Alternative A has no motorized use restrictions, this alternative represents the potentially most adverse impacts related to illegal dumping of hazardous materials. Alternatives B and D contain the most restrictive motorized route designations and, therefore, represent the alternatives with the least potential to result in adverse impacts from illegal dumping.

4.18.4 Impacts of the Hazardous Materials and Abandoned Mine Lands Program on the Environment and Other FFO Programs

The release of hazardous materials from illegal dumping and abandoned mine land wastes can have direct long-term impacts on environmental resources, including water and soil quality, and indirect impacts on fish and wildlife, vegetation, and air quality. The actions under all alternatives would have beneficial impacts on the environment. Refer to other sections, namely water resources (4.3), for more specific details.

4.18.5 Cumulative Impacts

The cumulative impacts of the management actions under all alternatives would be a benefit to the overall public safety and the environment by controlling or eliminating the potential for contaminants to migrate to surface soils, surface water, and groundwater. Cumulative impacts from hazardous materials on specific resources such as water quality or soils are addressed in those sections.

Table 4-4 Special Designation Proposed by State or Federal

	Alternative A	Alternative B	Alternative C
ASD/CNRNAs			
At 700 to be maintained	0	0	0
ACR/CNRNAs to be maintained	0	12,000	0
At 700 additions	0	0	0
Total ACR/CNRNAs	0	12,000	0

4.2.3 Cumulative Impacts: The cumulative impacts of the proposed action and other actions in the area are not expected to be significant. The cumulative impact of the management actions under all alternatives would be expected to be beneficial to the overall public safety and the environment by reducing the potential for components to trigger an emergency response. Cumulative impacts from historic practices on specific resources are not expected to be significant. The cumulative impacts of the proposed action are not expected to be significant. The cumulative impacts of the proposed action are not expected to be significant.

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- It is not possible to predict the exact number of people that will be injured or killed in a fire. However, the number of people that will be injured or killed in a fire is expected to be significantly reduced by the proposed action.
- It is not possible to predict the exact number of people that will be injured or killed in a fire. However, the number of people that will be injured or killed in a fire is expected to be significantly reduced by the proposed action.

Due to the nature of the proposed action, the cumulative impacts of the proposed action and other actions in the area are not expected to be significant. The cumulative impact of the management actions under all alternatives would be expected to be beneficial to the overall public safety and the environment by reducing the potential for components to trigger an emergency response.

4.2.4 Impacts of the Proposed Action on Designated and Abandoned Mine Lands: The proposed action is not expected to have any significant impacts on Designated and Abandoned Mine Lands. The proposed action is not expected to have any significant impacts on Designated and Abandoned Mine Lands.

4.2.4 Impacts of the Proposed Action on Designated and Abandoned Mine Lands

The proposed action is not expected to have any significant impacts on Designated and Abandoned Mine Lands. The proposed action is not expected to have any significant impacts on Designated and Abandoned Mine Lands.

4.19 Special Designations

4.19.1 Introduction

Refer to Section 2.19 for the special designation proposals under each alternative, and refer to Section 3.19. This section describes impacts that could be caused by implementing the special designation proposed actions on FFO management. It also discusses the impacts on special designations (existing and proposed) caused by implementing the proposed actions of other FFO programs.

For ease of reference, the management goals for special designations are restated below:

Congressional designations: Continue plan implementation, plan maintenance, and management on congressionally designated lands in accordance with provisions of the respective law.

Administrative designations: Provide protection for or management of significant resources on public lands.

There are three types of special designations discussed in this RMP: WSRs, ACECs, and RNAs which are a type of ACEC. The Merced River Wilderness Study Area was congressionally designated. It would require congressional action to turn into a wilderness area or to release it. SRMAs are a type of designation that is related to recreation. SRMAs are discussed in the sections 2.15, 3.15, and 4.15.

The four alternatives propose to maintain, designate, or recommend the designation of various FFO-managed lands. Table 4-4 summarizes the special designation proposed actions by alternative.

Table 4-4 Special Designation Proposed Actions by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
ACECs/RNAs				
ACECs (to be maintained)	(6) 12,029 acres	(6) 12,029 acres	(6) 12,029 acres	(6) 12,029 acres
ACECs/RNAs (to be designated)	0 0 acres	(7) 12,415 acres	0 0 acres	(6) 12,217 acres
ACEC additions	0 0 acres	(3) 3,439 acres	0 0 acres	(3) 3,439 acres
Total ACECs/RNAs	(6) 12,029 acres	(16) 27,883 acres	(6) 12,029 acres	(15) 27,685 acres

Table 4-4 Special Designation Proposed Actions by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Wild and Scenic Rivers				
Totals (existing to be maintained)	(4) 14,249 acres 40.4 miles	(4) 14,249 acres 40.4 miles	(4) 14,249 acres 40.4 miles	(4) 14,249 acres 40.4 miles
Total (to be recommended suitable to Congress)	(0)	(7) 12,845 acres, 111.7 miles	(1) 2,122 acres, 22.2 miles	(2) 5,860 acres, 42.4 miles
Total Wild and Scenic Rivers	(4) 14,249 acres, 40.4 miles	(11) 27,094 acres, 152.1 miles	(5) 16,371 acres, 62.6	(6) 20,109 acres, 82.8 miles
Wilderness Study Area				
Merced River Wilderness Study Area (existing to be maintained)	Yes 11,643 acres*	Yes 11,643 acres*	Yes 11,643 acres*	Yes 11,643 acres*
TOTAL (Special Designation)	(11) 37,921 acres	(28) 66,620 acres	(12) 40,043 acres	(22) 59,437 acres

* The acreage total for the Merced River Wilderness Study Area does not include 540 acres in the Merced Wild and Scenic River corridor (wild section) and 900 acres in the proposed North Fork Merced Wild and Scenic River corridor.

4.19.2 Impacts of the Special Designation Proposed Actions on Special Designations

The alternatives propose varying acres of special designations, use restrictions, and numbers of suitable wild and scenic rivers, ACECs/RNAs, and ACEC additions which, depending on the alternative chosen, would have an effect on the special designation management. Map 2 in Appendix A shows areas with special designations. Map 5 (and 5a to 5d) in Appendix A show the areas with proposed ACEC designations. Map 8 shows areas with proposed wild and scenic river designation.

Wild and Scenic Rivers

Under Alternative A, no rivers would be recommended to Congress as suitable for inclusion in the NWSRS. The outstandingly remarkable values of the seven eligible rivers (all recommended suitable to Congress under alternatives B, C, and D) could be adversely affected by a water project (dam/reservoir, etc.). Also, the NWSRS would not include outstanding rivers. Barring a major water project, the effects would probably be negligible. The FFO recognizes the outstandingly remarkable values of each of the proposed wild and scenic river corridors. Many of these values (scenic, water quality, cultural, biological, etc.) would be protected by the FFO under various federal law, regulations, and policies.

Under Alternative B, seven rivers would be recommended as suitable for inclusion into the NWSRS. This would be, by far, the most rivers recommended suitable under any of the alternatives, and clearly this alternative would be the best scenario for the protection of the outstandingly remarkable values. If the seven rivers were to become part of the NWSRS, they would receive additional consideration and protection because of their wild and scenic status. Wild and scenic river management plans would be developed for each river to ensure the protection and enhancement of their outstandingly remarkable values. BLM would consult with other land managers and owners in the rivers corridor to minimize impacts to these values. Facilities, access, parking and other ground-disturbing activities would be consistent with the goals of this RMP and the management plan. These activities would also be subject to additional site-specific NEPA analyses prior to implementation.

Under Alternative C, only the South Fork American River would be recommended as suitable for inclusion in the NWSRS. If the South Fork is eventually placed in the NWSRS by Congressional action, the river's outstandingly remarkable cultural and recreational values would receive additional management attention and protection. Similar to Alternative A, the six other eligible rivers could be threatened by a major water project, though until a project is built, their outstandingly remarkable values would continue to receive protection by the FFO.

Under Alternative D, two rivers – the South Fork American River and North Fork/main stem Mokelumne River – would be recommended as suitable for inclusion in the NWSRS. While not receiving the same level of protection as they would as Congressionally designated wild and scenic rivers, the other five proposed wild and scenic rivers would be managed by the FFO in a way that protects their outstandingly remarkable values.

ACECs

Under Alternative A, the six currently designated ACECs would remain designated and managed under existing direction. No additional ACECs/RNAs would be designated under this alternative. Therefore, values for which other alternatives have proposed new ACECs and RNAs would receive less consideration. However, the potential for these values to be adversely affected by the management actions of other program activities is not great. The ACEC designation would increase protection.

Under Alternative B, the six currently designated ACECs would be maintained. Seven new ACECs and three additions to existing ACECs would be designated. As a result, the designations would protect important environmental resources, including habitat for special status plant and animal species, paleontological resources, and rare soils. The designations would have major long-term beneficial impacts on these important resources because they would focus FFO management attention on them.

Under Alternative C, no new ACECs would be designated. Because ACEC designations would focus management attention on important resource values, the lack of designation

under this alternative could result in moderate adverse impacts areas with ACEC values. Lands specifically acquired to add to ACECs would not be added to these ACECs.

Under Alternative D, six existing ACECs would remain designated. Six new ACECs and three additions to existing ACECs would be designated; the Yuba Brownsville would not be designated. The benefits would be similar to Alternative B, except that the important resources (special status plants) in the proposed Yuba Brownsville ACEC would not receive the same management attention.

ACEC Use Restrictions

The FFO proposes various use restrictions for all of the proposed ACEC and ACEC additions. More detailed use restrictions are proposed for the Pine Hill Preserve ACEC and Red Hills ACEC (proposed under Alternatives B and D). The use restrictions deal with overnight camping, motorized vehicle use, land use authorizations (i.e., ROWs, R&PP Act leases, etc.), grazing, and other activities that could irreparably damage ACEC values such as special status plants/animals, rare plant communities, usual soil formations, paleontological resources, and the Merced River. The proposed use restriction would have a beneficial impact on the management of areas with special designations. ROW/road construction in the Pine Hill Preserve is a particular threat to the special status species here. It is estimated that the development of Wild Chaparral Road would directly impact (destroy) rare plant populations within the Preserve but would also take away lands that have already been set aside for conservation and interfere with local, state, and federal conservation goals for rare plant habitat protection. Funds to acquire this parcel were contributed by the USFWS, USBR, National Fish and Wildlife Foundation, and the Wildlife Conservation Board. All of these agencies donated their funds with the express understanding that the land purchased would be used for the conservation of five federally and state listed species and the habitat on which they depend. To use the land for another purpose that would involve the destruction of large numbers of plants of these species, and the permanent destruction of their habitat would violate the intent under which the funds were donated.

4.19.3 Impacts of Other FFO Programs' Proposed Actions on Special Designations

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Under Alternative A, all FFO-managed lands would be open to motorized vehicle/OHV use except where they have been closed or limited by a prior FFO action. Open lands would include areas proposed for special designation. Major adverse impacts on exceptional water quality, scenic, special status species, rare soils, and paleontological resources in areas with special designations would be expected as a result of open "cross country" OHV use.

Under Alternative C, motorized vehicle/OHV use would be limited to existing routes that have not been previously closed by a prior FFO action. Impacts to proposed special

designation areas would be potentially less than under Alternative A, but many areas with special designation values would be at great risk.

Alternatives B and D propose to limit motorized vehicle/OHV use to designated routes. This management scenario would have the greatest beneficial effect on areas with special designations and proposed special designations. The potential for OHV users to do damage to outstanding ACEC and wild and scenic values would be reduced under this alternative. It would be less likely for OHV users to drive cross-country across ACECs, potentially damaging special status plants, rare soils, or other outstanding resources.

Lands and Realty

Land Tenure Adjustment

Under Alternative A, the FFO would try to consolidate public lands along major rivers improve access to popular recreation areas, and expand protected areas (preserves, ACECs, etc.) for special status species and their habitats. The FFO would continue to try to acquire land in the Red Hills to add to the Red Hills ACEC and try to acquire lands to add to the Pine Hill Preserve and Cosumnes River Preserve (both proposed ACECs). This would have a moderate beneficial impact on these resources. More ACEC-caliber resources would be brought under FFO management and potentially protected from residential development and other threats.

Under Alternative B, the emphasis of land exchanges, land donations, and acquisitions using the Land and Water Conservation Fund would be on environmental protection and enhancement. The FFO would try to acquire special status species habitat, riparian forest, blue oak woodland, Central Valley wetlands, vernal pool habitat, and significant cultural resource. The FFO would attempt to expand its ACECs or acquire additional lands with ACEC values. Wild and scenic river corridors with outstandingly remarkable biological and cultural values would also be expanded through land exchanges and sales. This would have the greatest beneficial effect on special designation management.

Under Alternative C, acquisition would focus on the growth of recreation areas (proposed SRMAs) and wild and scenic river corridors with outstandingly remarkable recreational values. This emphasis would have the least beneficial effect on special designations. This is not to say that the benefit would not be at least moderate; but clearly the alternatives seek to consolidate holdings in a much wider array of areas with special designations.

Alternative D balances environmental protection and recreation demands. The FFO would attempt to consolidate public lands in areas with special designations. The benefits are intermediate to Alternatives B and C.

Mineral Withdrawals

Mineral withdrawals would have a moderate beneficial impact on areas with special designations or areas proposed for special designations. Most of these areas contain

special status plants and rare soil formations that are easily and irreparably damaged by mineral development – even impacts associated with prospecting. Alternatives B and D proposed the most extensive mineral withdrawals and would have the greatest benefit.

4.19.4 Impacts of Special Designations on the Environment and Other FFO Programs

The designations of ACECs and wild and scenic rivers typically have a beneficial impact on the environment. They do, however, tend to limit opportunities various kinds of use, like grazing, logging, high-impact recreation, etc. Impacts to resource use are generally adverse because of the use restrictions and management attention associated with special designations. Some of the resources that benefit include air (4.1), soils (4.2), water (4.3), special status species (4.6), cultural (4.8), visual resource management (4.10), and socioeconomics (4.20). See these individual sections for more detailed discussions of the impacts of special designations.

4.19.5 Cumulative Impacts

Because public lands managed by the FFO are intermixed with private lands and other ownerships, cumulative impacts would result on non-BLM lands from special designations; however, they are not expected to be adverse impacts. All alternatives would manage or improve areas with special designations, most of which are wild and scenic river corridors and/or habitat for special status plants and animals, rare plant communities, and other outstanding environmental resources. Because plant and animal communities do not distinguish between FFO-managed land and private land, any improved habitat protection would be expected to have cumulative beneficial impacts on habitat found in other FFO-managed land, other federally and state managed public land, and privately owned land across the planning area. This would be particularly evident with FFO management actions to designate additional ACECs and recommend additional wild and scenic river corridors, which could improve ecological health of adjacent lands. Although Alternatives A and C would have beneficial, cumulative impacts, Alternatives B and D would have the greatest beneficial, cumulative impacts because they have the most proactive special designation management actions.

Other agencies, particularly the USFS, manage some of the same biological resources and rivers that occur on FFO-managed land. These agencies also have beneficial impacts on these resources through retention and improvement. Residential development on private land would likely have an adverse impact on proposed wild and scenic river corridors and on outstanding biological resources that occur on those lands, increasing the importance of FFO-managed land with special designations.

4.20 Social and Economic Impacts (Including Environmental Justice)

4.20.1 Introduction

Refer to Section 3.20 for a description of the existing social and economic conditions in the Sierra Planning Area. There is no BLM social and economic program. The proposed actions under the various programs do impact social and economic conditions in the planning area and area addressed below.

4.20.2 Impacts of the FFO Programs' Proposed Actions on Social and Economic Conditions

Lands and Realty

Land Tenure Adjustment

The principal social and economic impacts caused by the Sierra RMP may arise from the FFO's role as a large regional landowner, with over 1,000 parcels dispersed throughout the heavily populated portions of the Sierra Nevada foothills. These areas – which are often relatively small tracts of public land – are increasingly serving as reservoirs of open space that offer opportunities for recreation, protect wildlife and plant habitat, buffer viewsheds from nearby residential development, and provide a small escape from the press of population. These factors have become more important as population pressure in central California increases. FFO-managed parcels affect residents' quality of life and may allow these residents to retain a sense of place that is threatened elsewhere in the region. At the same time, FFO-managed lands may have an adverse influence on quality of life, especially when people living adjacent to certain FFO parcels have to deal with public land uses and abuses (i.e., "squatting," shooting, off-road OHV use, illegal campfires) that can disrupt the enjoyment of their own property and may even affect its value.

The FFO land tenure adjustment, as proposed under all of the alternatives, could have beneficial social and economic impacts. Adjustment to resolve trespass, improve access, allow public facilities (under R&PP Act lease), to expand public ownership of significant biological habitat, or consolidate ownership (thus improving general management) would all work toward enhancement of the social and economic benefits described above. To some extent, individual property owners may lose access to or enjoyment of particular parcels adjacent to their own property because of land tenure adjustments. However, entire communities may gain from having larger and easier to access blocks of FFO-managed land in popular and scenic recreation areas.

All of the alternatives would involve some degree of land tenure adjustment, so they all would produce the described effects. However, the alternatives differ in the amount of adjustment that is anticipated, and so they would likely produce more or less social and economic impact. Alternative A would continue current land tenure adjustment patterns, which tend to involve following opportunities as they arise on a case-by-case basis.

Alternative B would focus on preserving and protecting sensitive resources, such as special designation areas and critical habitat for special status species. This alternative would do more to affect those who feel their quality of life is associated with increased open space, environmental protection, and ecosystem and habitat improvement and would not so much benefit those who value recreational opportunities. Alternative C would improve access to SRMAs and would expand these areas. This alternative would also authorize disposals to counties, through the R&PP Act, for facilities to enhance recreation area development. Acquisition would focus on obtaining high quality recreation land rather than habitat. The overall social effect of this alternative would be to improve quality of life for residents and non-residents alike who value access to recreation opportunities. Alternative D would not differ substantially from Alternative C, although more protection of resources would occur.

Mineral Withdrawals

Under Alternatives B and D, some FFO-managed land could be made off limits to mineral development through a mineral withdrawal, initiated by the FFO's lands and realty program. The proposal to withdrawal lands from mineral entry under Alternatives B and D is most notable. This would reduce opportunities for locatable mineral development. Overall, the mineral potential of the lands proposed for withdraw is not high. The proposed withdrawal should have a beneficial effect on the management of areas with special designations.

Recreation (Target Shooting Proposals)

Target shooting is a recreational use of FFO-managed land that is becoming increasingly controversial as homes are being built around FFO-managed land. The FFO frequently receives complaints by people who live adjacent or near the public land where shooting regularly occurs. Naturally, people fear for their safety; they do not want to get accidentally shot. Shooting has been cited by many as a negative social consequence of living adjacent to FFO-managed land. On the other hand, there a number of people who enjoy target shooting on public land. FFO-managed lands offer, in some cases, easily accessible and free (no fees) places to shoot.

Alternatives A, C, and D would continue the FFO's existing policy on target shooting: all areas are open to target shooting unless signed closed or closed through a previous FFO action. The FFO's most popular recreation areas (the proposed SRMAs) have shooting restrictions. Refer to the recreation section (4.15) for an analysis of impacts caused by these restrictions. Under Alternatives A, C, and D, the complaints caused by shooting would continue. There would be minor and sometimes moderate adverse impacts on social conditions. The impacts to shooters would be beneficial.

Under Alternatives B, shooting would be allowed in designated areas only. This alternative would likely result in reduced complaints, reflecting a quality of life improvement perceived by people who live around public land. Members of the public who are used to target shooting on FFO-managed land may be inconvenienced by Alternative B. The impact would be adverse but minor.

Transportation and Access (Motorized Vehicle/OHV Use Designations)

Under Alternative A, all FFO-managed land would be open to motorized vehicle/OHV use except where previously closed or limited by a prior FFO action. Due to FFO's scattered land ownership pattern in the planning area, trespass is a significant problem. The FFO manages many small tracts of public land. Often these tracts are entirely surrounded by private property. Routes of travel cross public land and then return to private property. Many routes are not public roads (the public does not have a ROW). Trespass is inevitable because motorized vehicle/OHV users are unaware of public land boundaries/land ownership and do not have permission to drive on private lands. This problem has resulted in numerous complaints by the public and affects the quality of life for property owners in the vicinity of public lands.

Alternative A would continue the current management of motorized vehicle/OHV use and would therefore not adequately address the trespass problem, resulting in continued impact the FFO's neighbors. At the same time, the FFO's current management strategy makes the public lands readily accessible to motorized vehicle/OHV users, enhancing their quality of life. This is true especially for those who depend on motorized vehicles/OHVs to access certain public lands. Others enjoy the thrill of successfully maneuvering a challenging four-wheel drive road.

Under Alternative C, motorized vehicle/OHV use would be limited to existing routes that have not been previously closed by a prior FFO action. Many routes would remain closed to motorized vehicle use, but hundreds of miles of routes in the planning area would be available. Under Alternatives B and D, motorized vehicle/OHV use would be limited to about 90 miles of designated routes. These routes are considered the "key" routes – the ones that offer the safest and most straightforward access to FFO-managed land, especially FFO's developed recreation areas. Alternative B would have the fewest routes available for motorized vehicle use.

Alternatives B, C, and D would all have a positive impact on trespass-related quality of life concerns. However, the clear guidance on motorized vehicle use, as provided under Alternatives B and D, would go a long way toward reducing the confusion that often leads to trespass problems. Alternatives B and D would have the most beneficial impact. Alternative C would have a less beneficial impact. Certain routes that encourage trespass would remain open.

All three alternatives would adversely impact those, both public land neighbors and visitors to the area, who are accustomed to the "open" designation for accessing public lands. Under Alternatives B and D, a small number of motorized vehicle/OHV users may be prevented from using routes that they enjoy.

Special Designations

Wild and Scenic Rivers

Under Alternative A, no additional rivers in the Sierra Planning Area would be recommended as suitable for designation as wild and scenic rivers. This alternative would allow for the potential construction of dams/reservoirs on rivers determined eligible and suitable for wild and scenic status under the other alternatives. At this time, there appears to be no substantive demand that would make construction of new dams or water diversions on these rivers economically feasible.

Under Alternative B, seven rivers would be recommended as eligible and suitable for wild and scenic river designation. Designation would not change the visual resources, recreation potential, or other resources of the rivers. The FFO would continue to manage their outstandingly remarkable values in an appropriate way. It would, however, signal the federal government's intention to maintain in perpetuity the free flowing conditions, visual qualities, and outstandingly remarkable values of these rivers. This would be beneficial to those who value these rivers and to those who live along the rivers and feel their quality of life is enhanced by the rivers' wild and scenic qualities. There is considerable evidence that proximity to rivers, greenways, and other natural amenities enhances property values. Designation of these rivers as wild and scenic would not necessarily increase adjacent and nearby property values, but it would probably lead to long-term maintenance of those values. The locally and seasonally important commercial rafting industry would also benefit, especially from the protection of the South Fork American River (Chili Bar to Salmon Falls stretch), among the most popular white water rivers in the U.S.

Alternative B could, pending congressional action, prevent the construction of new dams and other major water projects in the proposed wild and scenic river corridors. At this time, there appears to be no substantive demand that would make construction of new dams or other major water projects on these rivers economically feasible. However, if future water requirements and/or energy needs in California were to create such demand, this alternative would limit the regional opportunities for satisfying that demand and could result in more costly water or energy.

Under Alternative C, a section of only one river – the South Fork American – would be recommended for wild and scenic river designation. This would benefit those who value the recreation opportunities afforded by the South Fork and those who feel that their quality of life is enhanced by the river's free flowing qualities, scenic values, and excellent recreational potential. It may also lead to long-term maintenance of property values along the river corridor. The locally and seasonally important commercial rafting industry on the South Fork would also benefit from the maintenance of this extremely popular rafting river. Failure to designate the other six eligible rivers in the planning area, as proposed under Alternative C, would not diminish their current social and economic value. Outstandingly remarkable values would still be managed appropriately. However, the long-term protection of those values provided by wild and scenic status (as proposed under Alternative B) would not be assured.

Alternative C would prevent the construction of new dams and other major projects on the South Fork American River (Chili Bar to Salmon Falls stretch). As described under Alternative B, there appears to be no substantive demand that would make construction of a major water project on these rivers economically feasible at this time. However, if such demand were to arise in the future, this alternative would limit somewhat the regional opportunities for satisfying that demand and could result in marginally more costly water or energy.

Under Alternative D, two rivers would be recommended for wild and scenic river designation. These rivers are the South Fork American and the North Fork/Main Stem Mokelumne. The social and economic impacts would be similar to those of Alternative C. Both rivers have outstandingly remarkable cultural resource values. Both have notable scenic qualities and provide significant recreation opportunities. The South Fork, in particular, is a nationally important recreational river. The social impacts would be adverse if these rivers were to be dammed or were to lose their free-flowing condition as a result of some other kind of major water project. Economically, the impacts of this are unclear. The thriving water rafting industry that is built around the South Fork would be destroyed. The benefits of such a water project could be beneficial to the local economy, at least during the period of construction. Over the long-term, a major water project could provide water and energy at reduced costs to Californians. It could also prevent flooding downstream in the Central Valley, especially in Sacramento. However, there appears to be no substantial demand for water and energy at this time. The current system appears to be equipped to handle central California's water and energy needs for some time. The threat of flooding in the Central Valley lowlands is very real. Flooding is checked by several major reservoirs, including Pardee and Camanche on the Mokelumne River, and Folsom and Natomas on the American River. Taxpayers' dollars are best spent on projects designed to shore up and repair the levy system.

ACECs and ACEC Use Restrictions

The social and economic impacts of creating new ACECs and adding onto existing ACECs in the planning area are difficult to determine with any certainty. It is thought that there are beneficial long-term social impacts on those who favor open space and environmental protection. Public comments from the scoping meetings indicate that there are many people who live near FFO-managed lands in the planning area who feel this way. Since none of the ACEC designation proposals affect significant economic development opportunities (i.e., minerals, timber, grazing forage, recreational resources, etc.), it seems that the none of the ACEC designations, even the 10 new ACECs and ACEC additions proposed under Alternative B, would have an adverse economic impact.

A possible exception to this is the proposed Pine Hill Preserve ACEC. Under Alternatives B and D, 2,236 acres of FFO-administered land within the Preserve would be designated an ACEC to focus management attention on the protection of federally listed plants that occur in this area. This proposed ACEC would have use restrictions specifically designed to protect the listed plants. The use restrictions would include limiting the approval of ROWs and other kinds of land use authorizations. Put simply, no

land use authorizations would be allowed that cause direct or indirect damage to the listed plants.

The Preserve has beneficial social impacts. Because the Preserve lands are intermixed within a suburban environment, the interaction between the public and the Preserve lands is very high. The Preserve receives daily visitors from people hiking and observing nature, and seasonal visits from nature enthusiastic groups, students, Boy Scout troops, etc. The FFO has learned that most of the adjacent landowners are pleased to have Preserve lands adjacent to their property. They enjoy the natural views and appreciate the fact that their property value and quality of life are increased as a result of the Preserve. Preserve lands also create attractive greenbelts and viewsheds in a heavily developed area.

The economic impacts of turning the Preserve into an ACEC (with the associated use restrictions) are not clear. Some believe that the ACEC designation could adversely affect the booming housing and commercial development market of the local communities Cameron Park and Shingle Springs. Because housing and commercial development continues at a breakneck pace in this area (and would probably continue at this rate), there has been increasing pressure to establish roads, utilities lines, and other infrastructure within the Preserve. To date, no FFO-authorized ROW within the Preserve has been critical to a development. In fact, the FFO receives few ROW applications for the Preserve lands. One member of the public has expressed interest in developing Wild Chaparral Road. This road extends east to west for about half mile within the Preserve lands (between Many Oaks lane and Calderwood Road). The road parallels Highway 50. The development of Wild Chaparral Road into a modern paved road could ultimately help connect the North Shingle Springs Road exit and the Cameron Park Drive exit on Highway 50. It is difficult, without an intensive study, to predict the social and economic impacts of using Wild Chapparal Road to connect the two exits and create a Highway 50 frontage road. Some have speculated that this connection could reduce traffic at the exits (and possibly on the highway). The frontage road could also be an attractive location for new businesses, particularly retail. Others have argued that development along the new frontage road would cause increased traffic at the two exits, eliminating any gains from building the road in the first place. The county's Department of Transportation is currently studying the issue.

Energy and Minerals (Yuba Goldfields Issues)

The single FFO proposed action likely to generate the most local economic impact – the sales and extraction of aggregate mineral material in the Yuba Goldfields – is proposed under all of the alternatives. The development of this important economic resource would involve transfer of federally owned lands in the Yuba Goldfields from the USACE to the BLM. Additional lands may also be transferred to the FFO through a land exchange. After consolidation of these lands into BLM ownership, the sale of sand and gravel in the Yuba Goldfields would continue, creating additional opportunities for development. Production totals from these lands would be added to that already being produced from private lands in the Yuba Goldfields. The scale of production from public

lands could be around 20 million tons per decade. The resource is such that, at almost any scale, production would continue for many decades.

Depending on the scale of production, employment levels could be in the hundreds. Wages would be typical of those in the construction and mining sector, averaging \$30.00 an hour or more. The employment generated would be substantial locally but would be a relatively small addition to Yuba County's 2004 employment total of about 23,000. This county is an area of historically low wages and high unemployment. The economic activity associated with sale of mineral materials from public lands in the Yuba Goldfields would provide an important economic opportunity.

Additional economic benefits would occur as reclamation of the Yuba Goldfields progresses with the extraction of sand and gravel. Recreational opportunities could increase and, with that, an increase in visitor expenditures in the local economy. Reclamation of the Yuba Goldfields through aggregate mining is regarded as one of the first steps towards the development of a "Yuba River greenbelt" for wildlife habitat and recreational opportunities, spanning from Marysville to the town of Washington on the South Yuba River.

Wildland Fire Management and Ecology

The planning area is characterized by extremely volatile vegetation types and an unusually long fire season. Wildfire concern negatively affects both the value of neighboring properties and also the quality of life for residents in the planning area. All of the alternatives would implement the FFO's FMP (which would be updated regularly) and would aim to reduce heavy fuel loading by mechanical treatments and prescribed burning. However, the alternatives would differ in the types of properties and resources that fire reduction activities would focus on. Alternative A would not focus on any particular resource. Alternative B prioritizes fuel reduction projects that would benefit significant biological resources and sensitive cultural resources. Alternative C prioritizes fuel reduction projects in high density recreation areas and communities at risk; and Alternative D prioritizes fuel reduction projects to benefit both communities at risk and significant natural and cultural resources. It is likely that Alternative C would have more direct social and economic benefit in the long-term as it would do the most to protect property and communities at risk. Alternative D would achieve the same effect to a lesser degree.

Forestry, Grazing, and Energy and Minerals: "The Commodity Programs"

Of the four alternatives, Alternative C would do the most to increase opportunities for lumbering, mining, and grazing on FFO-managed lands. Production levels would likely increase under this alternative. More timber would be harvested, more high potential oil and gas lands would be leased, more solid mineral materials would be sold or extracted under a free use permit, and more livestock would be allowed to graze. Despite the proposed increase, the economic impacts would be very small. All of these resource products currently represent a very small part of the regional total. That relatively small share of regional economic activity represented by these commodities would decline over

time as the regional economy continued to be driven by tourism and other industries that are not tied to the primary extractive industries. The impacts of Alternatives B and D, which reduce production of resource products, would be minor, if not negligible. Most of the loggers, miners, and ranchers who use FFO-managed lands are not part of a historical family tradition, it is not a skill that was taught to them by their parents or their parent's parents. The social impacts to these people's way of life would be minor.

4.20.3 Cumulative Impacts

The growth of the planning area's population and economy is a major issue. The production of resource commodities from FFO-managed land would not be economically important because the most significant economic drivers in this part of California are not the extraction, production, and use of natural resources. However, the same growth trend will underscore the importance of the open space and recreation values provided by public lands in the planning area and in adjacent regions. The same pressures affecting public lands managed by the FFO would affect other governmental, private, and nongovernmental providers of open space and recreation opportunities in the area. In most parts of the planning area, no single provider is capable of addressing anticipated demand. Cooperation and partnership among multiple entities would be required to meet the demand. Although all of the FFO's alternatives (except for Alternative A) would enhance management and respond to public interests, the degree of success in addressing the demand would ultimately depend on the ability of others to assist in meeting the demand and the ability of the FFO to continue forging partnerships with other land managers that provide open space, environmental protection, and recreational opportunities on a regional level. So far, the FFO has been a leader in this regard. Regionally significant partnerships include the Pine Hill Preserve and the Cosumnes River Preserve. No cumulative effects are anticipated.

4.20.4 Environmental Justice

The requirement to examine the issue of environmental justice during the environmental analysis process was established by Executive Order 12898 (February 11, 1994). This order requires each federal agency to identify "disproportionately high and adverse human health or environment effects of its programs, policies, and activities on minority populations and low-income populations."

In general, the planning area has smaller percentages of minority and low-income populations than California as a whole. This is particularly the case for the central Sierra Nevada foothills where most of the FFO-managed parcels are located. In the foothills, almost 84 percent of the population described themselves as white in the 2000 census. The portion of the population that describes itself as Hispanic is well below California's overall percentage. This is especially true in the foothills counties. The percentage of the population below the poverty level in most of the counties in the planning area is either near or well below the state average.

As the discussion above indicates, the general impact of the FFO's proposed actions on the local and regional economy would be very limited. Specific individuals and niche

groups may be affected, but no minority or low-income populations appear to be disproportionately at risk of being adversely affected by the FFO's proposed actions. When the subject was brought up at the socioeconomic workshop conducted in 2005 and during interviews with local individuals, the consensus opinion supported this conclusion.

5.0 Introduction

The planning process is an ideal opportunity to encourage the participation of interested parties held by the public and other organizations into the public and management. A FFO is a comprehensive document that provides information on the proposed project, the planning process, and the environmental impacts from the actions identified in the management and monitoring activities in the EIS.

The Council on Environmental Quality Regulations (40 CFR 1500.7) and 60 CFR 1500.102 require an early and meaningful process of consultation, planning, and public involvement. To date, the Sierra RMP planning and monitoring process has included the following:

- Public scoping activities, public input on issues and the scope of the analysis, and to develop the proposed alternatives. This was initiated with the publication of the FFO in the Federal Register.
- Public input and comments on the Draft RMP/EIS, which included an analysis of potential environmental impacts and identification of preferred alternatives for the Proposed RMP (Feb 2003).

5.1 Outreach

A FOIA request for the FFO was published in the Federal Register on November 20, 2004. The FOIA request was scheduled to be held in several public scoping meetings between January 11 and March 21, 2005, and invited public participation.

These activities were also followed through the BLM web site (<http://www.blm.gov>), local news media and newspapers, and direct mailings to federally recognized tribes, several state agencies, and county governments. The FOIA was also distributed to the public through the Sierra RMP, a schedule of governing meetings, the planning timeline, and an opportunity for people to email comments about the RMP.

Public meetings were held in Oakes, Glen Valley, Mammoth, Jackson, and Inyo, Nevada, and Meadows. The FOIA included a public meeting in Reno, Nevada, and a public presentation and workshop sponsored by the local supervisor. Presentations on the plan were held at the Nevada State Board of Supervisors. Meetings and hearings were also held with county planning commissions, county supervisors, state agencies, and local agencies and tribes (see Table 5-1). Federally recognized and unorganized tribes, and various other Native American groups were invited to participate in the development of the

Chapter 5

Consultation and Coordination

5.0 Introduction

The planning process is an ideal opportunity to incorporate the vast wealth of knowledge held by the public and other organizations into BLM public land management. A RMP is a comprehensive discussion that includes all relevant activities and resources within the planning area. Public involvement helps to identify issues, alternatives are developed, and impacts to the human environment from the actions contained in the alternatives are thoroughly analyzed in the EIS.

The Council on Environment Quality regulations (40 CFR 1501.7) and BLM's planning regulations (43 CFR 1610.4-1) require an early and open scoping process of determining planning issues through public involvement. To date, the Sierra RMP public involvement process has included the following:

- Public scoping to obtain public input on issues and the scope of the analysis, and to develop the proposed alternatives. This was initiated with the publication of the NOI in the Federal Register.
- Public review and comment on the Draft RMP/EIS, which includes an analysis of potential environmental impacts and identification of a preferred alternative for the Proposed RMP/Final EIS.

5.1 Outreach

A NOI to prepare the RMP was published in the *Federal Register* on November 29, 2004. The NOI announced the schedule of seven public scoping meetings between January 12 and March 23, 2005, and invited public participation.

These announcements were released through the BLM web site (www.ca.blm.gov/folsom), local news media and newspapers, and direct mailings to federally recognized tribes, several state agencies, and county governments. The BLM web site also provides background information on the Sierra RMP, a schedule of upcoming meetings, the planning timeline, and an opportunity for people to e-mail comments directly to the BLM.

Public meetings were held in Colfax, Grass Valley, Placerville, Jackson, San Andreas, Sonora, and Mariposa. The BLM attended a public meeting in Penn Valley and gave a presentation at an open house sponsored by the local supervisor. Presentations on the plan were made to county Board of Supervisor(s). Meetings and briefings were also held with county planning departments, county supervisors, state agencies, federal agencies, and tribes (see Table 5-1). Federally recognized tribes, unrecognized tribes, and various other Native American contacts were invited to participate in the development of the

Sierra RMP/EIS. Meetings were held with the Tuolumne Band of Me-Wuk Indians, Calaveras County Mountain Miwok Indian Council, El Dorado Miwok Tribe, and the California Indian Basketweavers Association. The local government, agencies, and tribes listed in Table 5-2 have been contacted by mail regarding the opportunity to participate as a cooperating agency, but they have not indicated a desire to do so.

Table 5-1 Meetings and Briefings With Agencies

Date	Entity
State of California	
November 16, 2004	Department of Fish and Game, Region IV
November 19, 2004	Department of Forestry and Fire Protection, Amador/El Dorado
January 13, 2005	Department of Fish and Game, Region II
Counties	
October 21, 2004	Tuolumne County Planning Department
November 10, 2004	El Dorado County Planning Department
November 29, 2004	Amador County Planning Department
December 8, 2004	Calaveras County Planning Department
March 15, 2005	Mariposa County Board of Supervisors
April 4, 2004	Mariposa County Planning Department
April 7, 2005	Nevada County Planning Department
April 14, 2005	Placer County Planning Department
May 2, 2005	Sacramento County Supervisor Nottoli

Table 5-2 Agencies, Government Officials, and Organizations Contacted

Federal	
Army Corp of Engineers	Environmental Protection Agency
Bureau of Indian Affairs	U.S. Fish and Wildlife Service
Bureau of Reclamation	National Park Service
Forest Service (Plumas, Tahoe, Eldorado, Stanislaus, and Sierra national forests)	National Oceanic and Atmospheric Administration-Fisheries
State of California	
Department of Fish and Game	State Lands Commission
Department of Forestry and Fire Protection	State Historic Preservation Officer
Department of Transportation	Department of Parks and Recreation
Department of Conservation, Division of Oil, Gas and Geothermal Resources	

Table 5-2 Agencies, Government Officials, and Organizations Contacted

County Boards of Supervisors	
Colusa County	Tuolumne County
Yuba County	Mariposa County
Nevada County	Merced County
Placer County	Stanislaus County
Sacramento County	Madera County
El Dorado County	Alpine County
Amador County	Calaveras County
Federally Recognized Tribes	
Tuolumne Band of Me-Wuk Indians	Shingle Springs Band of Miwok Indians
Jackson Band of Mi-Wuk Indians/Jackson Rancheria	Washoe Tribe of California and Nevada
Buena Vista Rancheria of Me-Wuk Indians	United Auburn Indian Community
Ione Band of Miwok Indians	California Valley Miwok Tribe
Chicken Ranch Rancheria of Me-Wuk Indians	Enterprise Rancheria of Maidu Indians
Stakeholders	
Interested individuals	Congressman Herger
Special interest groups	Congressman Doolittle
Adjacent private landowners	Congressman Lundgren
Grazing leasees	Congressman Pombo
Interested businesses	Congressman Radanovich
Print and broadcast media	Senator Boxer
Friends of the River	Senator Feinstein
The Nature Conservancy	Central California Resource Advisory Committee
Ducks Unlimited	Wilderness Society
Audubon Society	Trust for Public Lands
American River Conservancy	Central Sierra Environmental Resource Center

Upon distribution of the Draft RMP/EIS, at least three public meetings will be held and written comments will be accepted. Details of the public meetings for comment will be made available at least 15 days in advance of these meetings. Following the 90-day public review of the Draft RMP/EIS, comments will be reviewed and incorporated as appropriate. A proposed RMP/Final EIS then will be prepared and released for a 30-day protest period. The Proposed RMP will also be sent to the Governor of California for a

60-day review for consistency with State of California and local plans, policies, and programs. The Approved RMP and Record of Decision will be prepared after any protests or inconsistencies have been resolved.

Copies of the Draft RMP/EIS will be furnished to numerous public libraries throughout the planning area for public review and reference. Copies will also be distributed on CDs to those expressing an interest in the planning process. The BLM web site will also post the document for viewing or downloading.

5.2 Scoping Workshop Summary

Table 5-3 identifies the dates, locations, and attendance of public scoping meetings held prior to development of the Draft RMP/EIS.

Table 5-3 Public Scoping Meeting Summary

Date	Location	Attendance
January 12, 2005	Jackson, California	23
January 19, 2005	San Andreas, California	46
January 26, 2005	Sonora, California	29
February 16, 2005	Placerville, California	14
February 24, 2005	Mariposa, California	16
March 9, 2005	Grass Valley, California	25
March 23, 2005	Colfax, California	37

BLM received comments during scoping through letters, e-mail, and public meetings. Table 5-4 summarizes the number of comments received by assessment area.

Table 5-4 Summary of Comments

Assessment Area Addressed	Number of Comments Received
Yuba	21
American	46
Cosumnes	18
Mokelumne	49
Stanislaus	32
Tuolumne	44
Merced	23
Central Valley	18
Total	251

The public scoping meetings and letters and e-mails received identified five major issues: (1) land ownership adjustment and public access; (2) fire and fuels; (3) rivers; (4) recreation management; and (5) special area management. Minor issues discussed at the scoping meetings concerned the specific and private interests of the participants of the scoping process as adjacent landowners; these issues did not rise to the level of significance requiring a land use decision in the RMP.

5.3 Socioeconomic Workshop

Workshops were held to discuss social/economic issues and concerns in the area managed by the FFO and to increase public involvement in the development of the Sierra RMP/EIS. The focus of the workshops was to assist in characterizing existing conditions and trends in local communities and the wider region that may affect and be affected by the FFO's land use planning decisions.

The workshops also provided an opportunity for local government officials, community leaders, and other citizens to discuss regional economic conditions, trends, and strategies with BLM managers and staff. The workshops assisted in identifying the ways public land resources are integrated into the local economy and way of life, and in identifying opportunities for collaborative, stewardship-based management proposals. The workshops also devoted some time to introducing participants to economic concepts, the sources of economic data, the data itself, and the processes of economic analysis. The workshops had the following numbers of attendants:

- Jackson, California, March 1, 2006, afternoon session – 5 people
- Jackson, California, March 1, 2006, evening session – 25 people

Besides local residents, organizations and agencies represented include the USBR, CDF, Amador County Department of Planning, Pacific Gas & Electric, California Off-Road Vehicle Association, and Central Sierra Environmental Resource Center.

5.4 Other Outreach and Consultation

In response to the rapid increase of the WUI in recent years, the FFO has been using a community-based planning process to formulate site-specific management plans. This planning technique is time consuming, but it has proven very effective. Experience has shown that community-based planning builds an atmosphere of trust, mutual respect, and cooperation between the BLM and its neighbors. Implementation of land use plans is more successful when the local community shares ownership of the plan.

The FFO works with several federal, state, and local agencies to assist in the management of public land resources in the planning area. These agencies include:

- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

- U.S. Army Corps. of Engineers
- California State Historic Preservation Office
- California Department of Forestry and Fire Protection
- California Department of Fish and Game
- Central Valley Regional Water Quality Control Board.

List of Preparers

Name	Position	Planning Role
BLM staff (all staff at Folsom Field Office unless otherwise noted)		
Bill Haigh	Field Manager	Field Manager, RMP coordinator
Deane Swickard	Field Manager (retired)	Field Manager, RMP coordinator
Rick Cooper	Cosumnes River Preserve Manager (current Hollister Field Manager)	RMP coordinator lead (January 2004 to April 2006)
Eliseo Ilano	Planner/NEPA coordinator (California State Office)	RMP coordinator
James Barnes	Archaeologist	RMP coordinator, SRAA lead, Native American consultation, cultural resources
Ed Bollinger	Forester	Forestry, community based planning
Holden Brink	Wildlife Biologist	CVAA lead, Cosumnes River Preserve
Kim Bunn	Wildlife Biologist	CRAA lead, wildlife, water resources, air quality
Tim Carroll	Minerals Specialist	CVAA lead, minerals, RFD
Dave Christy	Public Affairs Officer	Public outreach
Peggy Cranston	Wildlife Biologist	Fish and wildlife, rangeland management, Spivey Pond management area
Dean Decker	Archaeologist and Realty Specialist	Rights of way, cultural and paleontological resources, transportation and access
Jim Eicher	Associate Field Manager	Recreation, wild and scenic rivers, community based planning
Fran Evanisko	GIS Specialist (California State Office)	GIS data entry

Name	Position	Planning Role
Al Franklin	Botanist	TRAA lead, ACECs, botany, invasive weeds, soil resources
Graciela Hinshaw	Pine Hill Preserve Manager	Pine Hill Preserve
Ken Hood	Fire Management Officer	Fire and fuels
Jeff Horn	Recreation Planner	ARAA lead, recreation, visual resources management
Krisann Kosel	Fuels Specialist	MoRAA lead, fire and fuels
Jodi Lawson	Realty Specialist	Lands and realty
Dan Lusby	Heavy Equipment Operator	Transportation and access
Jeff Prude	Petroleum Engineer (Bakersfield Field Office)	RFD, oil and gas leasing
John Scull	Planner and Public Affairs Specialist	YRAA lead, public outreach, community based planning
Sarah Tomich	IT and GIS Specialist	GIS data entry and map making
Gregg Wilkerson	Mineral specialist (Bakersfield Field Office)	RFD, oil and gas leasing
Barbara Williams	Volunteer Coordinator	Website development, public outreach
Ecology and Environment, Inc.		
Ron Karpowicz, P.E.	Project Manager	Document review
Colin Moy Bill Richards Howard Levine	Environmental Planners	Interdisciplinary Team Leaders, Document Review
Blythe Mackey Cameron Fisher	Biologist	Special Status Species, Vegetative Communities, Fish and Wildlife
Tareyn Gillilan	Environmental scientist	Air Quality
Howard Levine Angela Glenn	Recreation planner	Recreation, Special Designations, Transportation and Access
Tim Salt, Edge-Effect	Environmental Planner	BLM Policy Reviews
Steven Home	Archeologist	Cultural and Paleontological Resources
Steve Moore, Burro Canyon Enterprises, LLC	Socioeconomist	Social and Economic Analysis

Name	Position	Planning Role
Jerry Barker	Rangeland Specialist	Livestock Grazing and Wildland Fire Ecology
Tom Dildine	Visual Resource Specialist	Visual Inventory Analysis
Eileen Kollins	Geologist	Soil Resources
Deborah Linton	Graphic Designer	Graphic Design
Steve Patterson John Saunder Jeanie Polling	Technical Editor	Editing, Formatting

References

California Department of Water Resources Division of Flood Management

2006 Reservoir information webpage: <http://cdec.water.ca.gov/misc/resinfo.html>

PACFISH

1995 Decision Notice/Finding of No Significant Impact. Environmental Assessment for the interim strategies for managing anadromous fish-producing watersheds in eastern Oregon and Washington, Idaho, and portions of California. USDA Forest Service and USDI Bureau of Land Management.

Planert, M., and J. S. Williams

1995 U.S. Geological Survey. Groundwater Atlas of the United States; California, Nevada. HA 730-B. http://capp.water.usgs.gov/gwa/ch_b/index.html

United States Environmental Protection Agency

2002 Total Maximum Daily Loads, Section 303 (d), List Fact Sheet for California. Available through the EPA webpage: http://oaspub.epa.gov/waters/state_rept.control?p_state=CA#WATERSHED

Appendix A

Maps

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23. Reasonably Foreseeable Oil and Gas Development Potential Map 7

24. Eligible and Suitable Wild & Scenic Rivers Map 8

25. Public Lands to Retain Under Alternative A Map 9a

26. Public Lands to Retain Under Alternative B Map 9b

27. Public Lands to Retain Under Alternative C Map 9c

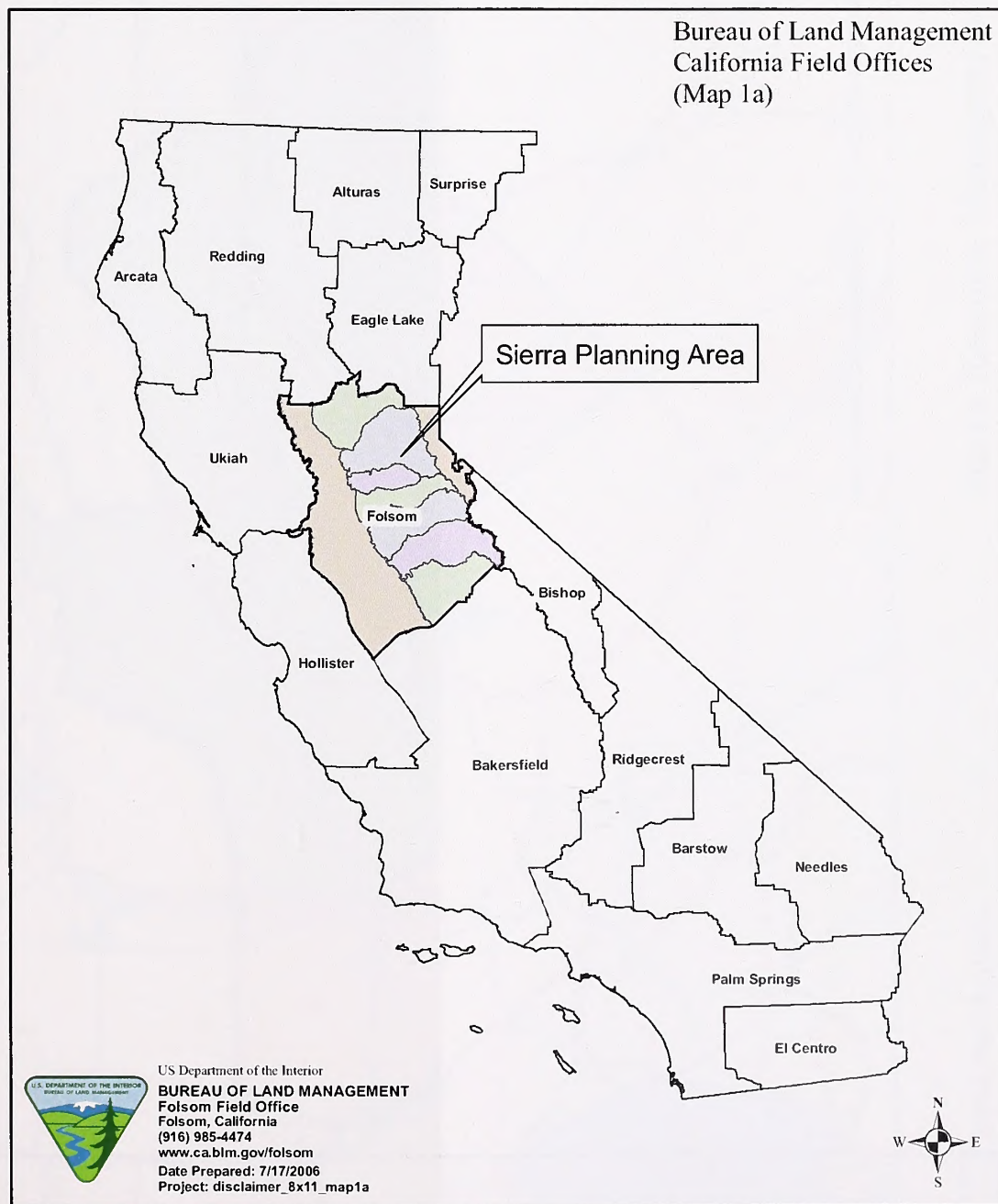
28. Public Lands to Retain Under Alternative D Map 9d

Map Disclaimer

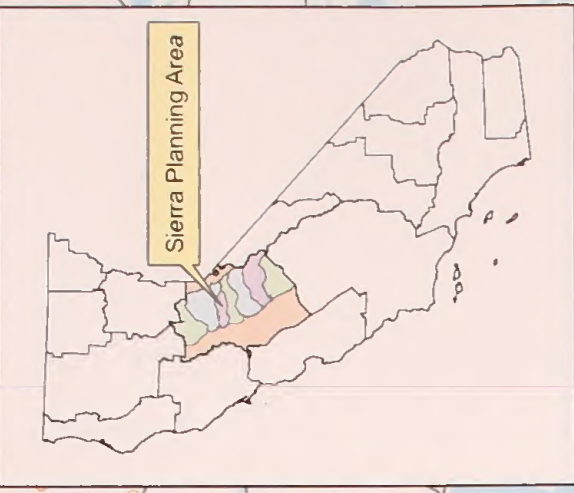
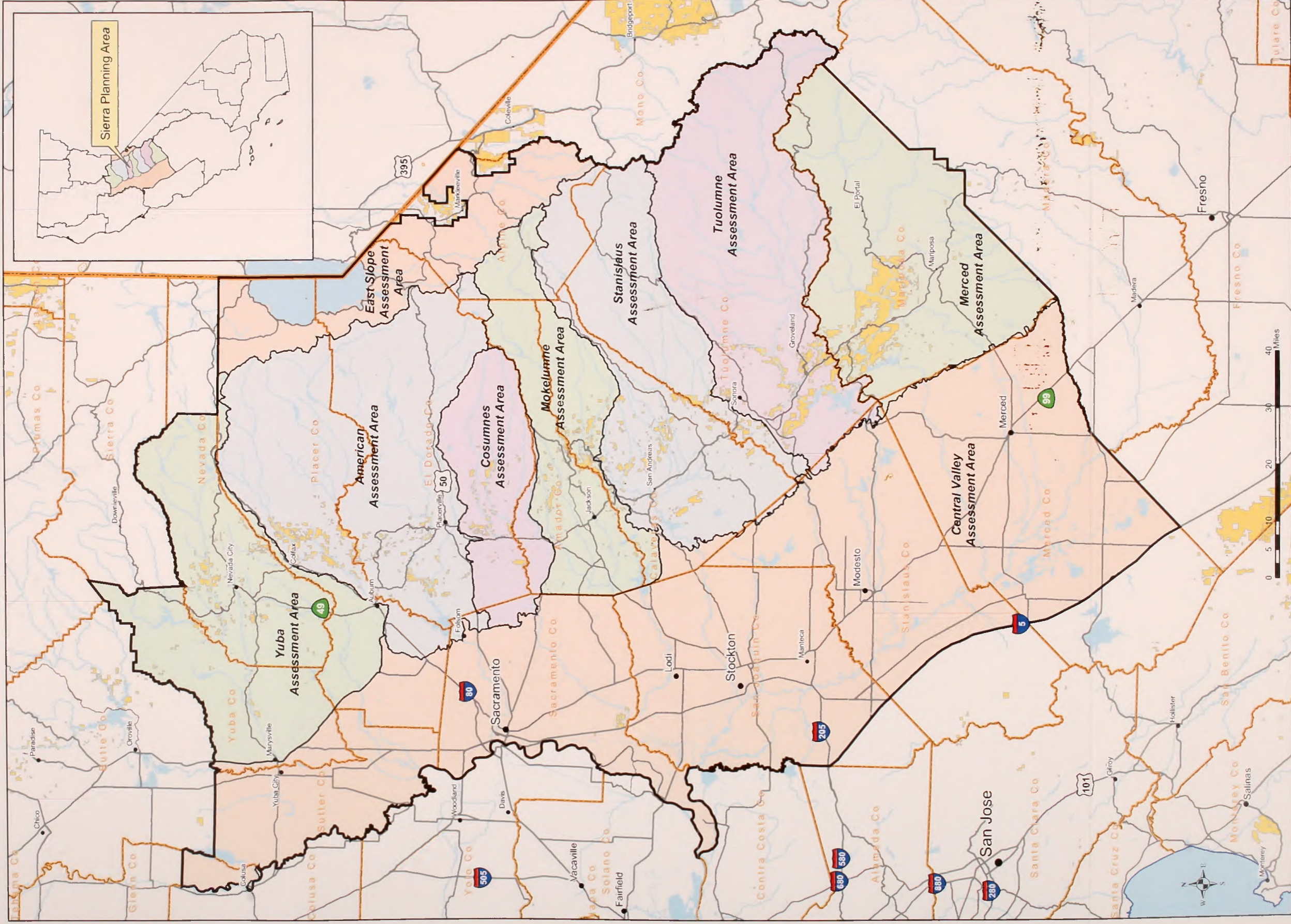
The following maps are to be used for the Draft Sierra RMP/EIS process concerning the Sierra Planning Area. These are informative maps specifically designed to illustrate the areas being discussed. These maps are not authorized for any uses outside of this specific planning process. Every reasonable effort has been made to ensure the accuracy of the maps and data provided; nevertheless, some information may not be accurate. The Bureau of Land Management assumes no responsibility arising from the use of this information.

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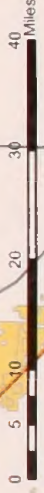
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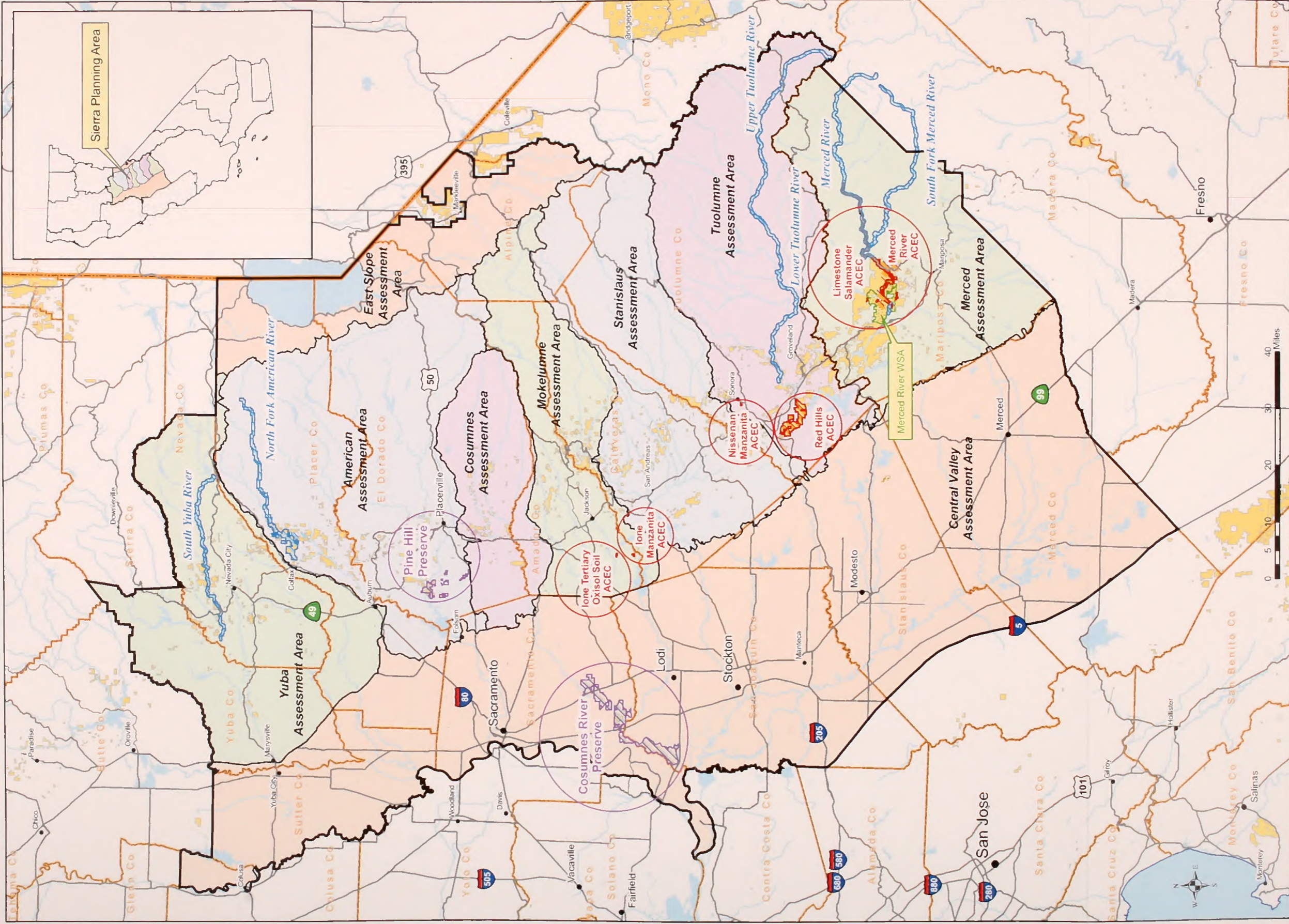
**Assessment Areas
(Map 1b)**

- Sierra Planning Area
- Bureau of Land Management
- American & Stanislaus Assessment Area
- Central Valley & East Slope Assessment Area
- Cosumnes & Tuolumne Assessment Area
- Merced, Mokelumne & Yuba Assessment Area



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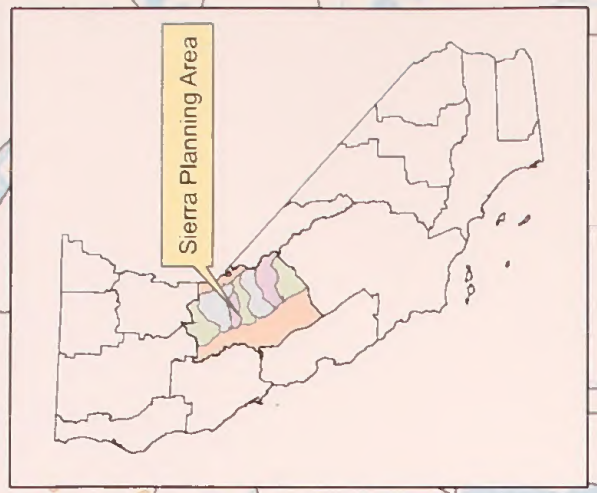
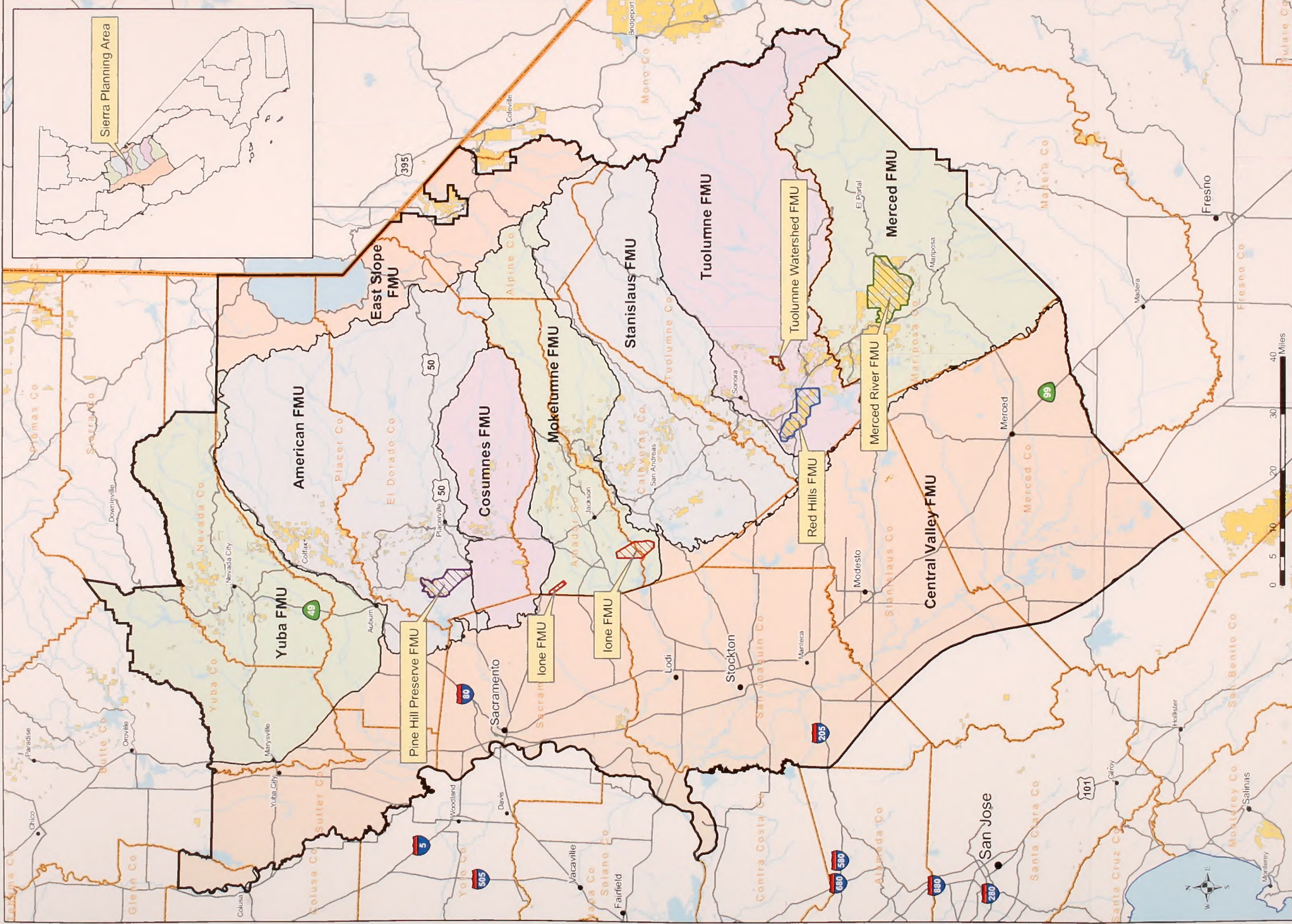


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**Existing Special Management Areas
 (Map 2)**

- Sierra Planning Area
- Bureau of Land Management
- Existing ACEC
- Existing Wild & Scenic River
- Wilderness Study Area
- Preserve





- Sierra Planning Area
- Bureau of Land Management
- Lone FMU
- Merced River FMU
- Pine Hill Preserve FMU
- Red Hills FMU
- Tuolumne Watershed FMU

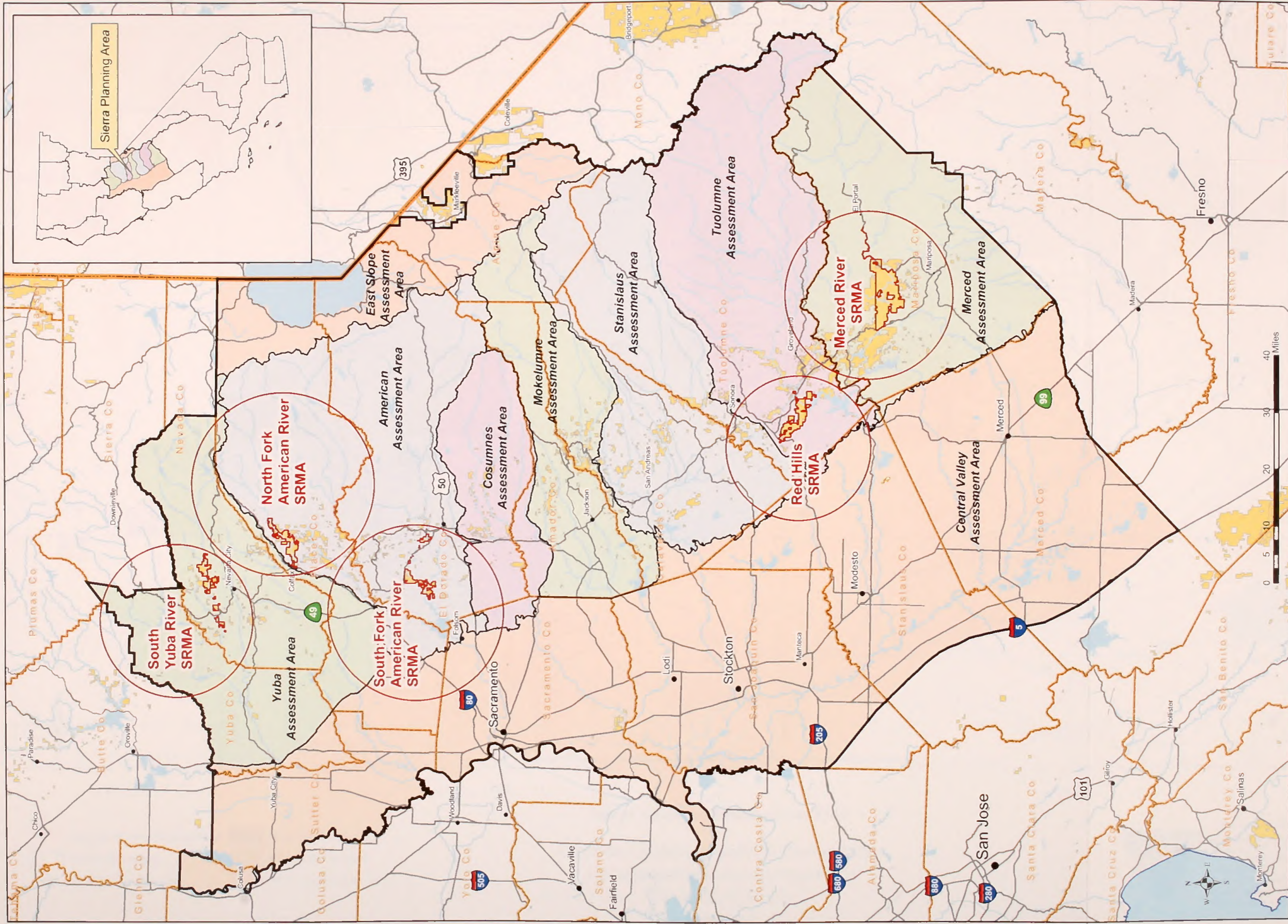
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**Fire Management Units
(Map 3)**






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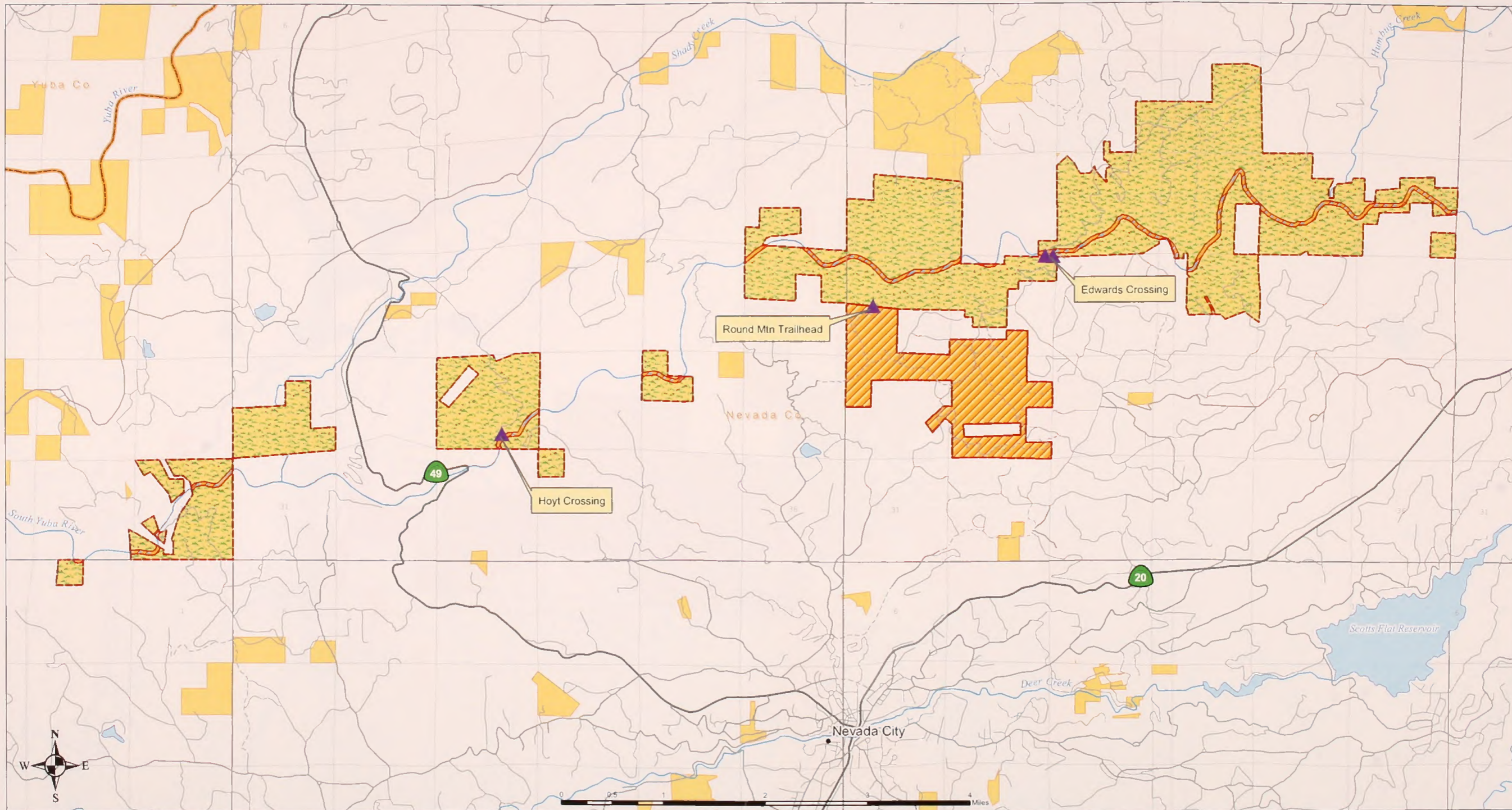
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Proposed SRMAs
Special Recreation Management Areas
(Map 4)


-  Sierra Planning Area
-  Bureau of Land Management
-  Proposed SRMA



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Sierra Resource Management Plan
Proposed SRMA with ROS Designations
Recreation Opportunity Spectrum
South Yuba River
(Map 4a)

- | | |
|---|---|
|  Bureau of Land Management |  ROS: High Use |
|  SRMA Boundary |  ROS: Remote Use |
|  SRMA High Use Site |  ROS: Transitional Use |



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R9E

R10E

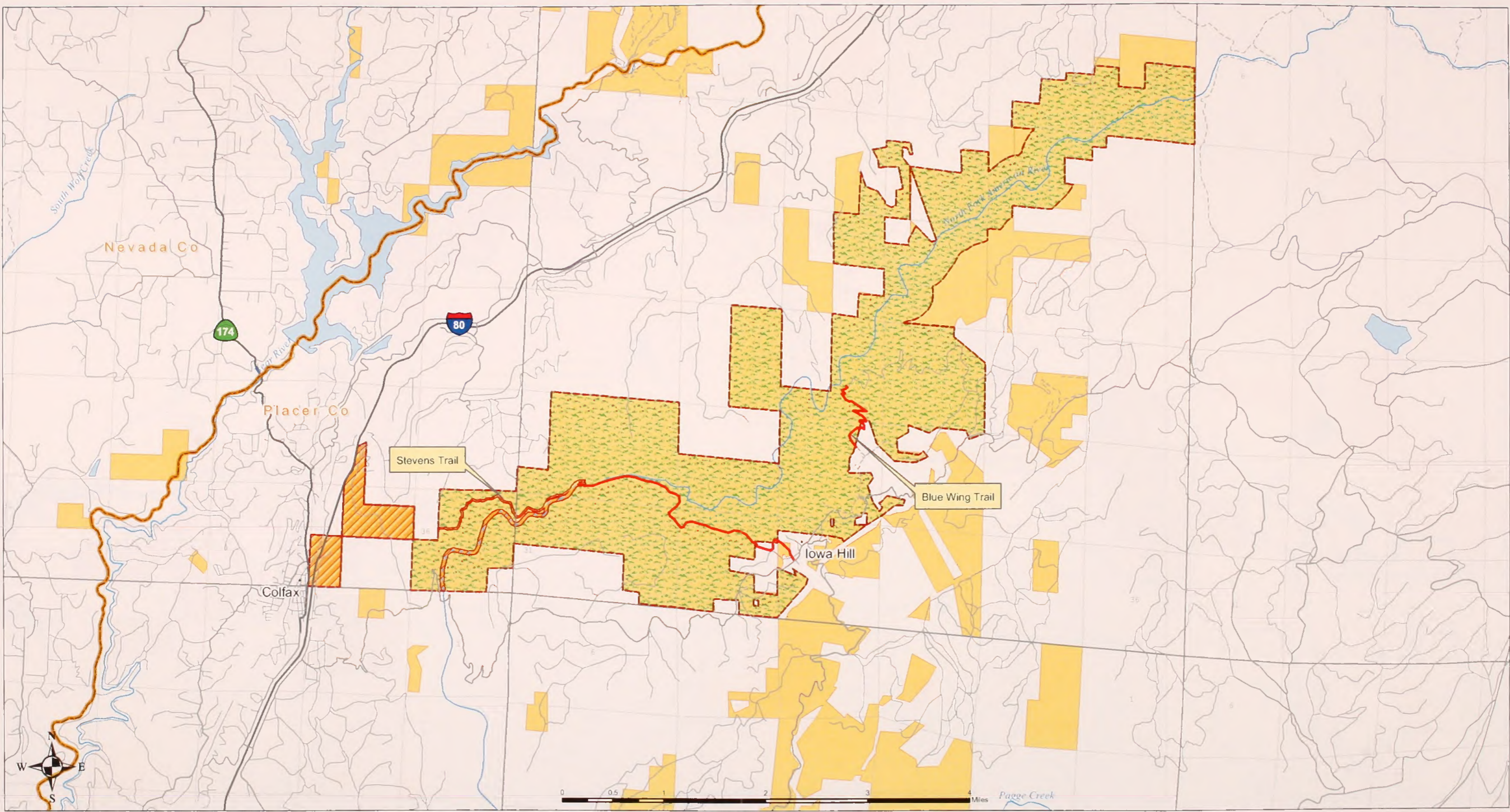
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T15N

T15N

T14N

T14N



R9E

R10E

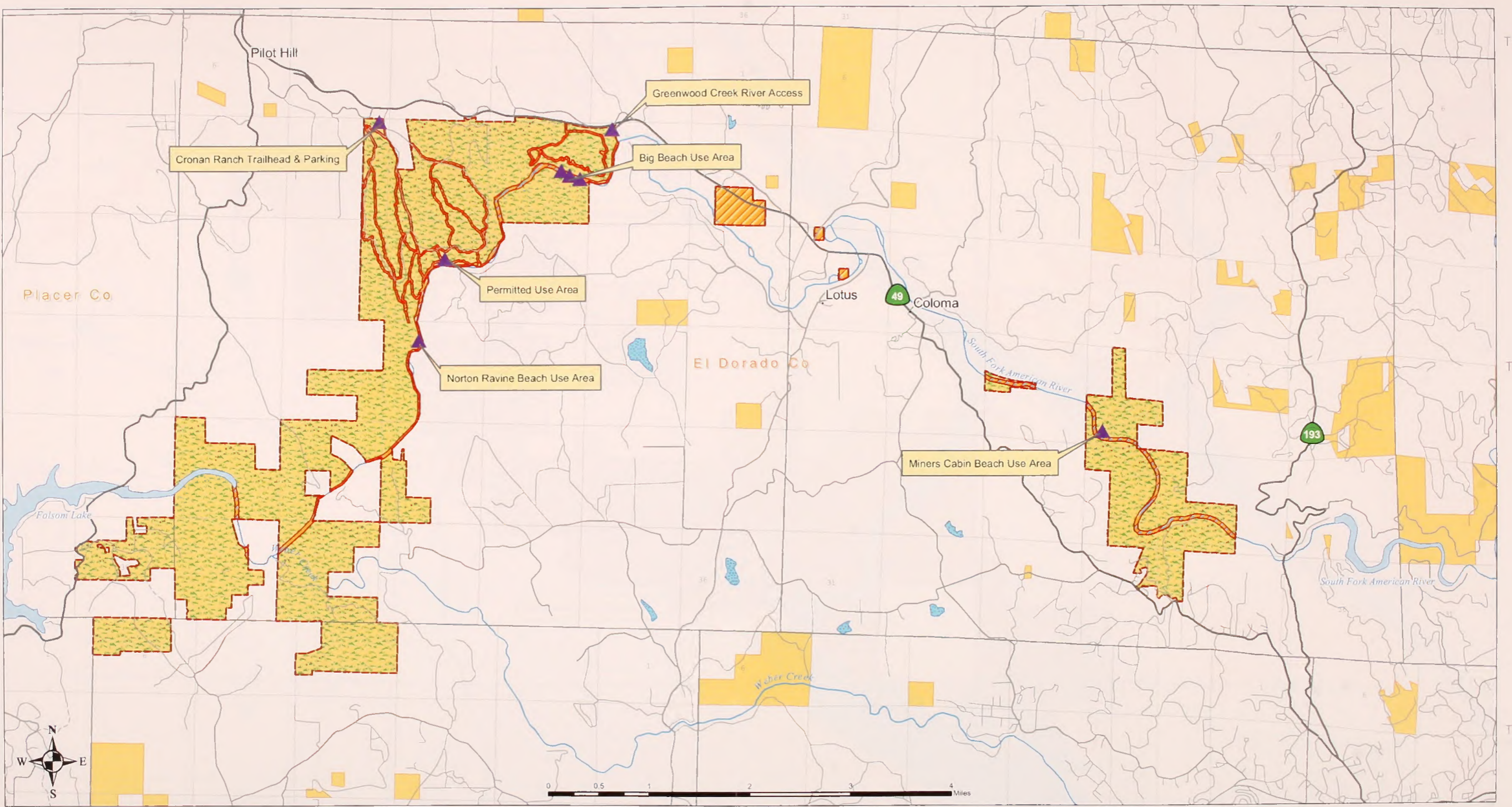
R11E

Sierra Resource Management Plan
Proposed SRMA with ROS Designations
Recreation Opportunity Spectrum
North Fork of the American River
 (Map 4b)

- Bureau of Land Management
- ROS: High Use
- SRMA Boundary
- ROS: Remote Use
- ROS: Transitional Use
- SRMA High Use Site



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Proposed SRMA with ROS Designations
 Recreation Opportunity Spectrum
 South Fork of the American River
 (Map 4c)

- Bureau of Land Management
- SRMA Boundary
- ROS: High Use
- ROS: Remote Use
- ROS: Transitional Use
- SRMA High Use Site



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R13E

R14E

R15E

T1N

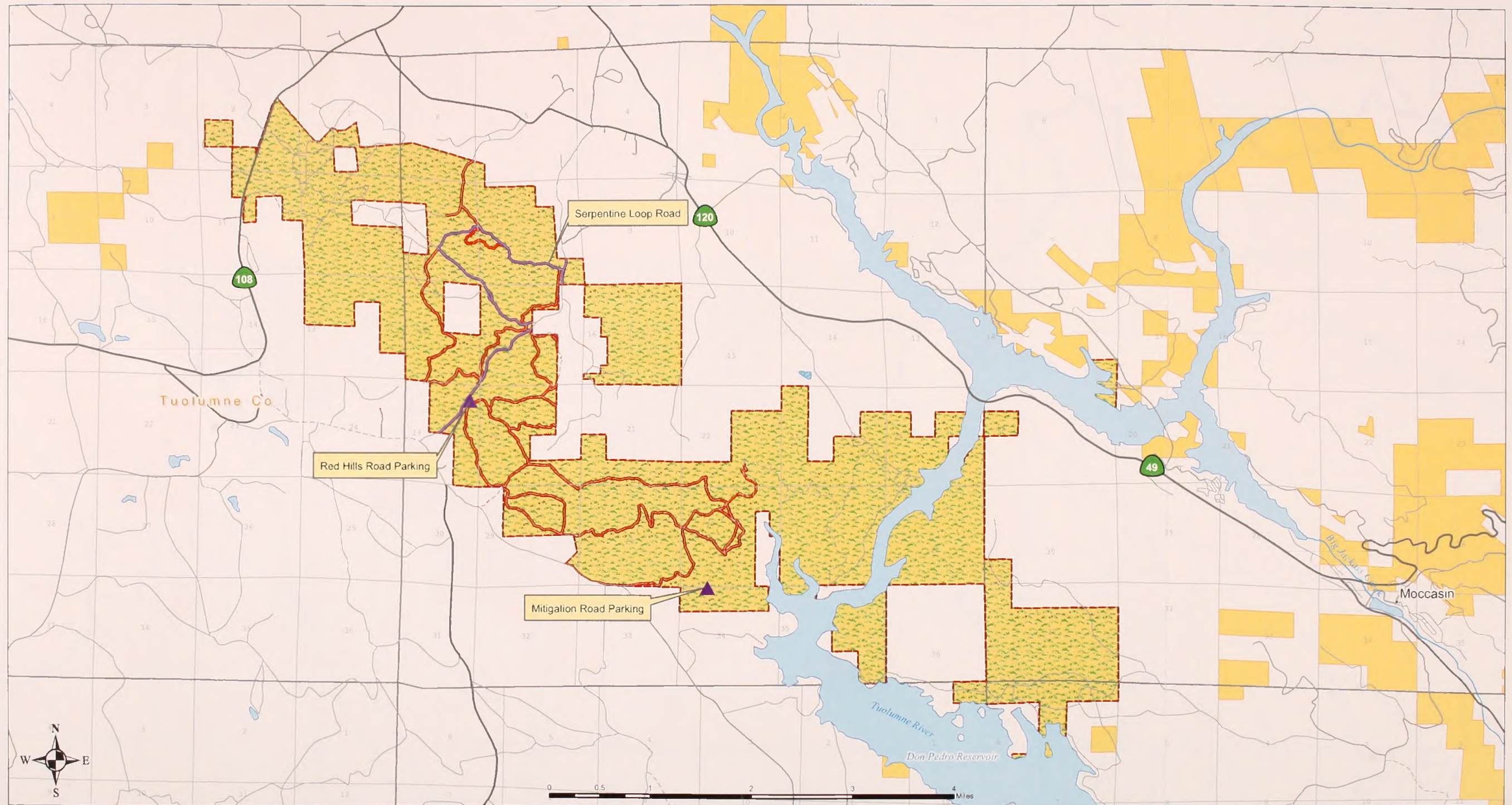
T1N

T1S

T1S

T2S

T2S



Tuolumne Co.

Serpentine Loop Road

Red Hills Road Parking

Mitigation Road Parking

Tuolumne River
Don Pedro Reservoir

Moccasin

0 0.5 1 2 3 4 Miles

R13E

R14E

R15E

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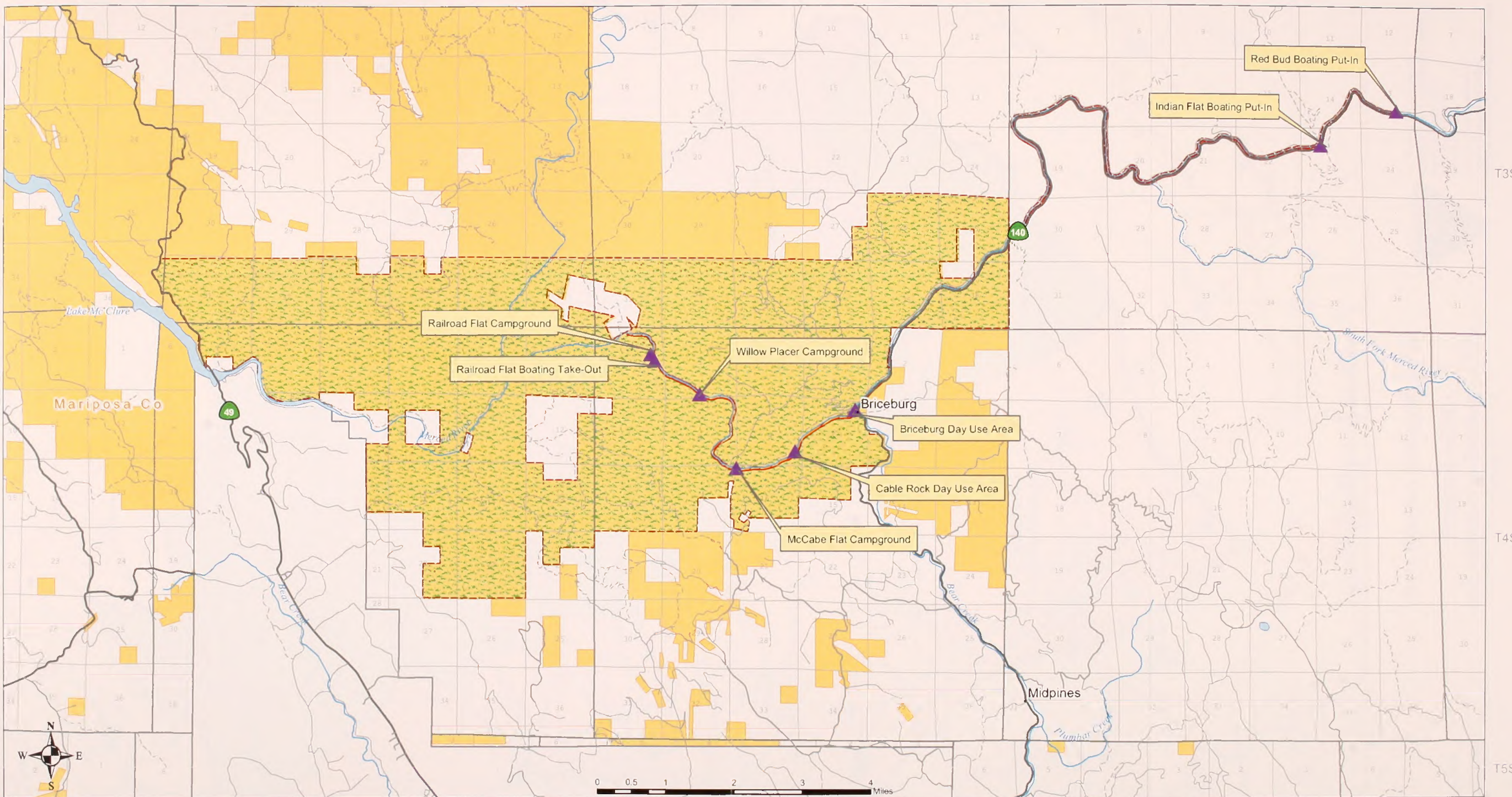
Proposed SRMA with ROS Designations Recreation Opportunity Spectrum

Red Hills (Map 4d)

- Bureau of Land Management
- SRMA Boundary
- SRMA High Use Site
- ROS: High Use
- ROS: Remote Use
- ROS: Transitional Use



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R16E

R17E

R19E

R20E

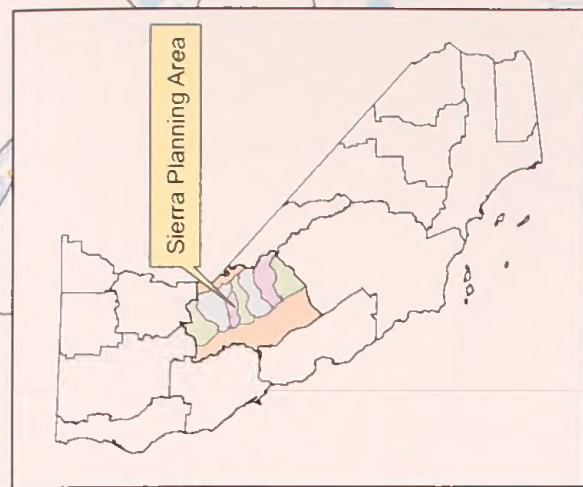
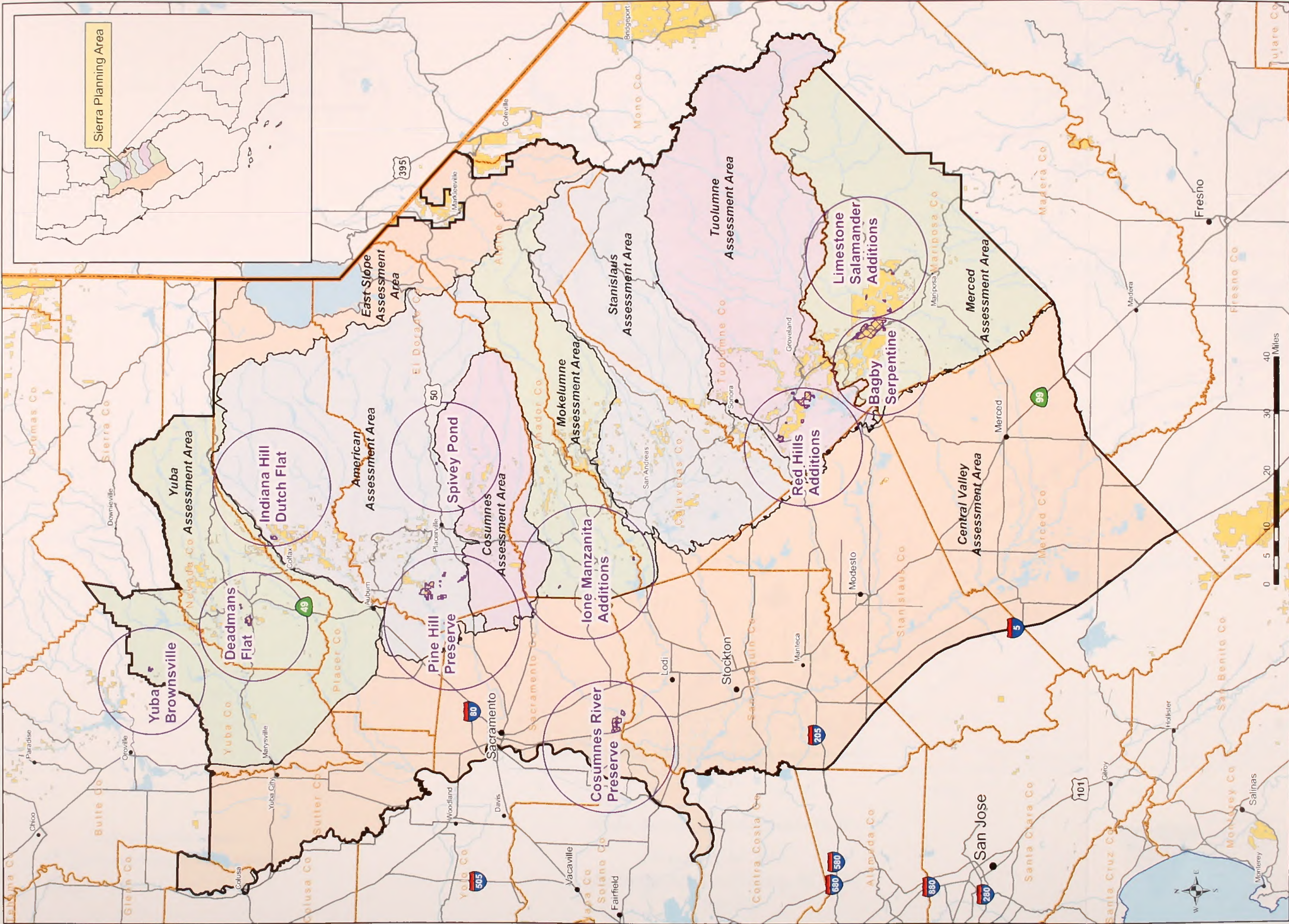
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**Proposed SRMA with ROS Designations
Recreation Opportunity Spectrum
Merced River
(Map 4e)**

- Bureau of Land Management
- SRMA Boundary
- SRMA High Use Site
- ROS: High Use
- ROS: Remote Use
- ROS: Transitional Use



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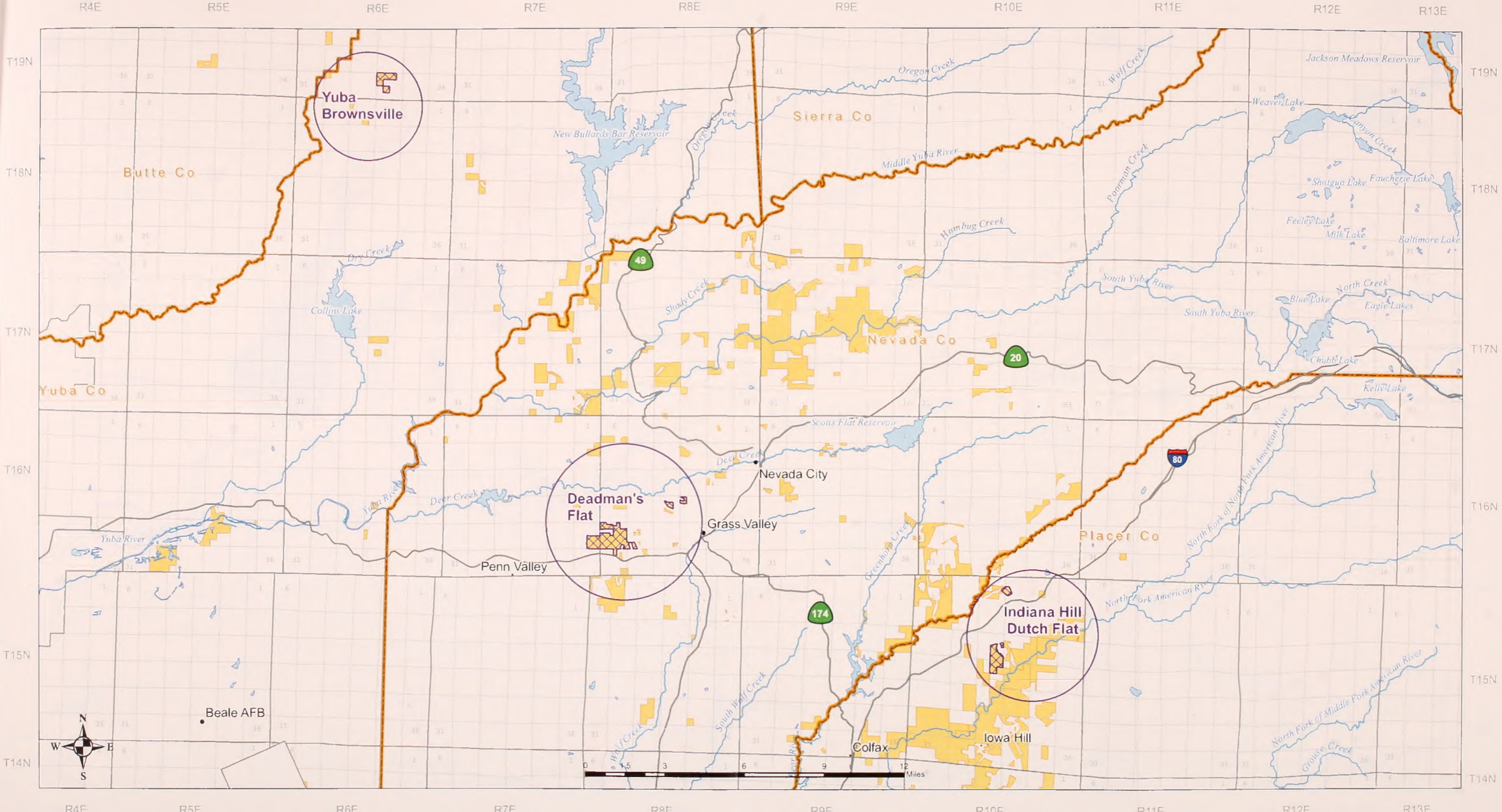


- Sierra Planning Area
- Bureau of Land Management
- Proposed ACEC or ACEC Addition

Sierra Resource Management Plan
Proposed ACECs
and Additions to Existing ACECs
 (Map 5)



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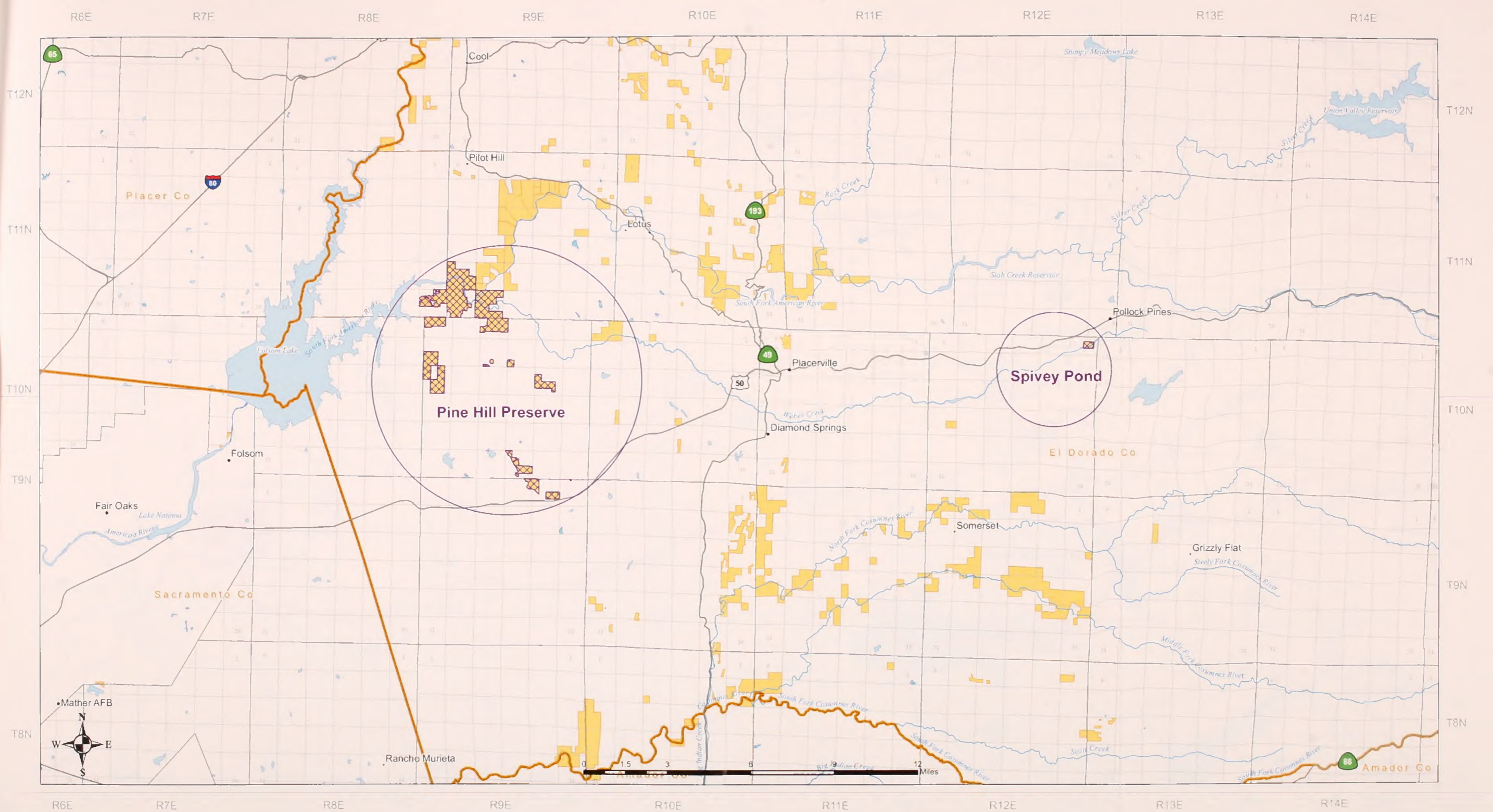


Sierra Resource Management Plan
Proposed ACECs
and Additions to Existing ACECs
 (Map 5a)

- Bureau of Land Management
- Proposed ACEC or ACEC Addition
- Existing ACEC



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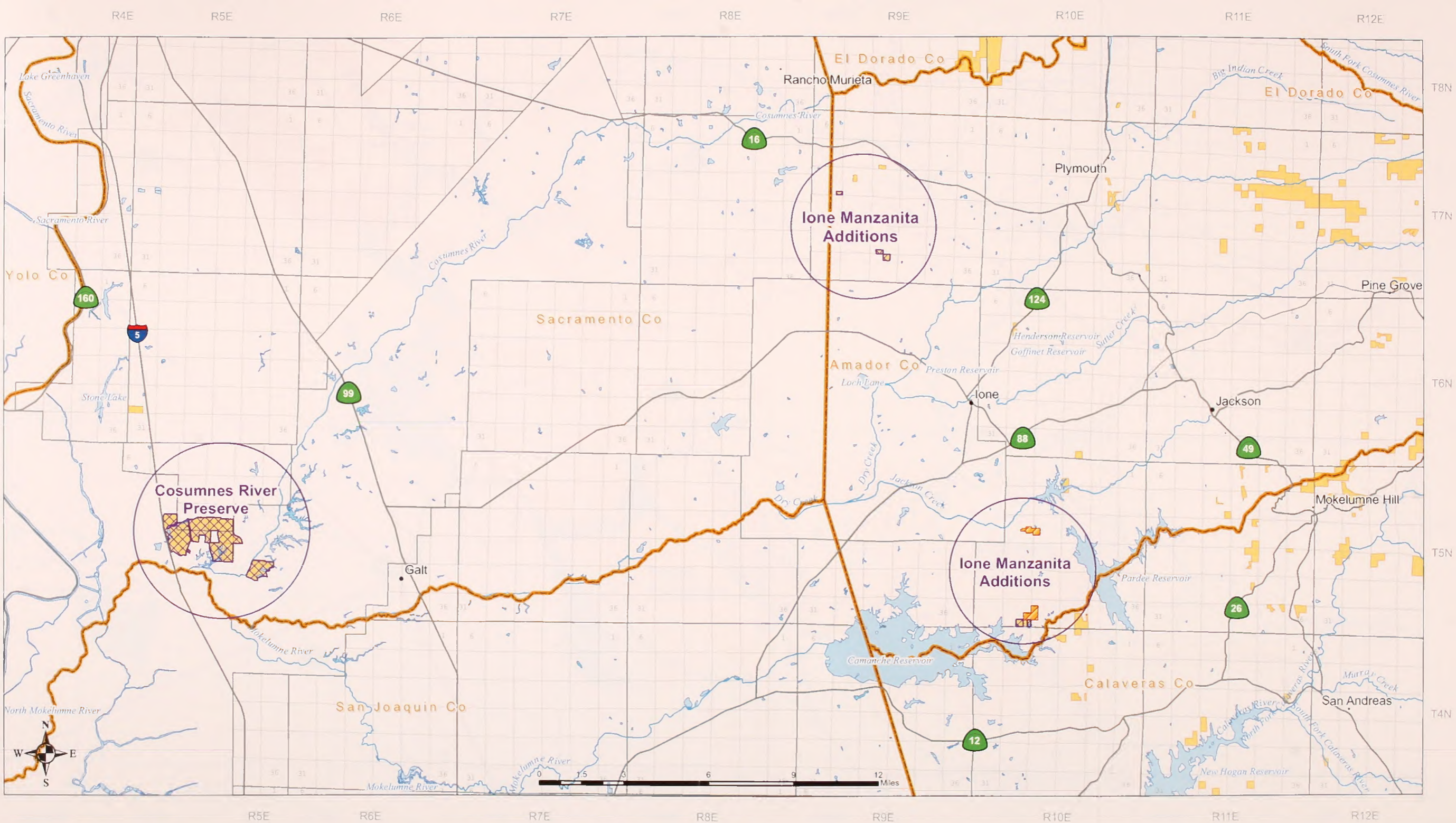


Sierra Resource Management Plan
Proposed ACECs
and Additions to Existing ACECs
 (Map 5b)

- Bureau of Land Management
- Proposed ACEC or Addition
- Existing ACEC






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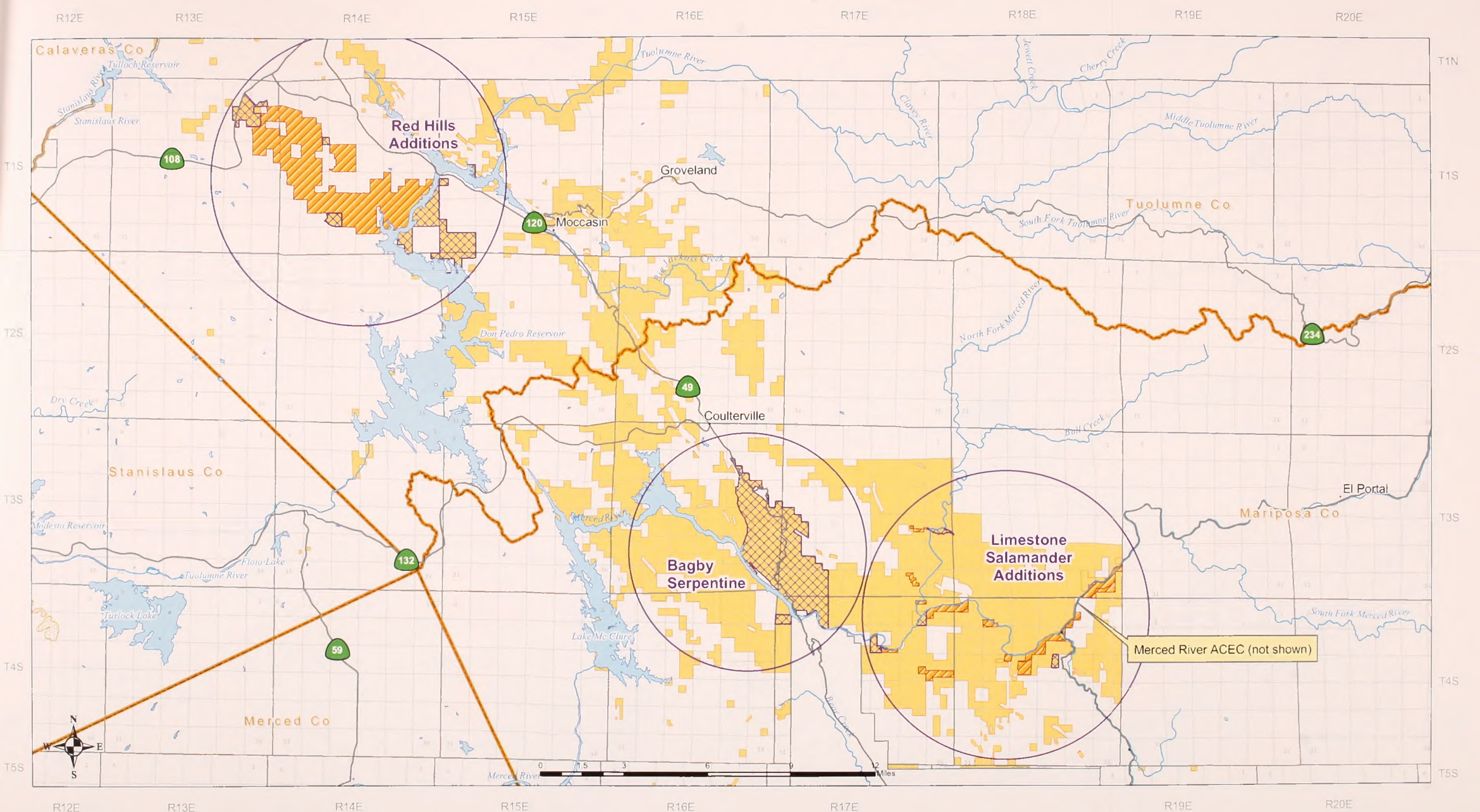
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**Proposed ACECs
and Additions to Existing ACECs
(Map 5c)**

-  Bureau of Land Management
-  Proposed ACEC or ACEC Addition
-  Existing ACEC



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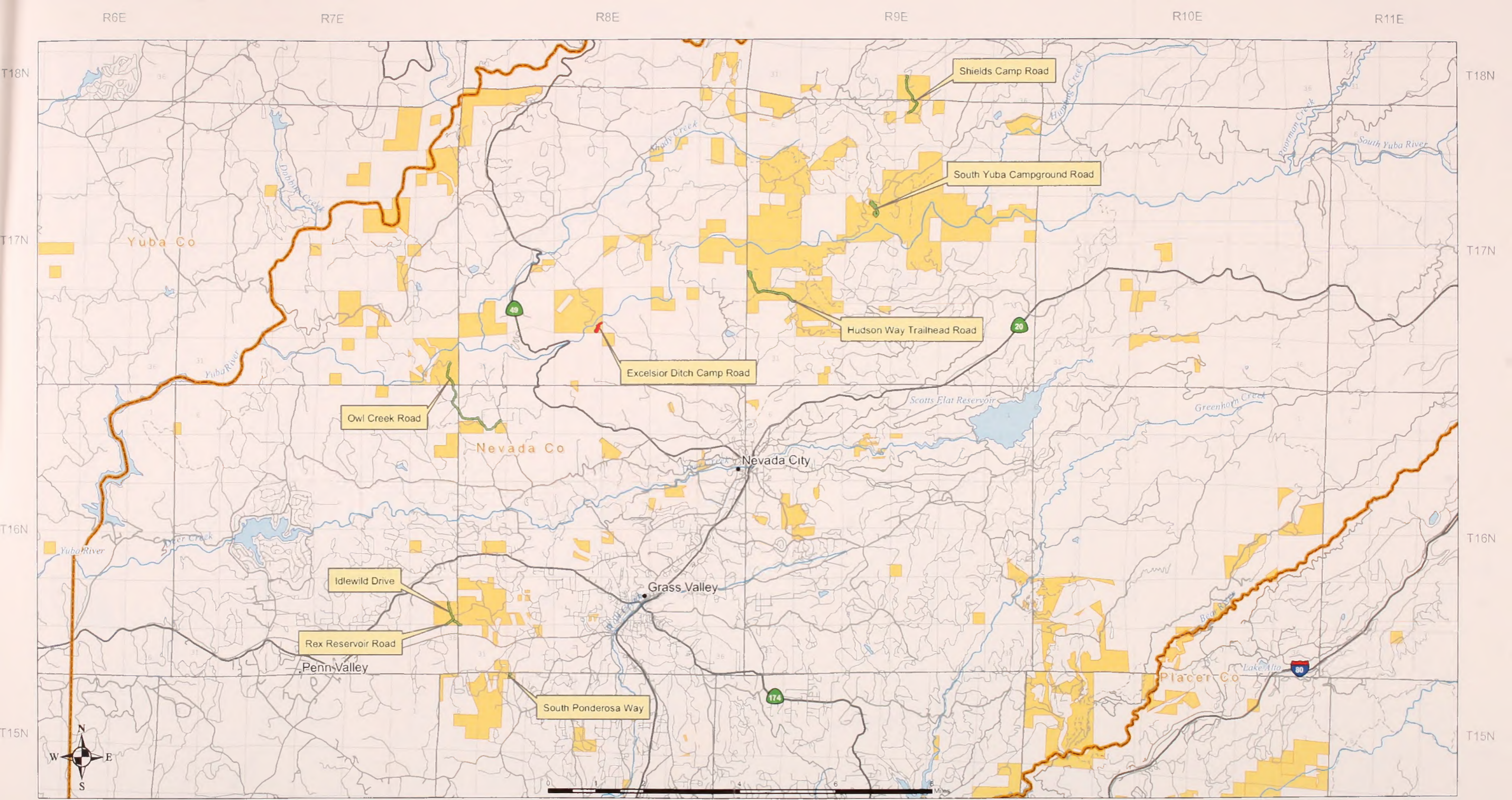
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- Proposed ACEC or ACEC Addition
- Existing ACEC

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**Proposed ACECs
and Additions to Existing ACECs
(Map 5d)**



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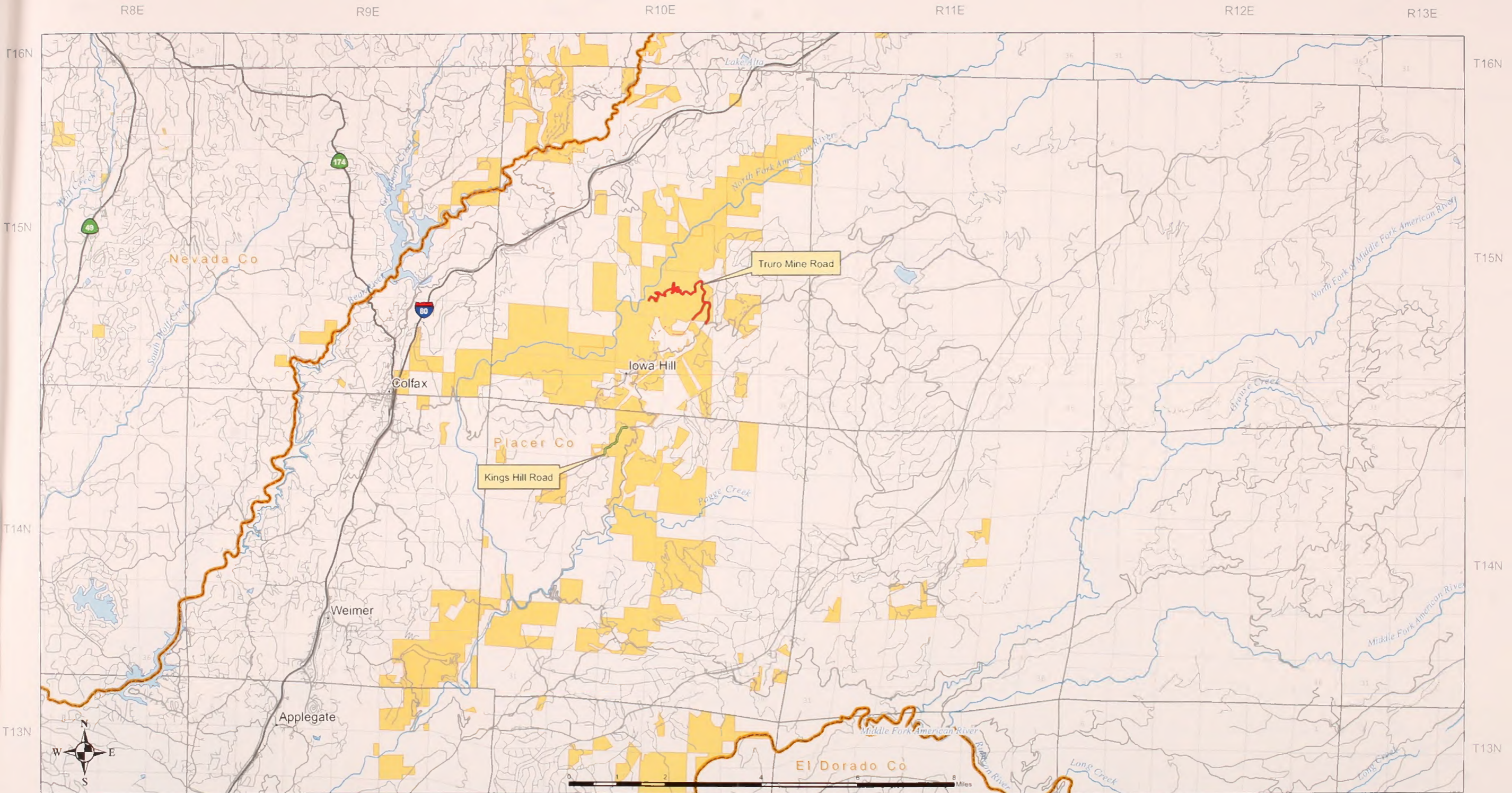


- Bureau of Land Management
- Designated Interim Route
- Designated Open Route

Sierra Resource Management Plan
OHV and Motorized Vehicle Route Designations
South Yuba River Area
Under Alternative B and D
 (Map 6a)



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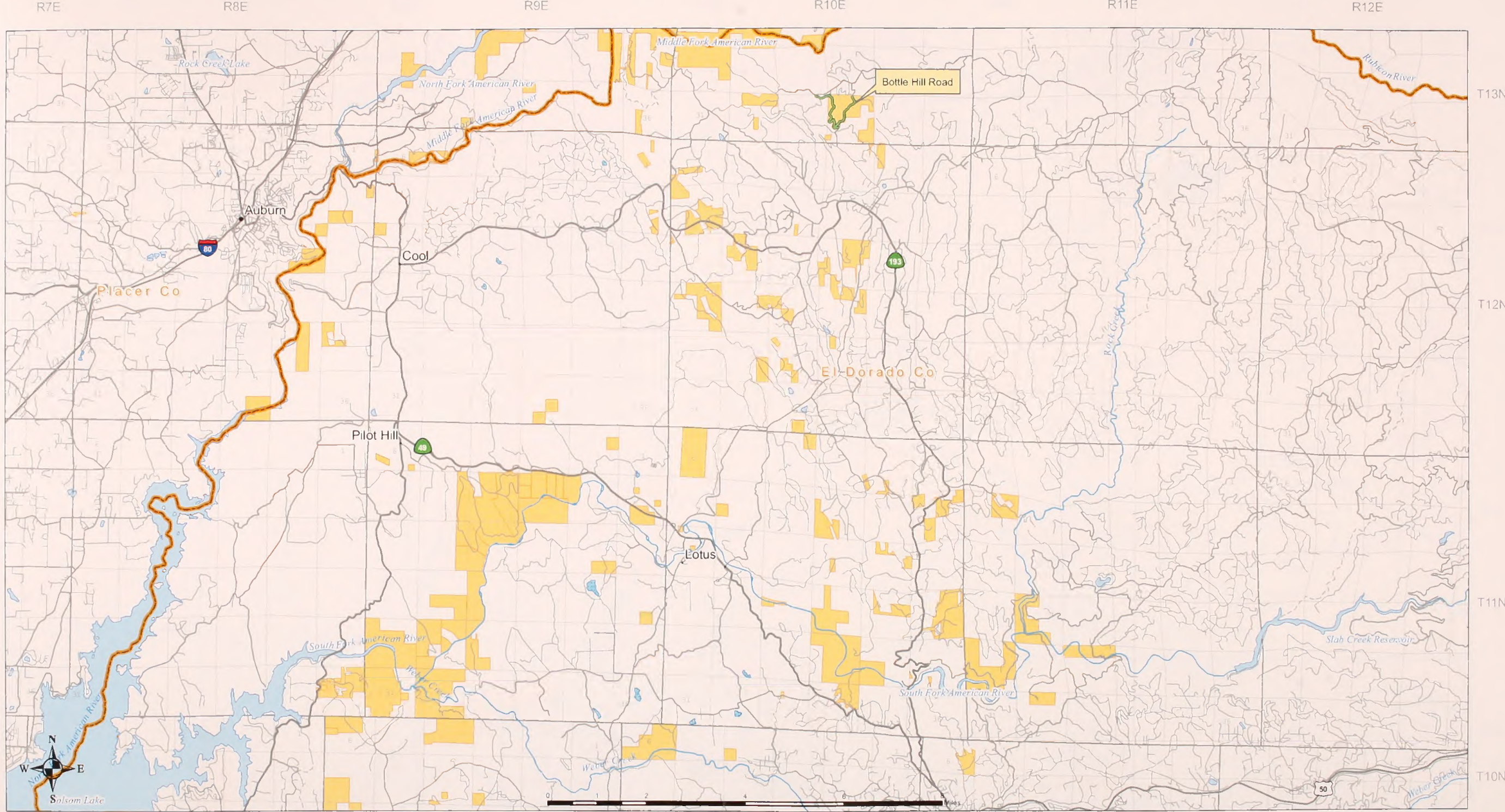
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**OHV and Motorized Vehicle Route Designations
North Fork of the American River
Under Alternative B and D
(Map 6b)**

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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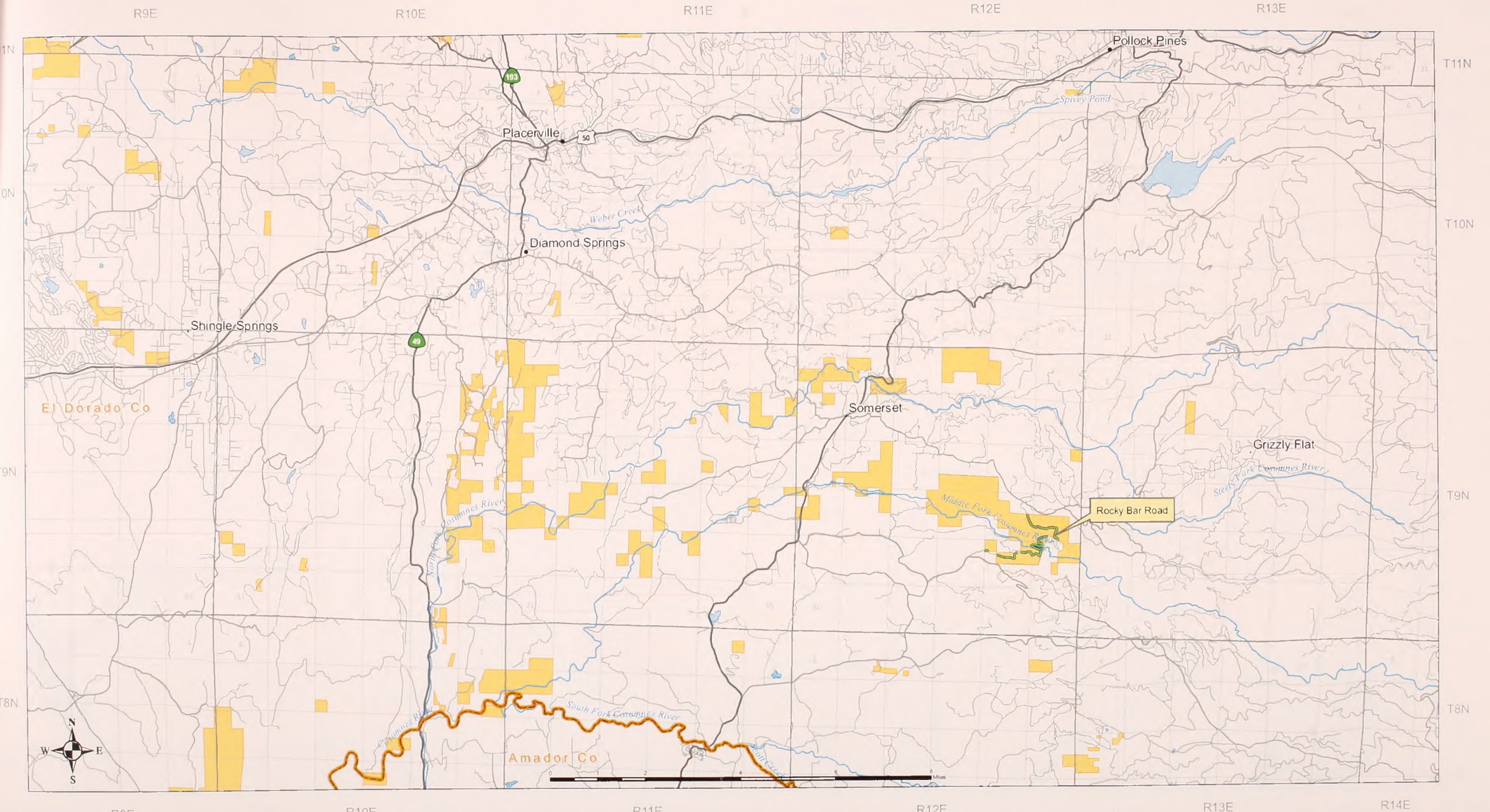


- Bureau of Land Management
- Designated Interim Route
- Designated Open Route

Sierra Resource Management Plan
OHV and Motorized Vehicle Route Designations
South Fork of the American River
Under Alternative B and D
(Map 6c)






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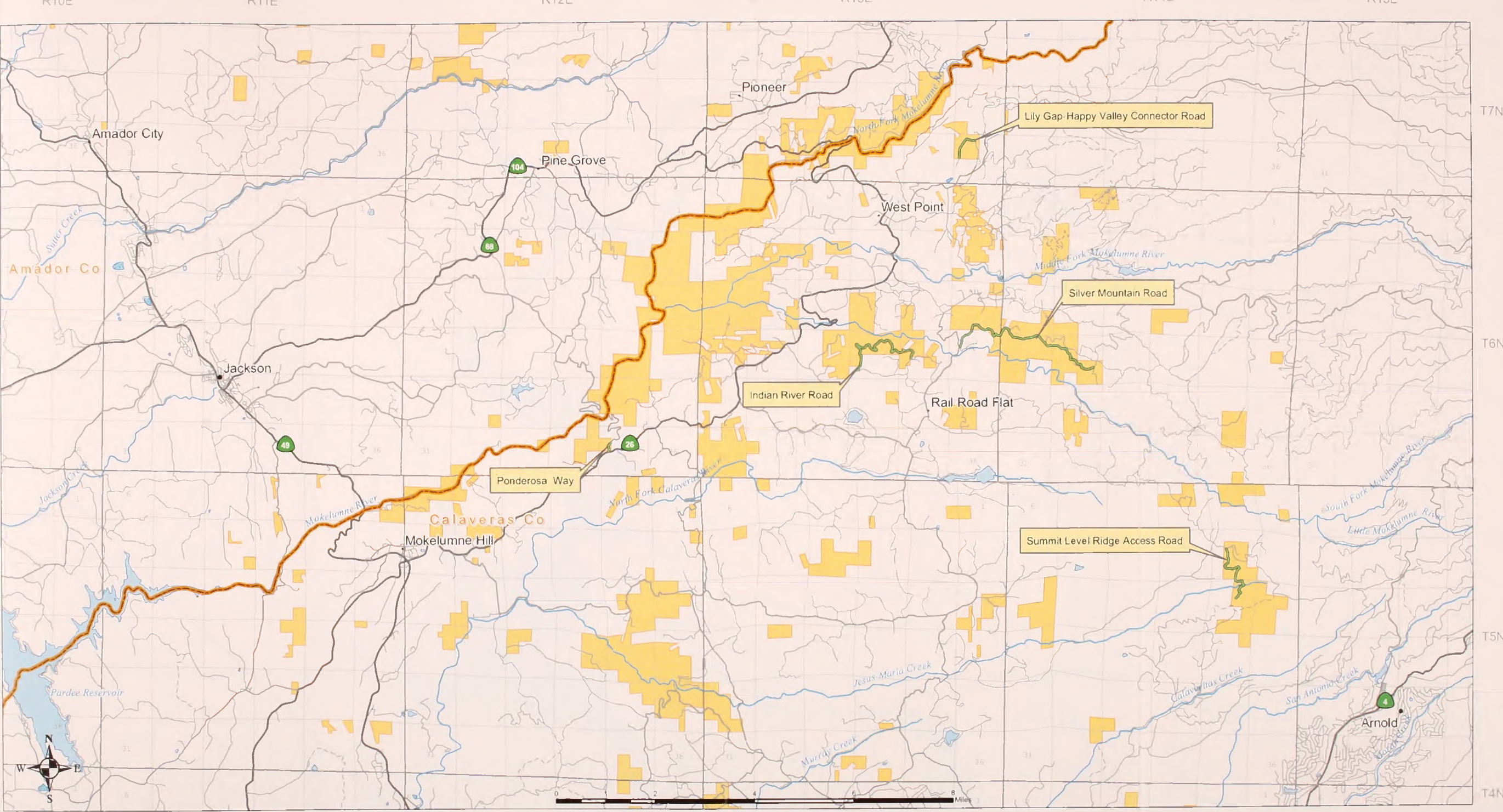
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**OHV and Motorized Vehicle Route Designations
Cosumnes River Area
Under Alternative B and D
(Map 6d)**

-  Bureau of Land Management
-  Designated Interim Route
-  Designated Open Route



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R10E R11E R12E R13E R14E R15E

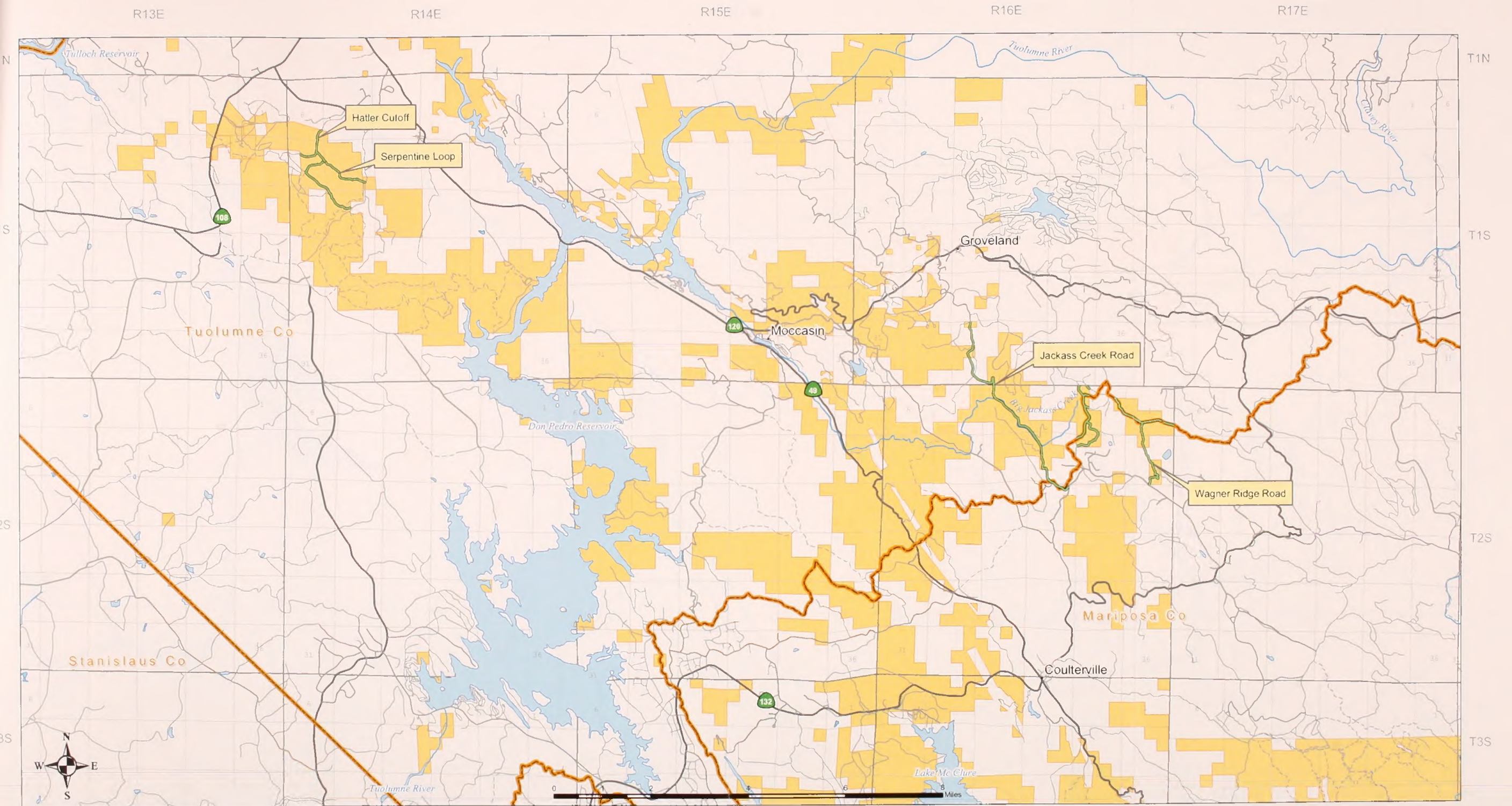
Sierra Resource Management Plan

**OHV and Motorized Vehicle Route Designations
Mokelumne River Area
Under Alternative B and D
(Map 6e)**

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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 Project: routes_11x17_map6e



Sierra Resource Management Plan

**OHV and Motorized Vehicle Route Designations
Tuolumne River Area
Under Alternative B and D**

(Map 6f)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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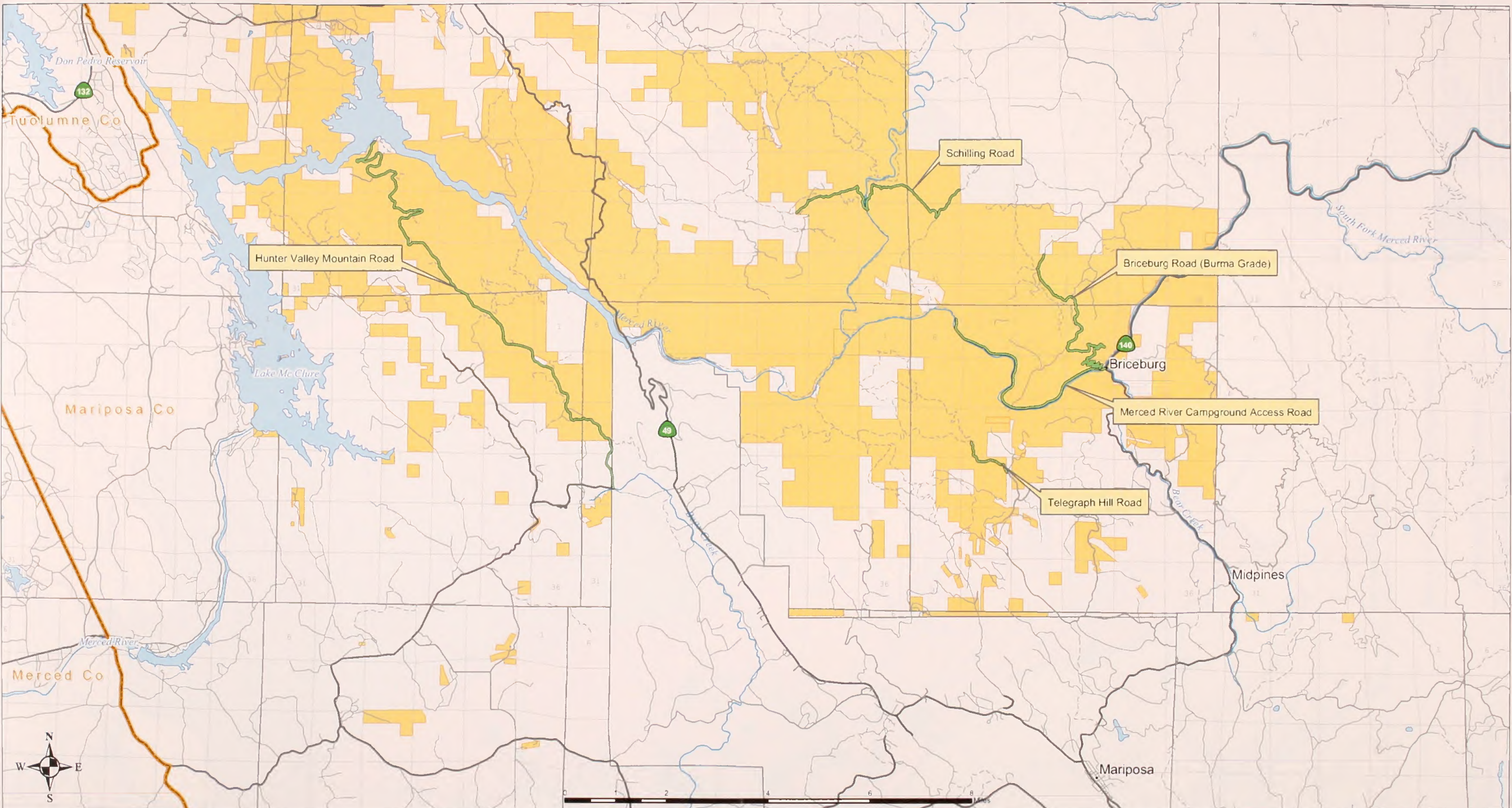
R15E

R16E

R17E

R18E

R19E



R15E

R16E

R17E

R19E

R20E

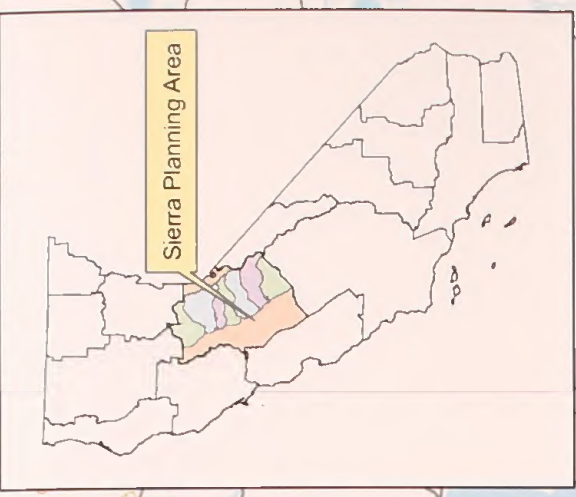
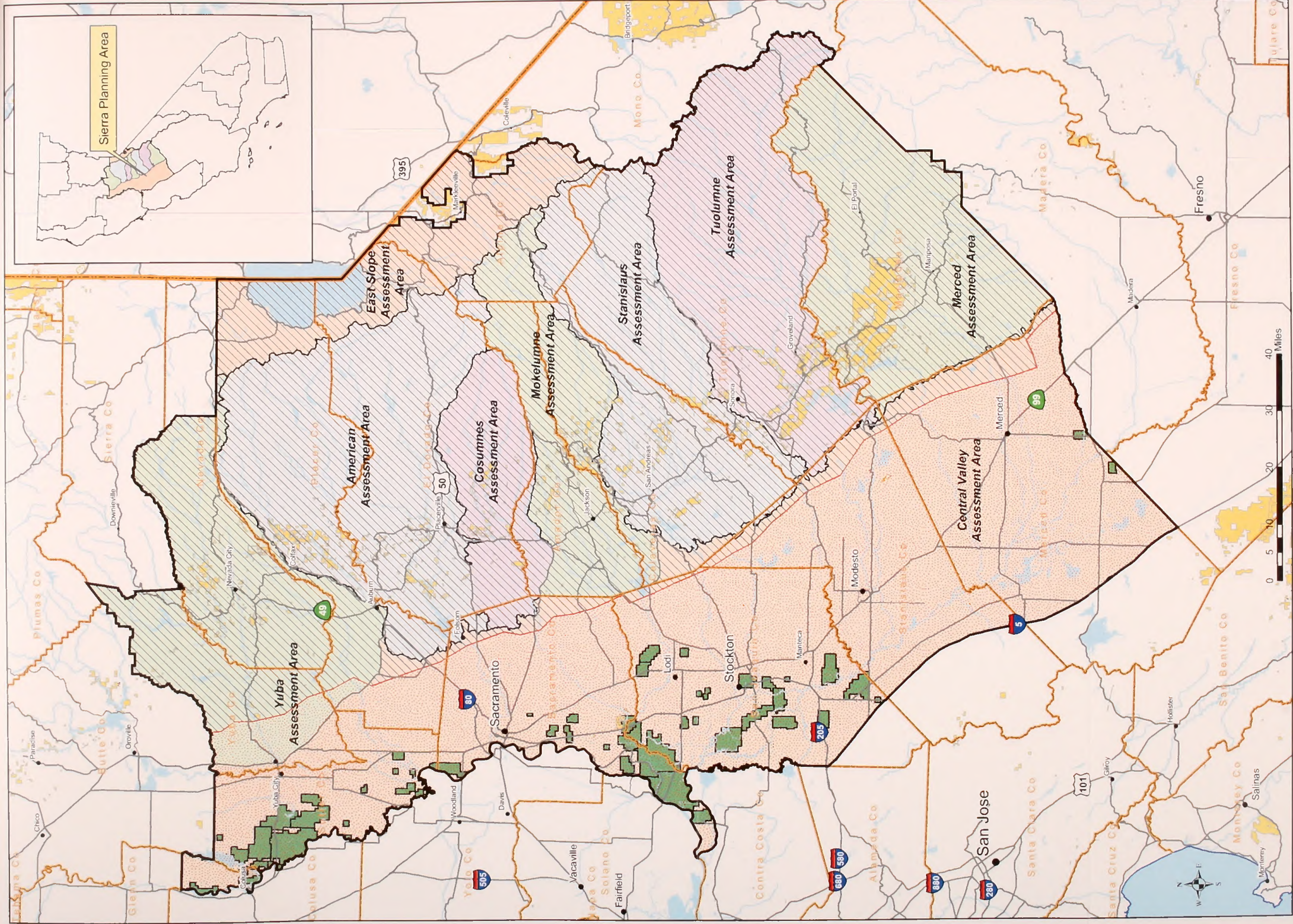
Sierra Resource Management Plan

OHV and Motorized Vehicle Route Designations Merced River Area Under Alternative B and D (Map 6g)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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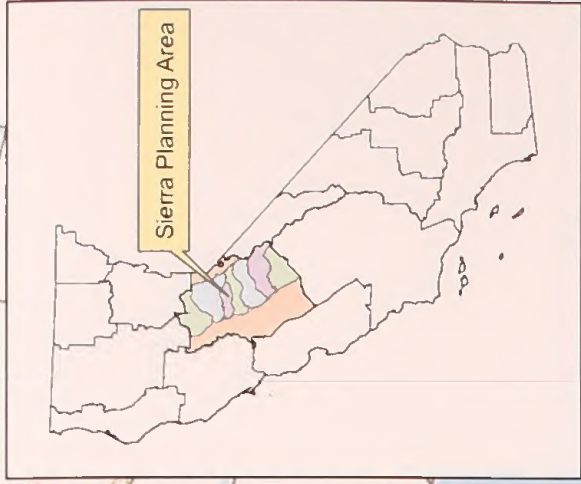
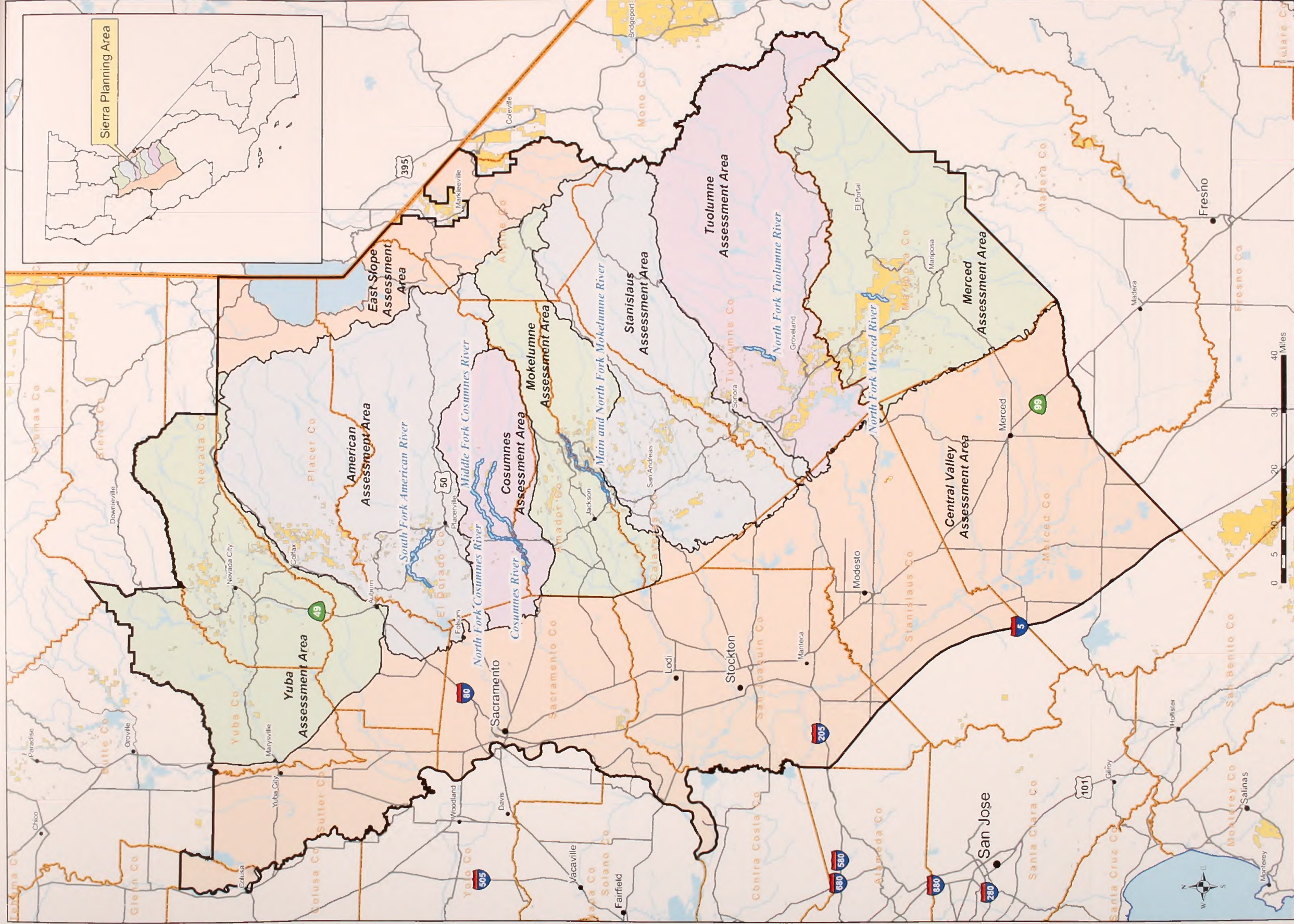





Sierra Resource Management Plan
Reasonably Foreseeable Oil and Gas Development Potential
 (Map 7)

- Sierra Planning Area
- High Oil & Gas Development Potential
- Low to None Oil & Gas Development Potential
- Administrative Gas Field Boundaries
- Bureau of Land Management



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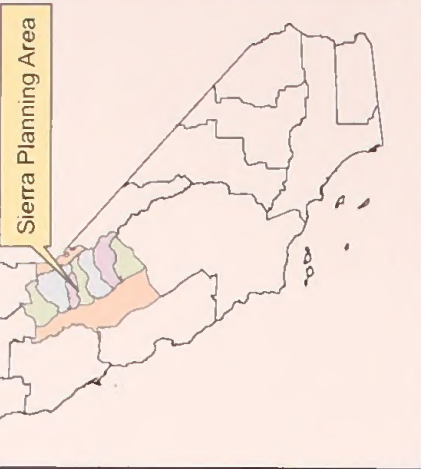
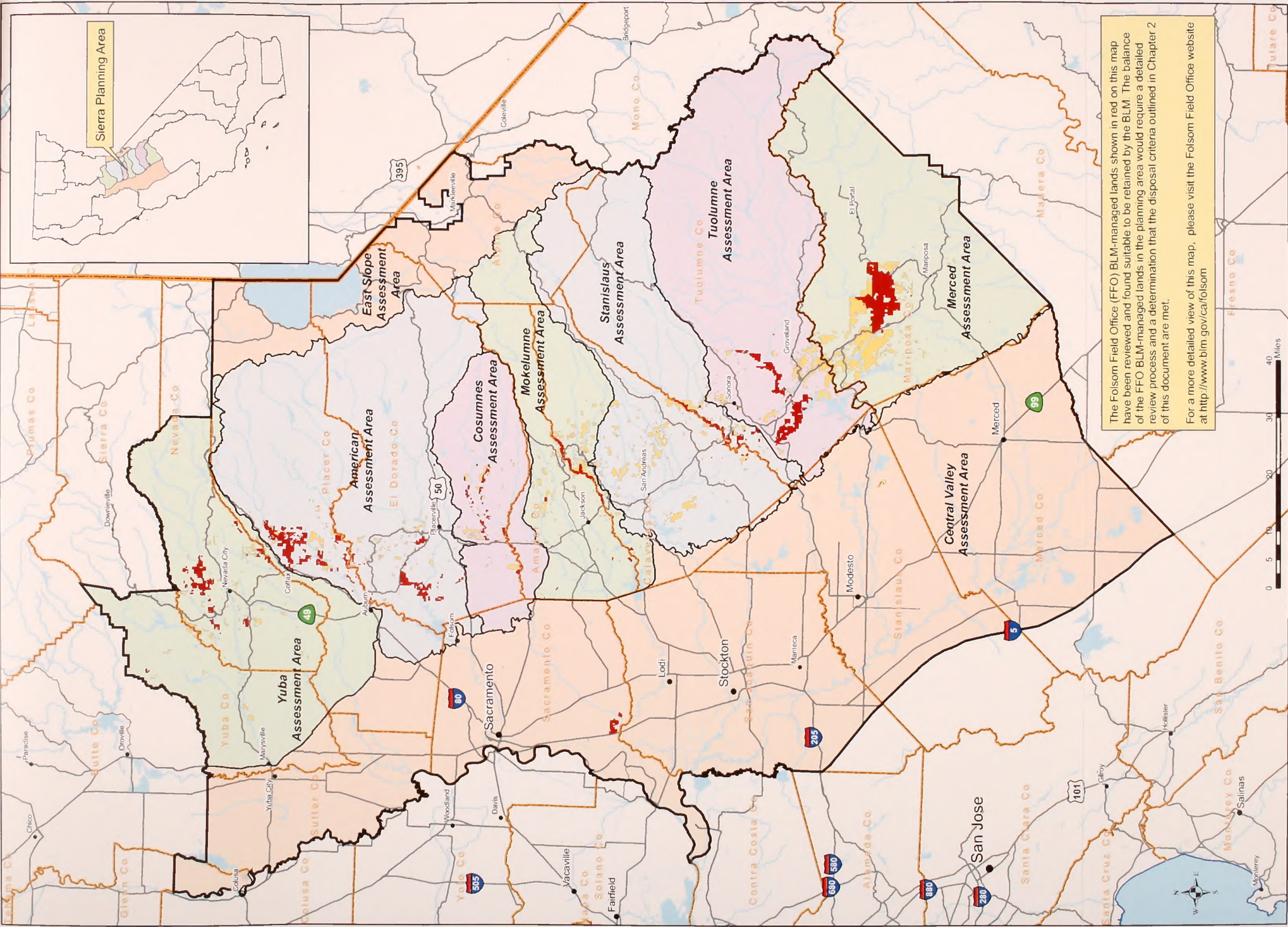
-  Folsom Field Office Boundary
-  Bureau of Land Management
-  Eligible & Suitable WSR

Sierra Resource Management Plan

**Eligible and Suitable
Wild & Scenic Rivers
(Map 8)**



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The Folsom Field Office (FFO) BLM-managed lands shown in red on this map have been reviewed and found suitable to be retained by the BLM. The balance of the FFO BLM-managed lands in the planning area would require a detailed review process and a determination that the disposal criteria outlined in Chapter 2 of this document are met.

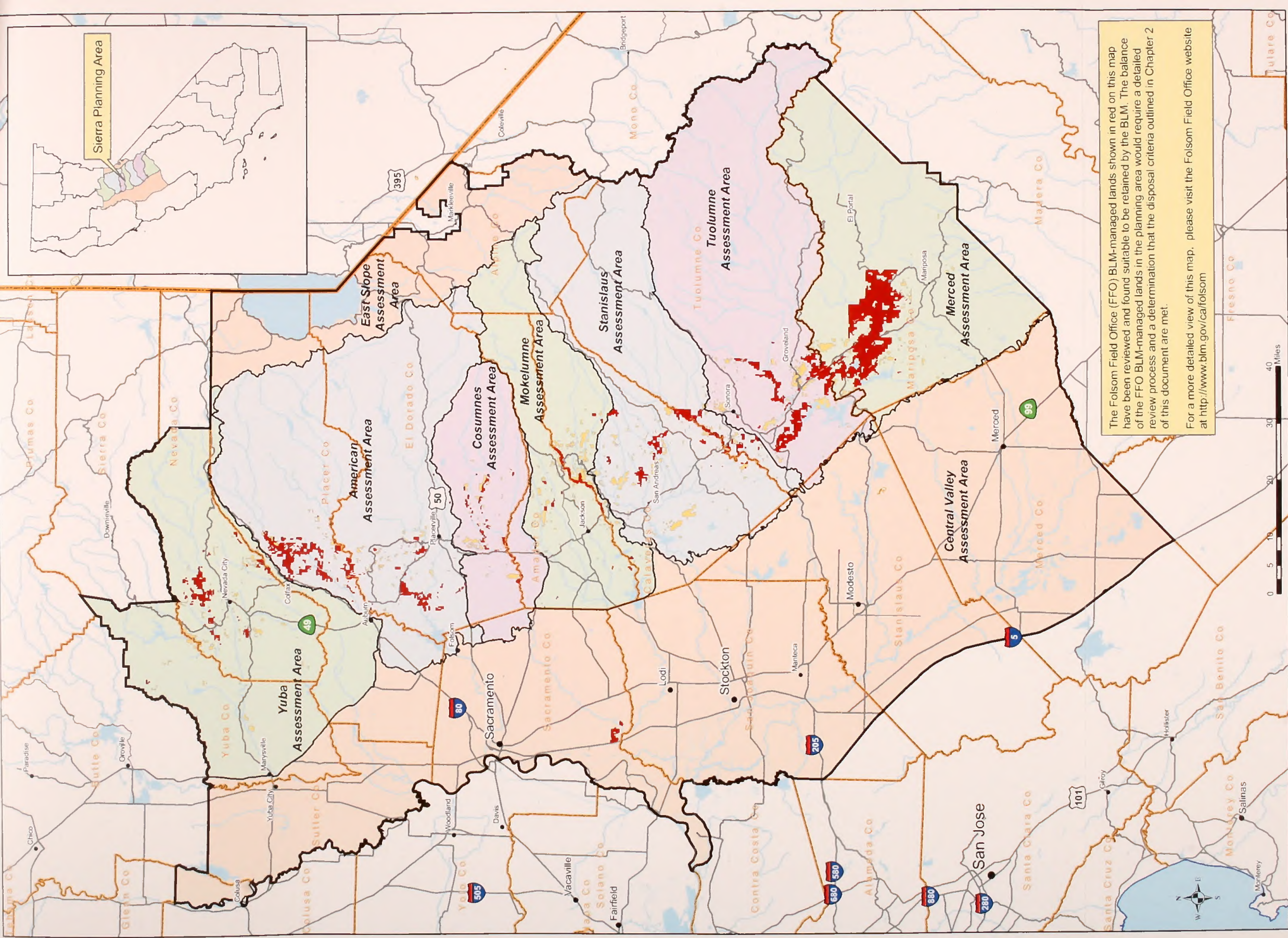
For a more detailed view of this map, please visit the Folsom Field Office website at <http://www.blm.gov/ca/folsom>

- Sierra Planning Area
- FFO - managed public lands
- FFO - managed public lands to retain (Alt A)

Sierra Resource Management Plan
Public Lands to Retain
Under Alternative A
 (Map 9a)



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 Project: lands_to_retain_11x17_map9a



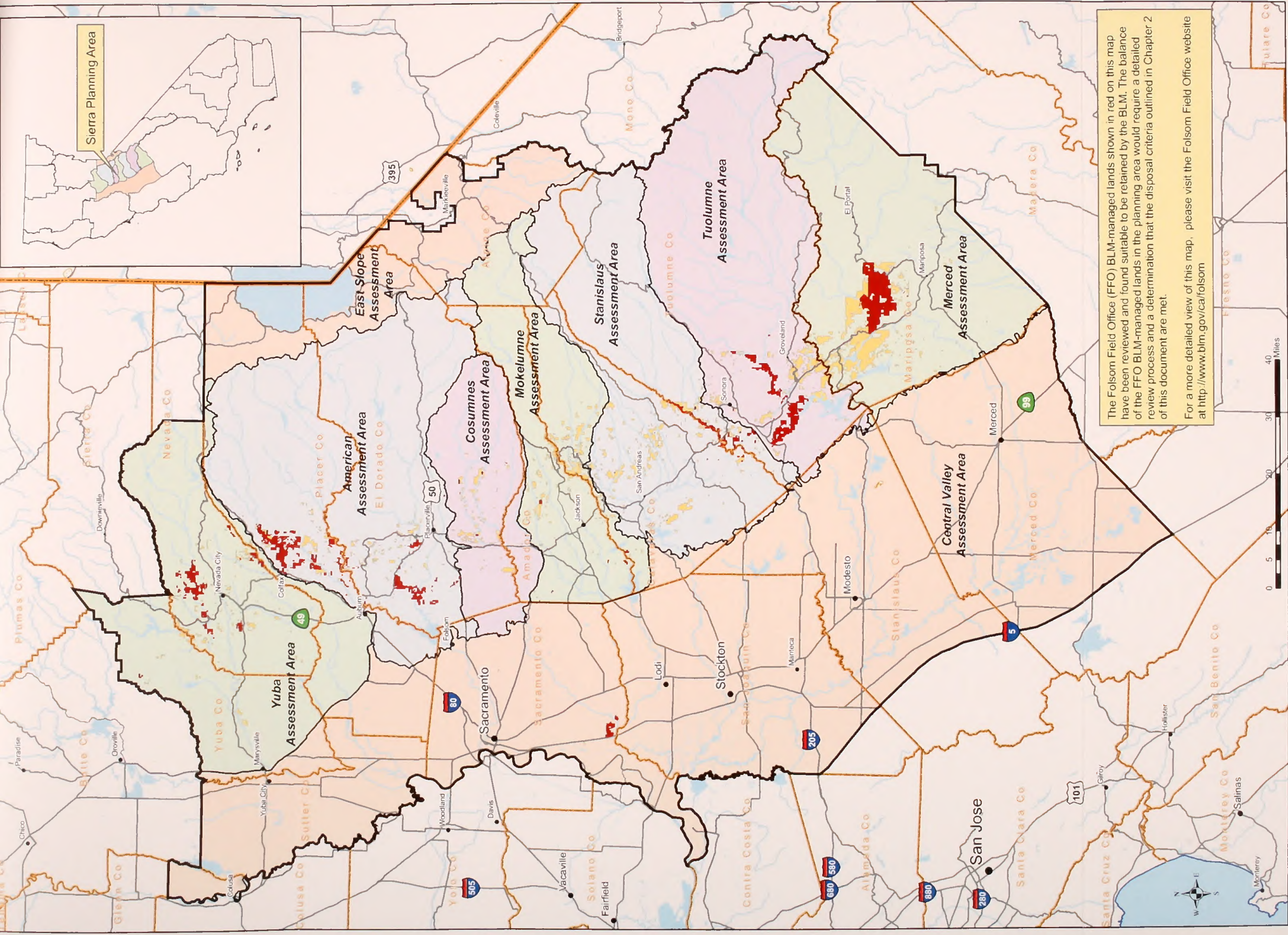
The Folsom Field Office (FFO) BLM-managed lands shown in red on this map have been reviewed and found suitable to be retained by the BLM. The balance of the FFO BLM-managed lands in the planning area would require a detailed review process and a determination that the disposal criteria outlined in Chapter 2 of this document are met.

For a more detailed view of this map, please visit the Folsom Field Office website at <http://www.blm.gov/ca/folsom>

Sierra Resource Management Plan
Public Lands to Retain
Under Alternative B
(Map 9b)






- Sierra Planning Area
- FFO - managed public land
- FFO - managed public land to retain (Alt B)



Sierra Planning Area

The Folsom Field Office (FFO) BLM-managed lands shown in red on this map have been reviewed and found suitable to be retained by the BLM. The balance of the FFO BLM-managed lands in the planning area would require a detailed review process and a determination that the disposal criteria outlined in Chapter 2 of this document are met.

For a more detailed view of this map, please visit the Folsom Field Office website at <http://www.blm.gov/ca/folsom>

-  Sierra Planning Area
-  FFO - managed public land
-  FFO - managed public land to retain (Alt C)

Sierra Resource Management Plan
Public Lands to Retain
Under Alternative C
 (Map 9c)



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 Project: lands_to_retain_11x17_map9c

Appendix B

Conservation Strategies

The following conservation strategies have been cooperatively developed by the BLM's Folsom Field Office and U.S. Fish and Wildlife Service. These conservation strategies are presented in draft form for public comment. If adopted, these strategies would serve as guideline recommendations for future BLM actions.

Anadromous Fish Conservation Strategy

Central Valley steelhead (*Oncorhynchus mykiss*) THREATENED

Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) THREATENED

Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*) CANDIDATE

Objectives

To sustain and manage viable populations of Chinook salmon (Central Valley spring-run and Central Valley fall-run) and steelhead in BLM-managed waters within the Folsom Field Office area by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing other adverse impacts to the species.

Prioritized Goals

1. Identify and map potential spawning, rearing, and holding areas and the migration routes within BLM authority that provide access to those sites using GIS and aerial photography.
2. Retain salmonid habitat in BLM authority, with priority on spawning habitat, rearing habitat, holding habitat, and migration routes.
3. Use conservation easements and acquisition with willing sellers to protect key habitats on private lands.
4. Maintain healthy contiguous riparian corridors along salmonid streams (see avoidance measure #6 below).
5. Create, enhance, and restore key habitats.
6. Adhere to Impact Assessment below and Avoidance of Adverse Impacts Guidance when planning activities within suitable habitat for the species.
7. Coordinate with CDF and USFS to eliminate the use of retardants that contain cyanide.

8. Reduce sedimentation occurring as a result of activities such as grazing, rights of ways, mining, restoration, fire, and timber harvest.
9. Participate in the FERC (Federal Energy Regulatory Commission) relicensing process to determine protection, mitigation, and enhancement measures with regard to dam releases and with particular emphasis on flow rates and timing of releases.
10. Develop appropriate management response for fighting fire near salmonid streams. For example, add language to the Folsom Field Office Fire Management Plan discussing preferred alternatives for fighting wild fires near anadromous fish populations in order to protect the habitat during suppression activities. During wild fire, protection of human life and property will take precedence over habitat protection.
11. During prescribed fires in riparian areas identified as important fish habitat, large woody debris near the shoreline that may serve as refugia during high flows should be left in place and should not be burned.
12. Manage grazing intensity, location, and timing to ensure that key habitat is not impaired. In habitat that has been seriously degraded, employ methods such as fencing, temporary non-use, change in the season-of-use, change in preference, etc., to allow for the area to recover.
13. Stream reaches with spawning, rearing, and holding habitat should be withdrawn from mining. Mining in streams that act solely as migration corridors should be restricted from mining during migration periods.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid or minimize adverse impacts during key life history periods (adult migration to freshwater, holding, spawning, rearing, and juvenile migration to the ocean).
2. Develop and implement best management practices to prevent or minimize adverse impacts to anadromous fishes from in-stream and stream bank activities associated with mining operations. Identify streams for which in-stream and stream bank activities associated with mining threaten habitat suitability for anadromous fishes.
3. During the land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
4. Incorporate existing BLM guidelines of no retardant within 300 feet of waterways. If possible, near known spawning locations and the tributaries utilized by the fish to get there, avoid retardant drops within 500 feet of the waterway. Protection of human life and property will take precedence over habitat protection during a wild fire.

5. Minimize the loss of anadromous fish spawning habitats and avoid long-term habitat degradation, including migration habitat.
6. Implement a 500 foot “no disturbance” buffer adjacent to these streams. Actions that should be controlled include grazing, building construction, new roads, control lines during wild fire, and fuel breaks (this buffer does not apply to prescribed fires in riparian areas used as a habitat enhancement tool). During wild fire, protection of human life and property will take precedence over habitat protection.
7. Existing roads that are degrading key habitat will be recontoured as near as possible to the original slope and revegetated to slow sedimentation. Exposed compacted soils will be scarified and revegetated or seeded.

Bat Conservation Strategies

Objective

Because of the wide-spread decrease in bat numbers and increasing loss of habitat, the BLM Folsom management approach will be an effort to protect all species of bats and their habitats. Conservation of bat roosting and foraging habitats is important to consider when conserving bats on BLM land. Habitats include specific roost and foraging requirements which vary by species, as well as by season and reproductive status.

To sustain and manage viable populations of these bat species by managing factors affecting the distribution, abundance and quality of habitat for these species, and by minimizing adverse impacts to these species.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority can not be met in the short term, other lesser priorities will be completed.

1. Known important and crucial bat habitat areas, with priority on hibernacula and maternity sites, should be held in BLM authority and managed appropriately for species requirements and survival.
2. Lands containing sensitive bat roost will be withdrawn from the general land laws (mining claims, disposal, exchange etc.).
3. Determine and map location and distribution of important bat habitat components, including roosts, potential foraging areas, and natural and artificial water sources. Inventory priorities are: mines and caves, bridges, cliff faces, abandoned buildings, and forested habitat (copses). Use Pat Brown’s protocol for bat inventory when appropriate (see page ---). Survey during the appropriate interval to cover most species using caves and mines. Treat bat roost site information as confidential.

4. Mines being used by major populations and identified special status species will be maintained to ensure plant growth at entrances is cleared and portal or shaft closures are maintained to provide optimal mine temperature and humidity.
5. Install exclosures at roost sites where bats are being disturbed. Camping, fires, parking, vehicle exhaust, partying, and bridge climbing are activities that should be controlled. Examples include, but are not limited to a) fence a portion of Bear Creek Bridge to protect an important Mexican free-tail bat maternity roost between November and February. Conduct a baseline survey in late April/early May. Conduct follow-up surveys after the fence is installed; b) After the methyl-mercury cleanup, gate the entrance(s) to Poore Mine; c) Gate a mine adit within the South Yuba Campground.
6. Assess structure and stability of mines as well as temperature and airflow concerns prior to partial closures or gates constructed. Where appropriate BLM will use the most current gating specifications for mine features. Other options for protecting bat habitat in abandoned mines would include exclosures or protective fencing. Complete closure of abandoned mines known to support bats will be considered only as a last resort, and be done in consultation with qualified biologists experienced with bats.
7. Include known important roost sites as a priority avoidance locality in the Fire Management Plan.
8. Manage the prescribed fire and fuel reduction program in a manner that is compatible with bat conservation. Examples include 1) placement of fuel breaks away from important roosts, hibernaculum and maternity colonies; 2) smoke management to prevent drift and settling within ¼ mile of important bat features; 3) protect snags, large trees, and forested habitats (copses). Include fuel reduction and prescribed burning to improve habitat conditions for bats.
9. Work with volunteers to identify and monitor roost sites (members of the caving community, TNC, miners, etc).
10. Adhere to Impact Assessment below (page 4) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities within suitable habitat for the species.
11. Evaluate areas with existing or potential bat habitat for conflicts of use (recreation, grazing) and determine appropriate management schemes (seasonal restrictions, etc.).
12. In caves, install protective measures, as needed, when known populations are threatened or in decline. Could include gates, exclosures, fences, and possibly cave entrance permit system, or other means to mitigate disruption to bat roost. Maintain cave entrances for bat passage and preserve habitat.

13. Provide access control, such as road closures, trail re-routing, which may be needed to protect some bat roost sites from vandalism or disturbance.
14. As mining buildings, and other surface structures become available (abandoned by claimants) and do not merit destruction, enhance for bat use.
15. Coordinate with Cal Trans to determine important bat roosts at bridges that occur on BLM lands.
16. Support (credible) bat research projects, work with other agencies, BCI, cavers, education groups, etc.
17. Appropriate grazing management schemes to maintain habitat integrity and diversity include such actions as decreasing herd numbers, fencing damaged riparian areas, grazing rotations, etc. Monitor grazing impacts to riparian areas.
18. Near identified bat roosts, mine and quarry ponds will be tested for toxicity. Ponds that contain contaminants, which may be harmful to wildlife, measures will be taken to keep wildlife away from the site until the ponds are cleaned up, drained, or capped.
19. Identify appropriate stock pond management in respect to bat foraging and manage stock ponds accordingly.
20. Limestone/marble quarry mining will contain stipulations to protect caves/fissures, and other potential bat habitat, encountered during mining. Quarries with potential roosting site will be inventoried periodically.
21. Identify neighboring land use impacts on sensitive roost sites and integrate protective measures as appropriate or necessary.
22. Known important bat roosts for all sensitive species, located on nearby private lands will be identified as potential acquisition parcels. Acquisition will only be conducted with willing sellers. Explore the use of conservation easements to protect sensitive bat roost or foraging sites located on private lands.
23. Install bat houses and artificial roosts where needed. (Loss of habitat due to wildfires, destruction or loss of building roost, etc.)
24. The prescribed use, amount and schedule of pesticide/herbicide application should be closely adhered to and monitored. The use of pesticides in the Folsom Field Office is extremely limited, but its use should still take into consideration its potential impacts to roosting and foraging bats.
25. To create habitat or to experimentally mitigate for mine closures or if an important feature collapses, attempt to replicate habitat by restoring/ improving ventilation.

26. Provide bat education programs where/when needed by signing, handing out of published material and presentations.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid important bat roosting and foraging areas during crucial breeding and wintering periods.
2. For bridge work, include seasonal restrictions within potential habitat (April-August). If bridges are planned for removal, appropriate seasonal restrictions should apply.
3. Avoid direct mortality or harm to individual bats or colonies.
4. Avoid application and drift of chemical retardants and ignition devices near known colony roost or maternity sites and water (ponds and still water) if possible.
5. Avoid cutting trees with roost characteristics, if possible, and if not an extreme safety hazard, during suppression and rehabilitation. During fuel reduction activities or salvage timber sales, avoid removing trees with roost characteristics (open cavities, loose bark) or limbing/removing only portions of hazard trees.
6. Determine bat presence before abandoned mine closure and bridge removal/work.
7. Avoid important roost sites during prescribed fire. Near important roosts, take actions to minimize smoke and fire impacts (scrape, foam or wet-line around snags or large roost trees prior to burning).
8. During wildfire suppression, attempt to clear brush away from caves, mines, and around snags and large trees. Limb large trees to remove ladder fuels. Human safety takes precedence over habitat protection. Attempt to establish fire breaks with the least amount of removal of snags and large trees.
9. Seasonally restrict prescribed fire in winter and early spring near important winter hibernacula and between April and August near known maternity colonies or roosts. Minimize smoke and fire impacts if they must occur during biologically critical times of the year. For example, if you can fire-off the portion closest to the area during non-critical season and complete the rest of burn as scheduled or attempt to plan burn around weather conditions with little wind or wind blowing away from crucial habitat areas. Fall burns would be more appropriate.
10. Vegetation should be cleared from choked ponds or stock tanks in October and November.
11. If mine activities are resumed in a previously inactive mine, measures should be taken to minimize disturbance such as seasonal restrictions.

12. During timber harvest, consider habitat enhancements for lost roost sites (snag creation, drilling cavities in trees, bat boxes, etc).
13. Minimize, to the extent feasible, and mitigate for the loss of bat habitats.
14. Avoid long-term habitat/water quality degradation.

**Delta Native Fishes
Sacramento splittail, hitch, blackfish, and Sacramento sucker)
Conservation Strategy**

Objective

To sustain and manage the river and riparian ecosystem to such an extent as to support viable reproduction of the Sacramento splittail (spittail), hitch, blackfish, and Sacramento sucker, by enhancing winter spawning habitat through restoration and management of winter-flood areas and the Cosumnes River flood plain west of Highway 99.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in order by priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

Within the watershed, continue to acquire habitat and restorable habitat in a manner consistent with the existing riparian restoration goals of the CRP.

1. Address the following factors in all planning documents that address Valley Riparian habitat and flood-plain management: (a) minimize the loss of potential CRP fish habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management actions to enhance potential CRP fish habitat; (c) restore the Cosumnes River and its tributaries to the proper functioning condition and remove impediments that threaten survivorship of the species, (d) include set-back levees as a project alternative, or part of alternatives, for all actions that involve levee placement, enhancement, restoration, or protection; (e) develop maintenance guidelines, in partnership with FWS and CDFG, to reduce adverse effects of routine maintenance on CRP fishes. This applies to all planning documents that are currently in preparation and to existing documents that will be updated, or will have this strategy appended to them.
2. Identify winter-flood areas that support breeding occurrences of the CRP fishes and identify potential spawning areas that could be enhanced to support breeding occurrences
3. Conduct, or allow to be conducted, periodic surveys that are tied to flood events and drought cycles to identify the status of the CRP fishes, with an emphasis on splittail, on the Cosumnes River Preserve.

4. Complete the Cosumnes River Preserve (CRP) Management Plan to reflect management and ecosystem needs of the Cosumnes River Preserve (CRP) fishes, or append this strategy to the plan.
5. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities within suitable habitat for the species.
6. Identify areas that could be enhanced to support foraging habitat for juvenile CRP fishes.
7. Identify all levees within the CRP that potentially could be set back to enhance or provide flood protection to the land side of the levee while increasing CRP fishes spawning habitat. Include farming options, such as rice, corn, and tomato farming, for the river-side lands that could be flooded during high-rainfall years.
8. Continue to facilitate and partner in fisheries research, with emphasis on: (a) spawning occurrences by the species, (b) spawning success, (c) entrapment, (d) barrier effects, (e) mortality factors, (f) selenium, mercury, and pesticide concentrations in the substrate and water column, and (g) population viability analysis.
9. Coordinate with the North Delta Improvements Group in design and implementation of a study to set back levees at Staten Island, and assist in implementation of their recommendations.
10. Examine funding and partnerships: CRP partners include The Nature Conservancy; California Department of Fish and Game; Ducks Unlimited, Inc.; California Department of Water Resources; Sacramento County Department of Regional Parks, Open Space and Recreation; and Wildlife Conservation Board.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of delta native fishes habitat when planning actions in habitat.
2. Avoid construction activities in, or within 1000 feet of, inundated spawning habitat, unless consultation with the FWS has been completed on the action.
3. Construction personnel should receive FWS-approved worker environmental awareness training prior to working in delta native fishes habitat. This training

- instructs workers to recognize the species and its habitat and is intended to protect the workers from accidentally harming or killing the species.
4. If this species is encountered during in-water work, cease all construction-related activities until consultation with the FWS has been completed. Report any sightings and any take of these species to the FWS immediately by telephone at (916) 414-6600.
 5. After completion of construction activities, BLM will ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting forage or shelter plants and constructing temporary refugia.
 6. Explore options that protect banks without the use of traditional structural bank protection measures such as rock riprap. For example, reconfigure levees, including levee setbacks, construct secondary levees outside the inner levees, and realign levees to provide wider channels and to allow natural river meandering; create shallow underwater habitats (shallow levee slopes) at waterline for fish spawning and foraging habitat (flooded vegetation) on levees; and enhance borrow areas by creating shallow or seasonally flooded habitat near the river channel at a safe distance from the levee. When appropriate, include use of borrow inside levees to create backwaters and areas of shallow flooded vegetation for fish spawning habitat. Created backwaters and shallow flooded areas should include contours that minimize stranding.
 7. Banks that are riprapped or require riprapping should include scalloping, herbaceous vegetation, and LWD components. These components should use stockpiled mature riparian trees that require removal prior to riprap construction.

**Forest Raptor Conservation Strategy for
Bald eagle (*Haliaeetus leucocephalus*), California spotted owl (*Strix
occidentalis occidentalis*), and northern goshawk (*Accipiter gentilis*)**

Objective

To sustain and manage forest ecosystems to such an extent as to support and maintain viable populations of the bald eagle, California spotted owl, and northern goshawk (forest raptors) on BLM lands in the FOFO area by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing impacts to breeding during forest raptor nesting seasons.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective for forest raptors and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Protected Activity Centers
 - a. Protect nesting areas by identifying and mapping (using GIS) PACs 600 acres in size for the California spotted owl and for the bald eagle, consisting of the best available habitat, including known and suspected nest stands, in as compact a unit as possible.
 - b. Limit activities within PACs to those designed to improve the suitability or integrity of the PAC or to protect additional habitat within the home range of the pair using the PAC.
2. Hold bald eagle and California spotted owl habitat areas in BLM authority, with priority on nesting, roosting, and foraging sites.
3. Address fire hazard and risk by strategically locating fuels treatments in the urban wildland intermix zone and in old forest areas characterized by high hazard and risk.
4. Survey suitable bald eagle and spotted owl habitat with unknown occupancy prior to undertaking vegetation treatments, and conduct site-specific consultation with the FWS if the bald eagle are detected.
5. Survey to establish the location of the nest site when activities are planned adjacent to a PAC, and consult with FWS if activities may affect the bald eagle.
6. Identify and protect bald eagle winter roosts.
7. Map old growth forests using GIS to assist in management decisions relative to goals 1-4, 8, 10, 12, 14-16, and 20.
8. Maintain and manage sufficient habitat to support X California spotted owl pairs.
9. Monitor nesting success for the 3 years following each activity within a PAC.
10. Identify known and potential bald eagle and California spotted owl activity centers as important for acquisition. Acquisition will only be conducted with willing sellers. Explore the use of conservation easements to protect sensitive forest raptor habitats located on private lands.
11. When conducting timber harvests within PACs, limit harvest to 25 percent or less of the mid-sized trees (18 to 24 inch dbh), leaving the six largest trees in the stand, and maintaining a canopy closure of at least 70 percent. Nest trees will not be harvested. (Buffer area around nest tree?)

-OR-

When conducting timber harvests within PACs, limit harvest to one out of every four large trees (greater than 24 inch dbh) and maintaining a canopy closure of at least 70 percent. Nest trees will not be harvested. (Buffer area around nest tree?)

12. Protect 90% of all patches larger than one acre of high quality old forest characterized by large trees and high canopy closure (seek clarification on what high quality old forest is and what we mean by protection, also look at what the maps designated).
13. Adhere to the impact assessment guidance below (page 3) and avoidance of adverse impacts guidance (page 4) when planning activities within suitable habitat for forest raptors.
14. Provide for connectivity between spotted owl pairs on BLM and USFS lands when possible.
15. Identify and protect occupied, as well as suitable but unoccupied, northern goshawk habitat.
16. Determine appropriate nest buffer size for the goshawk. Implement buffer protection consisting of the best available habitat, including known and suspected nest stands.
17. Reduce risk of stand-replacing wildfire using mechanical thinning and/or prescribed fire at a rate no greater than 5 percent surface area per year, and not to exceed 20 percent in ten years, within PACs.
18. Coordinate with the Forest Service on efforts to conduct fuels treatments within PACs for BLM lands containing a shared property line with the Forest Service.
19. Provide bald eagle and California spotted owl education programs where/when needed by posting signs, handing out published material, and offering presentations.
20. Provide suitable habitat within the most used core area surrounding the PACs for all forest raptors.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.

2. Assure bald eagle recovery needs, especially nest-site protection, are met in the areas potentially affected by projects.
3. Avoid management activities and recreation in PACs and winter roosts detected during surveys.
4. Identify opportunities to protect and conserve forest raptors and their habitats. Conserve the maximum amount of forest raptor habitat when planning actions in habitat. Minimize, to the extent feasible, loss of forest raptor habitats and avoid long-term habitat degradation.
5. Design projects to minimize mortality to forest raptors.
6. Survey suitable bald eagle and spotted owl habitat with unknown occupancy prior to undertaking vegetation treatments or management activities in the forest and conduct site-specific consultation with the FWS if the bald eagle or California spotted owl are detected.
7. Use established protocols for surveys to avoid harming or harassing bald eagles or California spotted owls.
8. Identify avoidance areas based on survey results and establishment of PACs
9. Maintain a limited operating period by not conducting activities within 2 mile of the bald eagle nest sites during the breeding season (January 1 through July 31³) nor conducting activities within 3 mile of the California spotted owl nest sites during the breeding season (March 1 through August 31), to avoid harassment resulting in disrupted reproduction and/or loss of reproduction
10. Avoid impacting forest raptors on neighboring lands by adhering to limited operating periods for unsurveyed lands
11. Avoid conducting land management activities within ¼ mile of bald eagle winter roosts from November 1 through January 30
12. Do not commence management activities within PACs, or within ½ mile of winter roosts, unless consultation with the FWS has been completed on the action.
13. Follow avoidance and minimization measures in all site-specific biological opinions from the FWS.
14. BLM employees, volunteers, and contractors conducting activities in forest raptor habitat should receive FWS-approved worker environmental awareness training prior to initiating work. This training instructs workers to recognize these raptors

³ Work can begin prior to July 31 if conclusive biological evidence indicates young eagles have fledged.

- and their habitat and is intended to protect the workers from accidentally harming, harassing, or killing the species.
15. If bald eagles or California spotted owls are found within ½ or ¼ mile, respectively, during management activities that have not undergone consultation with the FWS, cease all activities until consultation with the FWS has been completed. Report any new detections and any take of these species to the FWS immediately by telephone at (916) 414-6600.
 16. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native seed mix.
 17. Near PACs, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical. Avoid cutting trees that meet the requirements for bald eagle and California spotted owl and nest trees. Large snags should be left in place if possible.
 18. Avoid application and drift of chemical retardants and ignition devices near known nest sites if possible.
 19. If areas within PACs must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Use piling to treat surface fuels during initial treatment.
 20. Disturbances such as thinning, planting, and other rehabilitation measures should be avoided within the PACs and during the breeding season of bald eagles and California spotted owls. Reseeding and erosion control measures should be taken. Large downed logs should be left in place as they may contribute to the value of foraging habitat.
 21. During forest and fuel break clearing activities, avoid trees with nest site characteristics. Remove limbs only on threatening portions of hazardous trees, in order to maintain a thick canopy. Attempt to establish fire breaks with the least amount of removal of snags and large trees.
 22. Avoid prescribed fires and using ignition devices in identified PACs.
 23. Seasonally restrict (disallow) prescribed fire between March 1 and June 30 near PACs. Minimize smoke and fire impacts if they must occur during biologically critical times of the year.
 24. Develop appropriate management plans to address recreation activities including seasonal restrictions, group size, duration, and repetition restrictions. Evaluate areas with existing or potential California spotted owl habitat for conflicts of use and determine appropriate management schemes (seasonal restrictions, etc.).

- Areas of concern would be late seral stage forests, forests with dense canopies, riparian corridors, and large wooded areas (with large snags).
25. Provide access control, such as road closures and trail re-routing, to protect forest raptor nesting, roosting, and foraging sites from vandalism and disturbance.
 26. Avoid removal of trees and snags with appropriate nesting, roosting, or foraging characteristics unless the tree is particularly hazardous. If possible, limb a hazardous tree instead of removing the entire tree. Include seasonal restrictions within for hazard tree work in PACs.
 27. Avoid constructing roads in or near forest raptor habitat. If a road must be built, attempt to build the road on the outskirts of the habitat to avoid forest fragmentation.
 28. Restrict off road vehicle use near known bald eagle and spotted owl PACs during the breeding season.

California Red-Legged Frog (*Rana aurora draytonii*) and Foothill Yellow-Legged Frog (*Rana boylei*) Conservation Strategy

Objectives

To sustain and manage viable populations of the California red-legged frog and foothill yellow-legged frog on BLM lands within the Folsom Field Office area. Stabilize and manage the California red-legged frog population at Spivey Pond. Repatriate the California red-legged frog to suitable habitat on BLM lands.

Prioritized Goals

1. Place Spivey Pond into an ACEC status.
2. Identify sites where deleterious non-native predators are present. Prioritize where control efforts should take place.
3. For all known occurrences of the California red-legged frog on BLM land, control/eliminate deleterious non-native species/predators (plants, vertebrates) using methods that are determined to be the most effective.
4. Develop a sterilization protocol for equipment used in either California red-legged frog or Foothill yellow-legged frog habitat.
5. Identify drainages that are appropriate to withdraw from mining and land actions (disposal) within California red-legged frog core areas and other areas that have been identified as important habitat, such as connectivity areas between core areas.

6. Maintain updated maps of known California red-legged frog populations and purchase conservation easements or parcels from willing sellers where acquisitions may protect these populations.
7. Within suitable habitat of the California red-legged frog, create, enhance, and protect existing habitat: Create ponds within existing grazing allotments and other suitable areas; enhance existing ponds by re-engineering to allow draining; and consider scooping out existing ponds that have filled in and partially filling ponds that support bullfrogs. Refer to Recovery Plan Appendix to determine suitable pond design. The highest priority for creation and enhancement should be within 2 miles of existing populations.
8. Within watersheds, identify suitable habitat that includes a mosaic of breeding habitat interspersed with a matrix of barrier free dispersal habitat. For the California red-legged frog, this is optimally in the form of pond complexes⁴. For the foothill yellow-legged frog, this is in the form of protected streambed and riparian edge.
9. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities within suitable habitat for the species.
10. Develop and implement timber harvest guidelines to reduce the adverse effects of timber harvest activities on the California red-legged frog and foothill yellow-legged frog and their habitat.
11. Test grazing strategies to determine grazing regimes that are most compatible with California red-legged frog breeding, survival, and habitat suitability. Develop and implement grazing guidelines or enhance existing guidelines for public lands which have been identified as having habitat quality concerns due to livestock grazing or lack of livestock grazing.
12. Develop and implement watershed management and protection plans for each watershed. The Calaveras River Watershed, Mokelumne River Watershed, Upper Yuba Watershed, Merced River Watershed, and Spivey Pond (North Fork Weber Creek) will receive the highest priority for developing such plans, because these areas are focal areas conducive to recovery of the California red-legged frog. These include lands within recovery core areas, lands with several adjoining grazing leases, watersheds with existing populations, and areas with large, contiguous BLM ownership.
13. Once suitable areas are identified and partnerships are formed, identify repatriation areas and reintroduce California red-legged frogs in collaboration with FWS.

⁴ Pond complexes ideally include 3 ponds within 1 1/4 miles. Dense chaparral habitat is considered unsuitable for the frogs. However chaparral with interspersed grasslands would be acceptable habitat within a pond complex.

14. Examine funding and partnerships: Partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include lessees, California Cattlemen's Association, The Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, and California Department of Fish and Game, California Rangelands Trust, Packard Foundation.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid yellow-legged and red-legged frog breeding periods where suitable breeding habitat exists.
2. Identify opportunities to protect and conserve red-legged frogs and their habitats.
3. Refer to the watershed management and protection plan in the affected area to identify additional protective measures.
4. Stipulation within leases to keep salt blocks, protein blocks, scratch bags, and other dry mineral or pesticide treatments 500 feet from riparian areas and stock ponds.
5. Stipulation within leases to keep livestock that have been dipped with pesticides or that have received chemical hoof treatments off the allotment for a minimum of two weeks.
6. Develop and implement best management practices to prevent or minimize adverse impacts to California red-legged frogs from in-stream and stream bank activities associated with mining operations. Identify streams for which in-stream and stream bank activities associated with mining threaten habitat suitability for California red-legged frogs and foothill yellow-legged frog.
7. Follow sterilization protocol in goal #3 identified above.
8. During land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
9. Incorporate existing BLM guidelines of no retardant within 300 feet of wetlands. If possible within core areas, avoid retardant drops within 500 feet of wetlands.
10. Avoid drafting water out of Spivey Pond during fire fighting.
11. Develop vegetation management plan in consultation with FWS at Spivey Pond.
12. As a lower priority, address wild pig problem.

13. Minimize the loss of yellow-legged and red-legged frog habitats and avoid long-term habitat degradation, including red-legged frog estivation habitat.

Giant Garter Snake (*Thamnophis gigas*) Conservation Strategy

Objective

To sustain and manage a viable population of the giant garter snake (GGS) at the Cosumnes River Preserve (preserve) through conservation and management of GGS estivation, hibernation, and foraging habitats in the lower Cosumnes River watershed (lower watershed), South and West of Sloughouse.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Within the Lower Cosumnes Watershed, create, enhance, and acquire habitat, and protect existing habitat.
2. Protect the Valinsen Ranch population of GGS through monitoring, pond and range management, and research.
3. Create flood refugia adjacent to suitable GGS habitat in the lower watershed, and allow the refugia to become occupied by burrowing mammals.
4. Collaborate with The Nature Conservancy to develop management strategies for Ludwigia to optimize GGS basking and foraging habitat.
5. Rotate perennial ponds to seasonal ponds periodically to remove non-native, predatory fish that could impact GGS populations by removing suitable forage species and preying on GGS young. Include retention of sustained perennial ponds adjacent to drained perennial pond as a required component of pond management, to provide displaced GGS with suitable foraging habitat and to protect them from the hazards of migrating out of former habitat in search of prey.
6. Collaborate with FWS during the development of the Cosumnes River Preserve Management Plan. The plan should reflect management and ecosystem needs of the GGS and address the following factors: (a) minimize the loss of GGS habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management activities to avoid impacts to GGS estivation, hibernation, and foraging areas; and (c) identify and remove any non-native plant species that threaten habitat suitability.
7. Test grazing strategies to determine grazing regimes that are most compatible with GGS breeding and survival and habitat suitability, and develop and

- implement grazing guidelines or enhance existing guidelines for lands within the Cosumnes River Preserve which have been identified as having habitat quality concerns due to livestock grazing or lack of livestock grazing.
8. Adhere to the impact assessment guidance below (page 2) and avoidance of adverse impacts guidance (page 3) when planning activities within suitable habitat for the species.
 9. Develop maintenance guidelines (for example road work, mowing, ditch work, pond draining) in partnership with FWS, to reduce adverse effects of routine maintenance on giant garter snakes and their habitat.
 10. Develop Memoranda of Agreement with neighbors and partners in the Cosumnes River watershed establishing a limit on selenium supplements in cattle feed to 0.1 parts per million to reduce Selenium outflow into GGS habitat and the San Joaquin River Delta.
 11. Allow for GGS research regarding genetics, population dynamics, response to pond management and grazing, mortality factors, distribution, and viability analysis.
 12. Examine funding and partnerships: Partnerships with lessees, California Cattlemen's Association, land trust organizations, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, NRCS (Natural Resources Conservation Service), and CDFG. Grants from California Rangelands Trust, Packard Foundation, and other funding sources. (BLM to adjust/modify this list to reflect partnership associations.)

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of GGS hibernation, estivation, and foraging habitat when planning actions in habitat in the lower watershed. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided GGS habitat within or adjacent to the project area as Environmentally Sensitive Areas. These areas should be avoided by all construction personnel.
2. Avoid construction activities within 1000 (*check this figure) feet from the banks of GGS aquatic habitat, unless formal consultation with the FWS has been

completed on the action. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.

3. Avoid mowing with blades or chains within 1000 feet (ck*) of GGS aquatic habitat, and utilize monofilament mowers in this area whenever mowing is required in estivation habitat (uplands adjacent to perennial water).
4. Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for GGS and direct mortality is lessened because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize or avoid mortality.
5. Construction personnel must receive Service-approved worker environmental awareness training prior to working in GGS habitat. This training instructs workers to recognize the snake and its habitat(s) and is intended to protect the workers from accidentally harming or killing the species.
6. 24-hours prior to construction activities, the project area should be surveyed for GGS. The survey of the project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a GGS is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6620.
7. Any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
8. After completion of construction activities, BLM will ensure removal of any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.
9. Identify and consider neighboring land use impacts on hibernation, estivation, and foraging habitat and integrate protective measures as appropriate or necessary

California Horned Lizard (*Phrynosoma coronatum frontale*) Conservation Strategy

Objective

To sustain and manage viable populations of the California horned lizard by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing adverse impacts to the species.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Protect known populations of California horned lizard through monitoring, habitat management (OHV closure, restoration, fire restrictions, etc.), and research, with a particular emphasis on the Pine Hill Preserve population. Monitoring and research efforts should include both California horned lizard and ants (native ant protection and Argentine ant control).
2. Acquire additional California horned lizard habitat in the Carbondale-Mesa area and other suitable areas as populations are detected.
3. Adopt modified fire suppression plans for ecosystems that support the California horned lizard and associated rare plants, which includes restrictions on the use of heavy equipment for fire suppression. Footnote: Refer to the plant strategy for more details.
4. Utilize research results for adaptive management.
5. Adhere to the impact assessment guidance below (page 3) and avoidance of adverse impacts guidance (page 3) when planning activities within suitable habitat for the species.
6. Identify and map potential California horned lizard habitat.
7. Add the Carbondale-Mesa 20-acre parcel to the Ione manzanita ACEC.
8. Support research regarding the geographic range of the California horned lizard on public land, natural history, specific breeding requirements, and protection against Argentine ant infestations (deny all research requests that involve introduction of Argentine ants).
9. Restrict the use of pesticides in or near California horned lizard habitat, unless pesticides are necessary for conservation of the species.
10. Leave large rocks and downed logs in place for predator protection, basking, and hibernation, except in urban-interface fuel breaks.
11. Where native ants and appropriate soils exist, create microhabitats by making clearings in riparian woodlands or by establishing trails or fuel breaks.
12. Coordinate with CDF to eliminate the use of retardants that contain cyanide.
13. Examine funding and partnerships: Partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include The

Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, California Department of Fish and Game, and Packard Foundation.

14. Provide California horned lizard education programs where/when needed by posting signs, handing out published material, or offering presentations.
15. If prescribed fire is to be used on the Pine Hill Preserve, consider incorporating into a burn plan beneficial components for the California horned lizard (i.e. fire can be used to create microhabitats that enhance California horned lizard habitat).
16. Maintain burrowing mammal populations (horned lizards use mammal burrows for protection and winter hibernation, although they can also construct their own burrows).
17. Educate private landowners adjacent to California horned lizard habitat about the deleterious effects of pesticides and provide alternatives for pest removal.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of California horned lizard habitat when planning actions.
2. Although creating clearings in vegetation can enhance California horned lizard habitat, conserve enough vegetation to allow for protection against predators and extreme heat.
3. When planning projects, allow for a substantial amount of rocks and downed logs to be left in place for predator protection, basking, and hibernation.
4. Plan and schedule short-term and long-term land management activities to avoid California horned lizard breeding periods (May-August) where suitable breeding habitat exists.
5. Identify and consider neighboring land use impacts on sensitive habitats and integrate protective measures as appropriate or necessary.
6. Identify opportunities to protect and conserve California horned lizards and their habitats.

7. When addressing vegetation management on the Pine Hill Preserve and Lone Manzanita ACEC, consider alternatives that will enhance California horned lizard habitat.
8. Minimize the loss of California horned lizard habitats and avoid long-term habitat degradation.
9. During the land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.

Limestone Salamander (*Hydromantes brunus*) Conservation Strategy

Objectives

1. Prevent all surface disturbing activities which would alter or degrade confirmed or potential limestone salamander habitat on BLM lands.
2. Maintain vegetative cover in the Area of Critical Environmental Concern (ACEC) within specification outlined in the *Management Plan for the Limestone Salamander Area of Critical Environmental Concern* (ACEC Management Plan) (Lehman 1989).
3. Identify additional limestone salamander occurrences and consolidate BLM holdings within the species' range. Adjust ACEC boundaries as necessary to increase habitat protection.
4. Promote public use values in the ACEC which are compatible with general wildland management goals and which do not conflict with the limestone salamander's habitat needs. Integrate management of the ACEC with other BLM programs in the Merced River corridor to meet this objective.

Prioritized Goals

1. Purchase conservation easements or parcels from willing sellers where acquisitions may protect existing occurrences. Top priority will be the purchase or exchange of 320 acres of land in Hell Hollow, containing four confirmed limestone salamander occurrences.
2. Coordinate with all agencies with fire protection or support responsibility in the ACEC to avoid the use of toxic retardants within 500 feet of habitat.
3. Amend current ACEC boundaries to include one confirmed limestone salamander occurrence site which is Bureau-administered but lies outside existing ACEC boundaries. Add to the ACEC a 160-acre parcel defined as the SW 1/4 of Section 6, T.4S, R.17E., MDM. In the future, amend ACEC boundaries as necessary to include other limestone salamander occurrences on BLM land.

4. Permit no land tenure adjustments which would reduce or adversely affect BLM's manageable land base in the ACEC.
5. Permit no surface disturbing activities within confirmed or potential limestone salamander habitats. (find out if BLM allows strip mining) Coordinate with mining claimants operating within the ACEC, through Plans of Operations and on-site inspections, to mitigate potential impacts to limestone salamanders resulting from mineral exploration and development.
6. Approve no utility rights-of-way in the ACEC without review, analysis, and mitigation of potential impacts to limestone salamanders.
7. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities within suitable habitat for the species.
8. Allow no new road rights-of-way which would improve or encourage access to the ACEC, unless they are necessary for access to existing or approved developments. With the exception of BLM's primary access road on the north side of the Merced River, maintain existing roads in their current primitive conditions.
9. Designate the Limestone Salamander ACEC as a priority fire suppression area. Advise all agencies with fire protection or support responsibility in the ACEC and amend all existing cooperative fire protection agreements, protection plans, and prescribed burn plans of and between these agencies with regard to suppression priorities and special procedures.
10. Permit no commercial or domestic fuelwood cutting in the ACEC.
11. Inventory all suitable but unconfirmed habitat on BLM lands for the presence of limestone salamanders.
12. Permit no commercial timber harvesting in the ACEC.
13. Examine funding and partnerships with private parties, local, state, and federal agencies, and conservation organizations.

Avoidance of Adverse Impacts

1. Plan land management activities to avoid limestone salamander habitat, when possible, in and adjacent to known and potential occurrences. When habitat cannot be avoided, schedule activities when salamanders are not active on the surface (during the dry season).
2. Minimize loss of limestone salamander habitats and avoid long-term habitat degradation.

3. Include a stipulation within leases to keep salt blocks, protein blocks, scratch bags, and other dry mineral or pesticide treatments on BLM land at least 500 feet from riparian areas and stock ponds (check regs to see about pesticide use on range allotments).
4. Stipulate within leases to keep livestock that have been dipped with pesticides or that have received chemical hoof treatments off the allotment for a minimum of two weeks.
5. Prohibit the use of pesticides, herbicides, or other biocides or toxicants which could adversely affect limestone salamanders or their prey base.
6. Develop and implement best management practices to prevent or minimize adverse impacts to limestone salamanders from access and related activities associated with mining operations. Identify habitat for which access associated with mining could threaten habitat suitability for the limestone salamander.
7. During land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
8. Avoid retardant within 500 feet of known occurrences and potential habitat.
9. Follow the Fire Management Guidance in the ACEC described in Appendix IV of the ACEC Management Plan.
10. Allow prescribed burning for range and wildlife habitat improvements in the ACEC only in accordance with the guidelines described in Appendix IV of the ACEC Management Plan (attached X).

Pacific Fisher (*Martes pennanti*) Conservation Strategy

Objective

To sustain and manage the mixed evergreen forest ecosystem to such an extent as to support viable populations of the Pacific fisher (fisher), through conservation of denning, resting, and foraging habitats on BLM lands.

Prioritized Goals

1. The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.
2. Identify and map potential denning areas and old growth forests using GIS.
3. Hold Pacific fisher habitat in BLM authority, with priority on resting, foraging, and denning sites, and manage those areas appropriately for fisher requirements and survival.

4. In the mixed evergreen forest, manage habitat within 500 feet of riparian areas to support at least one 36-inch diameter-at-breast-height (dbh) tree per acre, and at least one snag of similar or greater diameter. If the forest will not generate trees of 36 inches dbh, then manage the forest to retain at least the largest snag and the largest live green tree per acre. Adjust the 500-foot requirement as information on fisher reproductive biology relative to disturbance becomes available.
5. Maintain forested lands with four trees of 32 inches dbh or greater (or, if not available, the four largest trees), one wolf tree, and the two largest snags per acre.
6. Limit activities within 500 feet of den trees to actions designed to improve the suitability of the denning area. Adjust the 500-foot requirement as information on fisher reproductive biology relative to disturbance becomes available.
7. Allow for viable prey populations, including reestablishment of porcupines.
8. Provide for connectivity between pacific fisher habitat on BLM and USFS lands when possible.
9. Adhere to the impact assessment guidance below (page 2) and avoidance of adverse impacts guidance (pages 3) when planning activities within suitable habitat for pacific fishers.
10. Reduce risk of stand-replacing wildfire using mechanical thinning and/or prescribed fire at a rate no greater than 5 percent surface area per year, and not to exceed 20 percent in ten years, within pacific fisher habitat. Fuel breaks should not be constructed within forested areas and should be restricted to widening of existing residential access roads.
11. Fisher resting, foraging, and denning habitat areas located on private land will be considered a priority when addressing acquisition of parcels. Potential fisher habitat corridors that may link the isolated populations will also be identified as important for acquisition; however, acquisition will only be conducted with willing sellers. Explore the use of conservation easements to protect sensitive fisher habitat located on private lands.
12. Coordinate with the Forest Service on efforts to conduct fuels treatments within pacific fisher habitat for BLM lands containing a shared property line with the Forest Service.
13. Provide Pacific fisher education programs where/when needed by posting signs, handing out published material, and offering presentations.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number

of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary.
2. Minimize, to the extent feasible, loss of fisher habitats and avoid long-term habitat degradation.
3. Plan and schedule short-term and long-term land management activities to avoid important fisher denning, foraging, and resting areas, particularly during crucial breeding and wintering periods.
4. Through cooperative efforts, develop inventory and monitoring at crucial breeding and wintering sites.
5. Identify opportunities to protect and conserve fishers and their habitats.

Program Specific Avoidance Measures

Fire

Wildfire: Identify important resting and denning sites in the Field Office Area and include as priority avoidance locality in the Fire Management Plan. Near important sites, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical. Avoid cutting trees that meet the requirements for resting sites (conifers with a dbh of 30 inches or greater and oaks with a dbh of 9 inches or greater) or denning sites (conifers with a dbh of 31 inches or greater and oaks with a dbh of 24 inches or greater). Canopy closure should remain at 88% for potential resting areas and 80% at potential denning areas when possible. Large snags should be left in place if possible. Avoid application and drift of chemical retardants and ignition devices near known den sites if possible. Avoid fuel treatments in den site buffers⁵ to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels over 85 percent of the treatment unit to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning or piled debris is allowed (Sierra Nevada Forest Plan Amendment, 2001).

Maintenance, rehabilitation and/or habitat restoration: Disturbances such as thinning, planting, and other rehabilitation measures should be avoided within den site buffers if possible. Reseeding and erosion control measures should be taken. Large downed logs should be left in place as they may be used for resting or denning sites.

⁵ Fisher den sites are defined as 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available (Sierra Nevada Forest Plan Amendment, 2001).

Prescribed Fire: Forest and fuel break clearing activities will consider avoiding trees with resting or denning characteristics. Removal of limbs will only take place on portions of hazardous trees in order to maintain a thick canopy. Avoid prescribed fires and using ignition devices in identified den site buffers. Seasonally restrict prescribed fire between March 1 and June 30 near identified natal and maternal dens. Minimize smoke and fire impacts if they must occur during biologically critical times of the year. Attempt to establish fire breaks with the least amount of removal of snags and large trees.

Recreation

Develop appropriate management plans to address recreation activities including seasonal restrictions, group size, duration, and repetition restrictions. Evaluate areas with existing or potential fisher habitat for conflicts of use and determine appropriate management schemes (seasonal restrictions, etc.). Areas of concern would be late seral stage forests, forests with dense canopies, riparian corridors, and large wooded areas (with large snags). Provide access control, such as road closures and trail re-routing, to protect fisher resting, denning, or foraging sites from vandalism and disturbance.

Rights-of-Way

Avoid removal of trees and snags with appropriate resting or denning characteristics unless the tree is particularly hazardous. If possible, limb a hazardous tree instead of removing it. Include seasonal restrictions within den site buffers (March 1 - June 30). Avoid constructing roads near fisher habitat. If a road must be built, attempt to build the road on the outskirts of the habitat to avoid forest fragmentation.

Timber, Shrub, Grassland, Riparian, & other land management

Avoid removal of trees and snags with resting or denning characteristics and consider habitat enhancements for lost sites, such as snag creation. Maintain a canopy closure of 88% in potential resting habitat and 80% in potential denning habitat. If possible, avoid making logging roads which may result in forest fragmentation. Riparian areas that may serve as potential corridors should be maintained, restored, and enhanced where possible. Native plant revegetation projects should be implemented when appropriate. Snag density and characteristics should be periodically monitored.

Red Hills Roach Conservation Strategy

Objective

To sustain and manage viable populations of the Red Hills roach by managing factors affecting the distribution, abundance, and quality of habitat of this species, and by minimizing adverse impacts to the species.

Prioritized Goals

1. Reduce sedimentation from roads that may be impacting Red Hills Roach and other sensitive species. Examples include but are not limited to sections of Serpentine Loop Road.
2. Update the Fire Suppression Plan to include avoidance of use of heavy equipment in riparian areas in the Fire Suppression Plan.
3. Include area on East side of Don Pedro as part of the ACEC. This area has recently been surveyed and found to contain Red Hills roach as well as rare plants.
4. Establish trail construction standards that include riparian and sensitive species buffers.
5. Establish trail maintenance standards to minimize erosion, and sediment delivery into riparian systems.
6. Withdraw the Red Hills ACEC from mineral entries.
7. Adhere to Impact Assessment below (page 1) and Avoidance of Adverse Impacts Guidance (page 2) when planning activities within suitable habitat for the species.
8. Support research to determine the geographic range of the Red Hills roach on public land.
9. Take measures, such as fencing, to reduce riparian degradation on the remaining grazing lease in the Red Hills.
10. Continue to comment as a concerned landowner regarding private/local government uses or proposals that may be contributing to water quality degradation in the Red Hills.
11. Continue acquisition of properties adjacent to the Red Hills that appear important to the Red Hills roach.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of Red Hills roach habitat when planning actions.

2. Identify and consider neighboring land use impacts on sensitive habitats and integrate protective measures as appropriate or necessary.
3. Identify opportunities to protect and conserve Red Hills roach and their habitats.
4. Minimize the loss of Red Hills roach habitat and avoid long-term habitat degradation.
5. During the land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
6. Incorporate existing BLM guidelines of no retardant within 300 feet of waterways. If possible, near known spawning locations and the tributaries utilized by the fish to get there, avoid retardant drops within 500 feet of the waterway. Protection of human life and property will take precedence over habitat protection during a wild fire.
7. Minimize the loss of roach spawning habitats and avoid long-term habitat degradation, including migration habitat.

Wetland & Riparian Bird Conservation Strategies

Objectives

To sustain and manage viable populations of 8 different riparian and wetland bird species (See Table 1) on BLM lands within the Folsom Field Office area. Where some of these species historically but no longer occur, create habitat conditions that could possibly support the species again, especially at areas such as the Cosumnes River Preserve.

Prioritized Goals

1. Identify major areas of suitable habitat for all listed and special status species located on private lands, adjacent to the Cosumnes River Preserve, as potential acquisition parcels. Acquisition will only be conducted on a willing seller basis.
2. Preserve, enhance, and restore habitat when and where appropriate. Restoration and protection sites should be prioritized by (a) ability to restore the natural hydrology of the area; (b) location of sites within potential dispersal range of existing source populations for declining species; (c) the ability to protect and manage adjacent upland habitats for foraging, flood refugia, and/or nesting habitat; and (d) the extent to which land use within 7-12 Km from the riparian corridor can be influenced or is likely to remain under management that encourages or maintains a high productivity of birds. Prioritize habitat protection/restoration sites according to the matrix of surrounding land use within the watershed. To the extent possible, restore width of the riparian corridor to its historical width. Design and implement restoration projects that are consistent with the Point Reyes Bird Observatory Partners-In-Flight Conservation Strategies for Riparian Birds.

3. Use conservation easements, as appropriate, to protect sensitive bird nesting territories and potential habitat areas located on private lands adjacent to BLM land.
4. Protect, enhance or recreate natural riparian processes, particularly hydrology and associated high-water events, to promote the natural cycle of channel movement, sediment deposition, and scouring that create a diverse mosaic of riparian vegetation types. Continue using natural process restoration to promote regeneration of riparian habitat. Examples include levee setbacks and levee breaches.
5. Encourage and/or support research on population viability to include modeling of patch size, configuration, and connectivity of restored riparian habitats to support populations of riparian-dependent birds. Utilize adaptive management to ensure that patch sizes do not fall below the minimum necessary to support populations based on (a) territory size requirements; (b) community dynamics; and (c) sensitivity of some species to fragmentation and edge effects.
6. With regards to grazing management: (a) monitor grazing impacts to important riparian and wetland areas for special status bird species; (b) manage grazing intensity or location to ensure riparian deciduous shrubs are not high-lined and that recruitment of young riparian shrubs occurs; (c) protect areas where grazing may be drying meadows by soil compaction and gullyng; (d) implement grazing standards that, if met, will maintain proper hydrologic function; (e) manage livestock so that aggregations of livestock do not occur near SWWF, LBVI or other special status low nesting riparian bird nest sites; (f) allow no new construction of facilities such as corrals, troughs, and salt licks, which concentrate livestock, within 3-6 miles of areas managed for southwestern willow flycatcher and least Bell's vireo; and (g) in areas with year-round grazing in riparian zones, establish relatively wide riparian pastures (at least 200 meters wide in the Central Valley and foothill riparian habitats) that allow for precise management of the intensity and timing of livestock grazing.
7. Continue to promote bird-friendly agricultural practices at the CRP such as optimum timing of rice harvest, optimum timing of flooding of the rice fields, organic farming, leaving fields fallow with rice stubble, and producing feed fields (These are fields where a crop is produced then knocked down but left unharvested for the birds to eat).
8. Continue beneficial water management for the greater sandhill crane and other wetland birds.
9. Encourage underground placement of power lines in wetland areas to protect greater sandhill crane.
10. Manage riparian and adjacent habitats to maintain a diverse and vigorous understory and herbaceous layer, particularly during the breeding season.

11. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities within suitable habitat for the species.
12. Prioritize sites for bird inventories and monitoring and survey for occurrences of special status riparian/wetland birds within the Folsom Field Office by evaluating existing data or conducting on-site surveys. Bird inventories should be conducted in wetland and riparian habitats. These habitats would be prioritized in the following order: cottonwood-willow gallery riparian forests, large willow complexes, wetland areas, mixed forest/riparian habitat, and narrow riparian corridors.
13. Determine location and distribution of important riparian/wetland habitat components, including nesting sites, potential foraging areas, and natural and artificial water sources. Compile data on bird foraging and nesting sites within field office boundaries. Treat bird nest and territory location information as confidential.
14. Work cooperatively with agricultural research units at critical locations within the field area to promote “bird friendly” agricultural practices. Issues to consider include the following: (a) techniques for minimizing or eliminating cowbird foraging habitat (e.g., cover crops); (b) effects of pesticides, alternatives to pesticides, or changes in use of pesticides; (c) row crop versus permanent crops as buffers; and (d) creating habitat within a farming system through the use of hedgerows, tailwater ponds, hill ponds, irrigation canal and levee revegetation, and roadside buffer strips.
15. Manage or create "soft" edges (through establishment of hedgerows at field margins) appropriate to historical vegetation patterns.
16. Consider neighboring land use impacts on sensitive nesting sites and integrate protective measures as appropriate or necessary. Encourage neighbors to use a groundcover in orchards and vineyards to discourage foraging by brown-headed cowbirds and increase productivity. Use of a native species groundcover is preferable, but only if this vegetation will be managed either (a) to avoid mowing through the nesting season or (b) to be mown to 6 inches to discourage use by nesting birds.
17. At the Cosumnes River Preserve, maintain water levels to minimize nest predation by mammals on tri-colored blackbird.
18. Consider access control, such as road closures and trail re-routing, which may be needed to protect occupied and suitable habitat areas from disturbance. The Sierra Nevada Forest Plan Amendment discusses access restrictions or low impact recreational activities in or adjacent to yellow-billed cuckoo territory (USDA 2001).

19. Provide education programs where/when needed by signing, handing out of published material and presentations.

Avoidance of Adverse Impacts

1. An essential component of conservation is avoiding impacts to individuals and habitats that are needed for survival and recovery of the species'. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species' will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.
2. Minimize, to the extent feasible, and mitigate for the loss of riparian/wetland habitats, and avoid long-term habitat/water quality degradation.
3. Avoid application and drift of chemical retardants and ignition substances near known nest sites and water bodies (rivers, ponds and still water) during wild fire control and prescribed burning.
4. Water sources such as canals and ponds should be tested for water quality and contamination. If water is at a toxic level, ponds may need to be covered.
5. Avoid removal of trees, shrubs and herbaceous vegetation, with appropriate nesting characteristics, unless appropriate mitigation is developed.
6. Withdraw lands containing important riparian habitat and known nesting sites of listed bird species from the general land laws (mining claims, disposal, exchange etc.).
7. The use of pesticides in the Folsom Field Office area is extremely limited. Before using pesticides, consideration should be made of the agents' potential impacts to nesting and foraging birds. Use of alternative pest control methods including insectivorous wildlife (birds, birds, reptiles and amphibians), green manures, crop covers, alternative crop types and rotations, should be considered. The labeled/prescribed use, amount and schedule of pesticide/herbicide application should be closely adhered and monitored.
8. Avoid removal of riparian vegetation and/or altering important nesting and foraging habitat characteristics. Avoid upland activities (timber harvest/thinning) that will affect the riparian corridor and channel conditions. The Folsom Field Office does not have much of a timber program and protection of riparian habitat would be a priority in any planning project.
9. Plan and schedule short-term and long-term land management activities to avoid important nesting areas during the breeding period.
10. Use groundcover crops in orchards and vineyards to minimize cowbird foraging habitat. Mowing of groundcover should be limited during the breeding season.

11. Forest and fuel break clearing activities will consider seasonal restrictions and protecting habitat components prior to and during the nesting season. Removing/burning groundcover in riparian habitats should be conducted after the end of breeding season. If burning activities are planned to occur during the breeding season, management should be prepared to develop methods (mowing) to keep herb layer from growing thick and tall enough to attract nesting birds prior to the nesting season and planned burn activities. Partners In Flight recommend keeping vegetation at 6 inches or lower to prevent SWWF from starting to nest.
12. If listed or other special status species are located within a close proximity of current or planned mining activities seasonal restrictions may need to be incorporated in project practices (air quality, water quality, noise and light pollution). Even single mining/dredging projects within the river channel, located near occupied sites for the SWWF, YBCU, or LBVI should be restricted during the breeding season.
13. Road and/or bridge construction/repair within known territories should be avoided during the breeding/nesting season.

**Riparian Woodrat (*Neotoma fuscipes riparia*) and
Riparian Brush Rabbit (*Sylvilagus bachmani riparius*)
Conservation Strategy**

Objective

To sustain and manage the riparian forest ecosystem to such an extent as to support a viable population of the riparian woodrat (woodrat) and riparian brush rabbit (brush rabbit) at the Cosumnes River Preserve (preserve), through introduction or reintroduction and through conservation and management of riparian forest habitat in the lower Cosumnes River watershed (lower watershed), south and west of Sloughhouse.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Update the Cosumnes River Preserve Management Plan to reflect management and ecosystem needs of the woodrat and brush rabbit by appending this strategy to the plan.
2. Address the following factors in all planning documents that address Valley Riparian habitat management: (a) minimize the loss of potential woodrat and brush rabbit habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management activities to enhance potential woodrat and brush rabbit habitat; and (c) identify and remove any non-native predators that threaten survivorship of the species. This applies to all planning documents that

- are currently in preparation and to existing documents that will be updated, or will have this strategy appended to them.
3. Establish a program to remove feral cat and black rat populations from the preserve, and identify other non-native predators that could impact native mammal populations.
 4. Develop an emergency fire response plan for the “giant forest” at the preserve, to protect riparian habitat from catastrophic fire⁶.
 5. Conduct, or allow to be conducted, extensive surveys to identify the status of the woodrat and brush rabbit on the preserve⁷.
 6. Create flood refugia adjacent to suitable woodrat and brush rabbit habitat in the lower watershed at a minimum of three locations, and allow vegetation—including oak, willow, wild rose, ceanothus, and California blackberry—to overgrow the refugia.
 7. Eradicate non-native blackberry in the giant forest.
 8. Within the lower watershed, continue to acquire habitat and restorable habitat in a manner consistent with the existing riparian restoration goals of the preserve.
 9. Continue to restore and enhance riparian habitat in a manner consistent with the existing riparian restoration goals of the preserve.
 10. Continue to facilitate and partner in riparian woodrat and brush rabbit research, with emphasis on: (a) surveys to determine range of the species, (b) determination of which subspecies was most likely to have occurred along the Cosumnes River (c) genetics, (d) population dynamics, (e) response to vegetation and fuels management, (f) mortality factors, and (g) viability analysis.
 11. Determine the role these species played in the ecosystem and determine whether the appropriate species to fill the role are the listed entities or closely related subspecies that are not listed.
 12. Partner in reestablishment plans for these species that may include the above research or additional research to support the biological needs involved in a reestablishment effort.
 13. Develop maintenance guidelines, in partnership with FWS, to reduce adverse effects of routine maintenance on woodrat and brush rabbit habitat.

⁶ This can be modeled after the FWS-approved plan for Caswell State Park.

⁷ Survey results will be used to determine the correct subspecies to reestablish in the riparian ecosystem at the preserve and to protect any remaining individuals or remnant populations.

14. Collaborate with FWS in establishing management directions for the species.
15. Examine funding and partnerships.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of woodrat and brush rabbit habitat when planning actions in habitat in the lower watershed. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided woodrat and brush rabbit habitat within or adjacent to the project area as Environmentally Sensitive Areas. These areas should be avoided by all construction personnel.
2. Avoid construction activities in, or within 1000 feet of, woodrat and brush rabbit habitat, unless consultation with the FWS has been completed on the action. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
3. Construction personnel should receive FWS-approved worker environmental awareness training prior to working in woodrat and brush rabbit habitat. This training instructs workers to recognize these mammals and their habitat and is intended to protect the workers from accidentally harming or killing the species.
4. A survey of the project area should be conducted a minimum of 4 weeks prior to construction in, or within 1000 feet of, woodrat or brush rabbit habitat, to determine whether these species or habitat needed by the species are present.
5. Do not commence construction activities within 1000 feet from of woodrat or brush rabbit habitat consultation with the FWS has been completed on the action.
6. If either of these species are encountered during construction, cease all construction-related activities until formal consultation with the FWS has been completed. Report any sightings and any take of these species to the FWS immediately by telephone at (916) 414-6600.
7. After completion of construction activities, BLM will ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting forage or shelter plants and constructing temporary refugia.

Valley Raptor Conservation Strategy for Burrowing owl, *Athene cunicularia*, and Swainson's Hawk, *Buteo swainsoni*

Objective

To sustain and manage a viable population of burrowing owl at the Cosumnes River Preserve through conservation, management, and enhancement of burrowing owl nesting burrows and foraging habitat in the lower Cosumnes River watershed.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective for valley raptors and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Continue acquisition/conservation easements of oak savannah, riparian forests, and grasslands threatened by urbanization and other destructive land uses in the Central Valley.
2. Continue the creation, enhancement, and protection of riparian woodlands for Swainson's Hawk nesting habitat. These riparian areas should be not less than 300' wide, with the successful establishment of native riparian species; such as cottonwoods, oaks, sycamores, and willows.
3. Determine and map burrowing owl nesting burrows and active Swainson's Hawk nests at Cosumnes River Preserve.
4. Where burrowing owls occur, maintain a mosaic of grassland habitat (tall grass for foraging and short grass for nesting and roosting).
5. Develop prescribed fire/grazing management in grassland areas where burrowing owls occur to maintain/create suitable habitat by reducing vegetation around existing/potential nest sites. Mowing may substitute in areas where prescribed burning and grazing can not be used, and where it is deemed necessary to maintain habitat.
6. Include avoidance measure #3 in conservation easements and specify the use of insecticides with the lowest toxicity to nontarget species.
7. In conservation easements on rangeland, specify that no rodent control will be allowed.
8. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities within suitable habitat for the species.
9. Install and evaluate the use of artificial burrows at Cosumnes River Preserve when nearby activity on private land has destroyed a significant number of burrowing owl nest burrows.

10. Encourage the reduction or restriction of the use of pesticides. Encourage neighboring landowners to use insecticides with the lowest toxicity to nontarget species.
11. Discourage rodent control on neighboring lands. Suggest restricting the timing of control activities to avoid the period when burrowing owls choose nest sites and are nesting. Suggest that traps, poisoned meats, or poisoned grains not be used. Instead, burrows unoccupied by burrowing owls or other special status species should be fumigated.
12. Encourage/educate neighboring farmers about planting crops which are compatible with the foraging needs of Swainson's Hawks. Also encourage the preservation of isolated trees in the midst of cultivated land.
13. Support research related to breeding success, contaminants, dispersal, movement, mortality, habitat use, and other topics.
14. Develop an educational program for private landowners and the general public about the benefits of protecting habitat for both species and for burrowing mammals, and the negative effects of insecticides and rodenticides.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.
2. Conserve the maximum amount of valley raptor habitat when planning actions in habitat. Minimize, to the extent feasible, loss of valley raptor habitats and avoid long-term habitat degradation.
3. Pesticides will not be sprayed within 400-600 meters of burrowing owl nest burrows during the breeding season.
4. Seasonally restrict all management activities that could potentially impact nesting raptors between March 1 and August 15 within ½ mile of active nest sites.
5. Identify avoidance areas based on survey results.
6. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project

conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native seed mix.

7. Near nesting burrows/sites, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical.
8. Burrowing owl nesting burrows occupied within the past 3 years will not be destroyed.
9. Design projects to minimize mortality to valley raptors.
10. Avoid direct or indirect impacts to Swainson's Hawk nesting trees.
11. Maintain a 10-mile radius buffer zone around active Swainson's Hawk nest trees.

Valley Elderberry Longhorn Beetle Conservation Strategy

Objectives

- To sustain existing VELB populations on BLM land throughout the Folsom Field Office.
- To sustain and manage viable habitat for Valley elderberry longhorn beetle (VELB) through conservation and management of its host plant, elderberry bushes, throughout the Folsom Field Office.

Prioritized Goals

1. Map valley elderberry on BLM Folsom land and identify the most important VELB populations.
2. Retain in federal ownership known VELB population sites.
3. Develop an "Appended Programmatic" for elderberry plants in remote or isolated locale (this gets conservation plantings planted in advance of impacts and streamlined consultation for individual projects). *Note: the appended programmatic will deal with ROWs, on-going conservation/restoration efforts, fuels treatments, mining, facility maintenance, grazing, and agriculture.*
4. Continue the creation or enhancement of riparian woodlands. Emphasize native plantings including elderberry bushes where appropriate.
5. Continue acquisition/conservation easements of oak savannah and riparian forests threatened by urbanization and other destructive land uses in the Central Valley.
6. Adhere to the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (FWS publication).

7. Adhere to the impact assessment (page 2) and avoidance of adverse impacts (page 3).
8. Support VELB research that is pertinent to its ecological requirements and management needs.
9. Research (literature search) best management practices to control exotic ant species as related to VELB, with an emphasis on Argentine and Fire ants.
10. In conservation easements for VELB specify avoidance measures related to buffer zones, chemicals, and mowing. In conservation easements for other species where VELB is present, negotiate or consider these avoidance measures. See avoidance measures below.
11. Remove exotic plants such as Chinese tree-of-heaven in areas where elderberry is being displaced by exotic species. Note: In cultural areas, it may not be possible to remove Chinese tree-of-heaven, fig, or other culturally significant species.
12. Develop an educational program for private landowners and the general public in order to minimize damage to the VELB's host, *Sambucus*.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future. Adhere to the guidelines below unless addressed separately in the Appended Programmatic or through informal consultation.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.
2. Conserve the maximum amount of VELB habitat when planning actions in habitat. Minimize, to the extent feasible, loss of VELB habitats and avoid long-term habitat degradation.
3. Completely avoid disturbances within a 100-foot buffer around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level.
4. Fence and flag all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by the Service, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.
5. Brief contractors/work crews on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.

6. No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.
7. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).
8. Elderberry plants must be transplanted if they can not be avoided by the proposed project. All elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level must be transplanted to a conservation area. Each elderberry stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected must be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio from 1:1 to 8:1. Minimization ratios are listed and explained in Table 1. A mix of native plants associated with the elderberry plants at the project site or similar sites will also be planted in the conservation area at ratios ranging from 1:1 to 2:1 [native tree/plant species to each elderberry seedling or cutting (see Table 1)].
9. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native plantings.

Table 1 Minimization ratios are based on location (riparian vs. non-riparian), stem diameter of affected elderberry plants at ground level, and presence or absence of exit holes

Location	Stems (maximum diameter at ground level)	Exit holes on shrub Y/N (quantity) ⁸	Elderberry Seeding Ratio ⁹	Associated Native Plant Ratio ¹⁰
non-riparian	stems $\geq 1''$ & $\leq 3''$	No: Yes:	1:1 2:1	1:1 2:1
non-riparian	stems $> 3''$ & $< 5''$	No: Yes:	2:1 4:1	1:1 2:1
non-riparian	stems $> 5''$	No: Yes:	3:1 6:1	1:1 2:1

⁸ All stems measuring one inch or greater in diameter at ground level on a single shrub are considered occupied when exit holes are present anywhere on the shrub.

⁹ Ratios in the *Elderberry Seedling Ratio* column correspond to the number of cuttings or seedlings to be planted per elderberry stem (one inch or greater in diameter at ground level) affected by a project.

¹⁰ Ratios in the *Associated Native Plant Ratio* column correspond to the number of associated native species to be planted per elderberry (seedling or cutting) planted.

Table 1 Minimization ratios are based on location (riparian vs. non-riparian), stem diameter of affected elderberry plants at ground level, and presence or absence of exit holes

Location	Stems (maximum diameter at ground level)	Exit holes on shrub Y/N (quantity) ⁸	Elderberry Seeding Ratio ⁹	Associated Native Plant Ratio ¹⁰
riparian	stems $\geq 1''$ & $\leq 3''$	No: Yes:	2:1 4:1	1:1 2:1
riparian	stems $> 3''$ & $< 5''$	No: Yes:	3:1 6:1	1:1 2:1
riparian	stems $> 5''$	No: Yes:	4:1 8:1	1:1 2:1

Valley Grassland and Vernal Pool Conservation Strategy for California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Scaphiopus hammodii*), Vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*),

Objective

To sustain and manage the valley grassland and vernal pool ecosystems within the Folsom Field Office area to support viable populations of the California tiger salamander, western spadefoot toad, vernal pool fairy shrimp and vernal pool tadpole shrimp through management of ecosystem processes and associated species, and through conservation and management of upland, subterranean, and wetland habitats on BLM lands up to 1900 feet in elevation, with greatest conservation emphasis in Tuolumne and Sacramento counties.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short-term, other lesser priorities will be completed.

1. Identify all known and potential vernal pool and associated upland habitat (note: this includes the extent of the hardpan up to a minimum of 100 meters, gravel and clay hills within one mile for western spadefoot toads, ground squirrel burrows within one mile for California tiger salamander, and undisturbed soil profile within 100 meters for ground-nesting bees) on BLM land in the Folsom Field Office by overlaying the Holland vernal pool layers for known and potential vernal pool habitat with the BLM land ownership layer.
2. Maintain a GIS database that includes location information for special status vernal pool species on BLM land.

3. Inventory vernal pool plants, California tiger salamander, western spadefoot toad, and vernal pool crustaceans within the Folsom Field Office Area.
4. Hold vernal pool special status plant, California tiger salamander, western spadefoot toad, and vernal pool crustacean habitat areas in BLM authority (with the exception of the Sunrise Douglas and Shotgun Creek parcels), with priority on holding lands in Sacramento and Tuolumne counties.
5. Identify sites where deleterious non-native species are posing a threat to special status species. Control/eliminate deleterious non-native species (plants, vertebrates) using methods that are determined to be the most effective.
6. Adopt a sterilization protocol for equipment used in vernal pools.
7. Within known California tiger salamander populations, create, enhance, and protect existing habitat: create ponds within existing grazing allotments and other suitable areas; enhance existing ponds if necessary by re-engineering to allow draining; and scoop out existing ponds that have filled in.
8. In conservation easements on rangeland, specify that no rodent control will be allowed.
9. Protect the Tuolumne County Table Mountain vernal pools through monitoring and range management.

Utilize grazing strategies that are most compatible with vernal pool plants, western spadefoot toad, California tiger salamander, and vernal pool crustaceans breeding and survival, and habitat suitability based on the best available information. Take an adaptive management approach to respond to changing habitat conditions.

10. Develop and implement grazing guidelines or enhance existing guidelines for public lands which have been identified as having vernal pool habitat quality concerns due to livestock grazing or lack of livestock grazing. Include pesticide restrictions on dips, wipes, feed additives, and burrow fumigants on BLM lands.
11. Identify vernal pool habitat for special status species for withdrawal from mineral entry. Similarly protect connectivity areas between US Fish and Wildlife Service specified core areas or critical habitat for amphibians.
12. Identify areas where mining would pose a threat to upland habitat for western spadefoot toads and do not allow mineral sales in these areas. If there are locatable minerals involved, seek withdrawal from mineral entry.
13. Vernal pool special status plant, California tiger salamander, western spadefoot toad, and vernal pool crustacean habitat located on private land will be considered a priority when addressing acquisition of parcels. Potential CTS habitat corridors that may link the isolated populations will also be identified as a priority for acquisition. Vernal pool complexes containing western spadefoot toads will be

given highest priority for acquisition. Purchase conservation easements or parcels from willing sellers where acquisitions may protect these populations..

14. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities within suitable habitat for the species.
15. In valley grassland systems, manage habitat to support California ground squirrels. This will include grazing or burning at a level that does not preclude ground squirrels and does not negatively impact special status species in the long term.
16. Dispose of the Sunrise Douglas parcel in Sacramento County and acquire special habitat which will include vernal pool habitat within the FWS service area for vernal pool conservation.
17. Examine funding and partnerships: Partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include lessees, California Cattlemen's Association, The Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, and California Department of Fish and Game, California Rangelands Trust, Packard Foundation.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future. BLM will integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.

Upland avoidance measures

Ground disturbing activities near ground squirrels (*Spermophilus beecheyi*) colonies should be avoided to allow for sustained breeding and persistence of ground squirrels. Clearing of woody vegetation from areas adjacent to ground squirrel colonies should be done by hand if within 200 feet of burrows, and conducted outside of the breeding season of February through June, but may commence after juveniles are detected above ground in numbers at or above the adult population numbers.

Subterranean avoidance measures

- Identify all upland gravels and hills within 1.25 miles of vernal pools that could support burrowing western spadefoot toads. Exclude such areas from mining and gravel extraction.
- Identify subterranean habitat for which mining would threaten habitat suitability for western spadefoot toads and develop and implement best management practices to prevent or minimize adverse impacts to western spadefoot toads from mining operations.

Wetland avoidance measures

1. Do not fill or grade any vernal pools or swales shown to support the California tiger salamander, western spadefoot toad, or vernal pool crustaceans and protect and conserve vernal pools and swales and vernal pool species.
2. Plan and schedule short-term and long-term land management activities to avoid California tiger salamander (November-March) and western spadefoot toad (December-January) breeding seasons within 1000 feet of where suitable breeding habitat exists.
3. Refer to the watershed management and protection plan in the affected area to identify additional protective measures.
4. Include a stipulation within leases to keep salt blocks, protein blocks, scratch bags, and other dry mineral or pesticide treatments 500 feet from riparian areas and stock ponds.
5. Include a stipulation within leases to keep livestock that have been dipped with pesticides or that have received chemical hoof treatments off the allotment for a minimum of two weeks following treatment.
6. Include a stipulation within leases to keep livestock that have been fed pesticides or pupation inhibitors off the allotment for a minimum of two weeks following any treatment.
7. Follow sterilization protocol in goal #3 identified above.
8. Incorporate existing BLM guidelines of no retardant within 500 feet of vernal pool complexes. Minimize the loss of vernal pools and vernal pool complexes and avoid long-term habitat degradation, including upland and subterranean habitat.

Conservation Strategy for Federally Listed Plant Species Managed by BLM's Folsom Field Office

BLM's Folsom Field Office manages 8 plant species listed under the federal Endangered Species Act of 1973. These species can be clustered into three groups based on the ecosystems in which they occur. (One species occurs in two of the groups.) The Pine Hill species are associated with gabbro and similar rock types and are found primarily in western El Dorado County. Some of these species also occur in western Nevada County and Yuba County. The five listed species in this group are *Calystegia stebbinsii*, Stebbins' morning glory; *Ceanothus roderickii*, Pine Hill ceanothus; *Fremontodendron decumbens*, Pine Hill flannelbush; *Galium californicum sierrae*, El Dorado bedstraw; and *Senecio layneae*, Layne's butterweed. There are two federally listed species associated with the Ione Formation primarily in Amador County. These species are *Arctostaphylos myrtifolia*, Ione Manzanita; and *Eriogonum apricum apricum*, Apricum Hill buckwheat. Two federally listed species managed by BLM are associated with the dunite and serpentinite of the Red Hills. These species are *Verbena californica*, California verbena; and *Senecio layneae*, Layne's butterweed (already mentioned above as part of the Pine Hill group). This conservation strategy is organized by these ecosystem/geographic groupings of species, because the species of a single group often co-occur, and management actions often affect more than one species.

Introduction—Special Status Ione Formation Plant Species Managed by BLM

The two federally listed species that occur on public land in this area are *Arctostaphylos myrtifolia*, Ione manzanita; and *Eriogonum apricum* (*Eriogonum apricum* var. *apricum*, Apricum Hill buckwheat). The sensitive species *Horkelia parryi* also occurs in this area.

The public land involved consists of four parcels (two of these parcels are joined at the corner) that support one or the other of the two federally listed plant species of the Ione Formation. The Ione manzanita Area of Critical Environmental Concern is one of these parcels. The two joined parcels will be referred to as the non-ACEC *Arctostaphylos myrtifolia* site. The other parcel will be referred to as the *Eriogonum apricum apricum* site.

Two issues stand out as the most critical for the conservation of the two listed Ione Formation plant species:

- Little of the habitat of either species is being held in permanent conservation status. For one variety of *Eriogonum apricum*, (*E. apricum prostratum*), there is no protected habitat.
- A fungal disease, *Phytophthora cinnamomi*, is killing whole stands of *Arctostaphylos myrtifolia*. The disease has reached one BLM parcel with *Arctostaphylos myrtifolia*.

Prioritized Goals

1. Institute quarantine measures for *A. myrtifolia* to prevent the spread of *Phytophthora cinnamomi*:
 - a. Fencing both the ACEC and the non-ACEC Ione manzanita parcels
 - b. Closures published for both parcels. (Accomplished 2005.)
 - c. Explanatory signs for both parcels.
 - d. Resolve lake trespass at Ione manzanita ACEC, so it does not create additional potential for disease transmission.
 - e. Do educational outreach about *Phytophthora cinnamomi* to neighbors to the BLM properties with Ione manzanita.
2. Collect data for monitoring the movement of *Phytophthora cinnamomi* both on, and in the vicinity of, BLM lands. Private landowners may limit access preventing monitoring of private lands.
3. Acquire habitat for both Ione Manzanita and ApricumHill/Irish Hill buckwheat. In such situations, often areas of preferred prime habitat are not available because the owners are not willing sellers. A successful acquisition program must be flexible and respond to opportunities that arise. However if there are choices available, the priority for acquisition should be:
 - a. Habitat supporting both *Eriogonum apricum prostratum* and *Arctostaphylos myrtifolia*.
 - b. Habitat supporting only *E. apricum prostratum*.
 - c. Habitat supporting both *E. apricum apricum* and *A. myrtifolia*.
 - d. Habitat supporting only *E. apricum prostratum*.
 - e. Habitat supporting only *A. myrtifolia*.
4. Collect GPS data for populations that have been mapped by sketching, either on topo quads or aerial photos, heretofore.
5. Work with CDF to extend the modified suppression plan for the Ione manzanita ACEC to the other BLM parcels with Ione Formation listed plant species. Modify the suppression plan to include measures to prevent the transmission of *Phytophthora cinnamomi*. (CDF's experience with sudden oak death, *Phytophthora ramorum*, may be helpful in this regard.)

6. Continue to prevent mining impacts to the habitat of listed species by seeking mineral withdrawals. Segregations from mineral entry may be used as a stop-gap measure until withdrawals occur.
7. Protective measures for the *E. apricum apricum* property.
 - a. Fence the parcel
 - b. Signs for the parcel
8. Ione manzanita ACEC
 - a. Consider adding 60 acres of public land adjacent to the Ione manzanita ACEC to the ACEC. Both parcels that would be added support Ione Manzanita.
 - b. Consider adding both the Carbondale *A. myrtifolia* parcel and the *E. apricum apricum* parcel to the ACEC.
9. Continue restoration efforts for Ione manzanita at the Ione manzanita ACEC and the non-ACEC *A. myrtifolia* parcel, if possible. Restoration efforts may be greatly constrained by the need to stop the spread of *Phytophthora cinnamomi*. (For instance *Phytophthora cinnamomi* is thought to have been spread largely through the movement of infected nursery stock. So nursery propagation of Ione manzanita followed by field planting poses risks of further transmission of the disease to the wild.) Work with species experts and regulatory agencies to see if restoration can proceed, and to create a restoration plan if restoration is feasible.
10. Participate in the Recovery Implementation Team (called for in a preliminary draft of the upcoming US Fish and Wildlife Service recovery plan for the Ione species) if so requested.
11. Include BLM land in an interagency preserve system if the various agencies involved with Ione Formation biological conservation efforts choose to create such a system.
12. Examine the potential for increasing *E. apricum apricum* on the *E. apricum apricum* parcel.
13. Seek grants and look for partnerships for funding for acquisitions and management actions.
14. Engage in public education and outreach to explain quarantine actions on federal land, to explain the importance of private land populations, and to get the help of the public to reduce the spread of *Phytophthora cinnamomi*. Also public education can foster a political climate where local agencies are more inclined to participate in recovery efforts.

Avoidance of Adverse Impacts

General

1. Spatial avoidance of entire habitat is the highest priority for avoidance of impacts.
2. Spatial avoidance of areas with observed plants can avoid plant injury. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can prevent plant injury, especially for annuals and perennials that die back seasonally. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

No grazing leases are authorized where these listed Ione Formation plant species occur. No grazing leases will be issued in the habitat of these listed species.

Minerals

ACEC status is proposed for all Ione Formation listed species habitat. The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a species occurrence. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

Parcels that support Ione Manzanita have been closed to public entry to avoid the spread of *Phytophthora cinnamomi*. There is no public access and no recreational pressure on the single BLM parcel that supports Apricum Hill buckwheat.

Timber

There are no timber resources in this area.

Lands

Lands with Ione Formation listed species will not be transferred out of public ownership.

Wildfire

A modified suppression plan has been written for the Ione Manzanita ACEC. Key elements include avoidance of the use of heavy equipment and avoidance of the use of

fire retardant chemicals with fertilizer. This plan will be extended to additional lands proposed for addition to the ACEC, with the addition of these parcels to the ACEC.

Fuels Treatments for Public Safety

Because the BLM parcels that support Ione Formation listed species are not close to developed areas, the need for fuels projects is not anticipated. Should development reach this area in the future, and if fuels projects become necessary, the following approach will be adopted:

Fuels treatments in special status species habitat should be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. avoidance of the species habitat,
2. avoidance of the species, (e.g., creating buffers around individual shrubs or clusters of shrubs),
3. temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. hand clearing instead of the use of heavy equipment,
5. mastication instead of blading (if heavy equipment is used),
6. fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat, unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Introduction—Special Status Red Hills Serpentine Plant Species Managed by the BLM's Folsom Field Office

This strategy addresses two listed and four sensitive species of the public lands in the Red Hills and associated serpentine areas in Tuolumne County.

Special status species involved include:

<i>Verbena californica</i>	Federally listed threatened
<i>Senecio layneae</i>	Federally listed threatened
<i>Allium tuolumnense</i>	BLM sensitive
<i>Chlorogalum grandiflorum</i>	BLM sensitive
<i>Lomatium congdonii</i>	BLM sensitive
<i>Senecio clevelandii</i> var. <i>heterophyllus</i>	BLM sensitive

Geographic areas include:

- Red Hills ACEC
- Lands acquired with the intention that they be added to the Red Hills ACEC
- The portion of the Red Hills serpentine body east of Don Pedro Reservoir
- Rawhide Hill
- Woods Creek
- The mouth of Kanaka Creek, where it enters into Don Pedro Reservoir
- New Priest Grade serpentine

Prioritized Goals

1. Weeds
 - a. Continue to control yellow starthistle (YST) with mechanical means as long as that approach yields positive results.
 - b. Control Italian thistle by mechanical means.
 - c. Control roadside yellow starthistle along Red Hills Road either with the use of a Waipuma hot water/foam system, or encourage herbicide spraying by County. Herbicide spraying should only be used if the Waipuma is either unavailable or ineffective, and the spraying can be accomplished with sufficient safeguards to prevent impacts to special status plant species, surface water and aquatic animals. With either method of control, monitoring and adaptive management should follow initial treatments.
 - d. Inventory for barbed goatgrass and Medusahead. Monitor the impacts to sensitive species when barbed goatgrass and Medusahead invade special status species habitat. If negative impacts are demonstrated, control barbed goatgrass and/or Medusahead where it is impacting special status species, or more generally if possible.

2. Red Hills ACEC
 - a. Add newly acquired lands to the ACEC.
 - b. Add adjacent lands to the ACEC that possess similar resource values, especially listed and sensitive species. Lands east of Don Pedro Reservoir directly east of the Red Hills ACEC and forty acres that straddle Hwy 108/120 deserve inclusion.
 - c. Evaluate other Tuolumne County serpentine habitats like Rawhide Hill that support a similar suite of sensitive species, for inclusion in the Red Hills ACEC, or for the creation of separate ACEC's.
3. Acquire habitat for listed species. Priority for habitat acquisition should be:
 - a. *Brodiaea pallida*
 - b. *Verbena californica*
 - c. *Senecio layneae*
4. Continue grazing monitoring to assess the impacts of grazing on the two listed species of the Red Hills, *Verbena californica* and *Senecio layneae*. (The frequency of monitoring need not necessarily remain annual.) Follow up on consultation.
5. Revise the Red Hills ACEC management plan to include new data, new listings of species under the Endangered Species Act, newly acquired lands, other lands added to the ACEC because of newly developed resource information, and evolving recreational use.
6. Continue to block and disguise old ORV roads and new trespass ORV roads to limit impacts to special status species from vehicles.
7. Get good baseline data for monitoring plant occurrences, especially GPS data for those species that occur as distinct discrete occurrences. Some sensitive species are so widespread and dispersed in the Red Hills that it would be impractical to take GPS data for locations, (e.g., *Chlorogalum grandiflorum*).
8. The modified suppression plan for the Red Hills should be extended to include at least all of the occurrences of the listed species of the Red Hills. This might be most easily accomplished by the extension of the Red Hills boundary to include lands east of Don Pedro Reservoir directly across from the Red Hills ACEC, 40 acres straddling Hwy 108/120 on the west side of the Red Hills, and the lands acquired specifically for addition to the Red Hills ACEC. All these lands are virtually contiguous with the Red Hills ACEC. These additions would include all but one of the known listed plant species occurrence on BLM land in Tuolumne County. The remaining Layne's butterweed occurrence lies on the east side of

Don Pedro Reservoir, near the mouth of Kanaka Creek where it empties into Don Pedro Reservoir. This area is separated from the present Red Hills ACEC by about 1 mile and the reservoir.

9. Trails
 - a. Create a master trails plan for the Red Hills. Establish “limits of acceptable change” thresholds, that if exceeded will trigger remedial actions, (e.g., closure of sections of the ACEC to equestrian use while trespass trails are rehabilitated).
 - b. Work with groups like the Tuolumne County Trails Council and the Backcountry Horsemen to monitor and maintain trails, to prevent trail proliferation and minimize erosion/sedimentation.
10. Participate in the implementation of the Southern Sierra Foothill Plant Recovery Plan when it is adopted. It is now in a preliminary draft form.
11. Research
 - a. Encourage research that will lead to better understanding of the ecology of the special status species of the Red Hills; with an emphasis on aspects of ecology that can readily be influenced by management practices. Knowledge of species responses to fire, grazing, mechanical disturbance, and weed invasions would all be useful. Basic knowledge of life history parameters like plant longevity, the rate of decay of the viability of seed in the seed bank, and the extent of vegetative reproduction, would also be useful in management.
 - b. Promote research to resolve the taxonomic position of *Senecio clelandii* var. *heterophyllus*, i.e., whether the variety deserves recognition as a distinct taxon.
12. Use fences and signs to indicate public land boundaries in areas with special status species. Use signs that explain the sensitivity of the resources where providing that information has the potential to increase compliance.
13. Survey to establish the boundaries of the parcel at the mouth of Kanaka Creek that supports a population of Layne’s butterweed, to determine what portion of the population is on public land, and to facilitate potential management actions, (e.g., fencing).
14. Inventory for *Cryptantha mariposae* and *Lupinus spectabilis*. Both species have been reported from the Red Hills, but voucher specimens have not been collected and there are no records in CNDDDB. Although present management is probably compatible with the protection of these species, knowledge of the locations where the species occur would aid project planning. BLM should be aware of all the

sensitive species occurrences on its land, especially in focus areas like the Red Hills ACEC.

15. Continue to prevent mining impacts to the habitat of listed species and significant concentrations of sensitive species. Seek a mineral withdrawal for the Red Hills ACEC. If not all lands in the vicinity of the Red Hills that support listed plant species are included in the ACEC, add those lands to the area nominated for mineral withdrawal. Segregations from mineral entry have a similar effect for a fixed time period.
16. Use a program of low level aerial photography taken at regular intervals to track disturbances and large scale vegetation changes over time, in the Red Hills and associated serpentines. Flights should use the same photographic spectrum, the same scale and the photos should be taken at the same time of the year.
17. Work with the County on their spray program; especially if they institute a homeowner equipment loan program. Such a program could affect special status species on private land. Also off-site effects, like those resulting from spray-drift, could affect special status species on public land.
18. Educate neighbors on weed control and potential rare plant impacts.
19. Seek grants and look for partnerships for funding for acquisitions and management actions.
20. Engage in public education and outreach to explain the purpose of the ACEC, to solicit input on management, to involve the public in volunteer efforts, to explain the importance of private land populations of some Red Hills species, and to get the help of the public to reduce the spread of weeds in the Red Hills area.

Avoidance of Adverse Impacts

General:

1. Spatial avoidance of entire habitat is the highest priority for avoidance of impacts.
2. Spatial avoidance of areas with observed plants can avoid plant injury. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can prevent plant injury, especially for annuals and perennials that die back seasonally. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

Two current grazing leases in the Red Hills support federally listed threatened species. Two other leases that supported federally listed species have been canceled, or altered to exclude the habitat of the listed species. One of the remaining leases supports only one listed species, Layne's butterweed. The vast majority of the plants of this species are on a ridge that is virtually inaccessible to cattle, due to the thick brush surrounding the butterweed habitat and the lack of water nearby. (If a fire were to occur, this circumstance could change.) No evidence of grazing has been observed in this area. The other lease includes both Layne's butterweed and California verbena. Because the phenology of both species is relatively late, the grazing period was moved forward and now ends on April 15. Monitoring of both species was begun in 1998, using a comparison of grazed and ungrazed (fenced) plots to evaluate grazing effects. No clear pattern of grazing effects has emerged from monitoring, i.e., it is not clear for either species that the grazed or ungrazed plots are resulting in greater viability. The present grazing regime is being maintained and the populations appear stable. No new grazing leases will be authorized.

Minerals

ACEC status is proposed for all Red Hills listed species habitat not already included in the ACEC. The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a listed species occurrence and also protect associated sensitive species. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

Only non-motorized recreation is allowed in the Red Hills. Horseback riding is popular and limited facilities have been provided. A proposed action in the Draft RMP will confine equestrian use to designated trails. Dispersed camping is currently allowed. With the adoption of the proposed action of the Draft RMP, the Red Hills will become a day-use area. A nature trail was installed in 2005-2006 (after informal consultation). It was designed to minimize impacts to special status species, while still affording opportunities for the public to view these species and for the public to become informed about their significance.

Timber

There are no timber resources in this area.

Land

Lands with Red Hills listed species will not be transferred out of public ownership. Extending ACEC status to all lands in the area supporting listed species as proposed in the Draft RMP confirms this position.

Wildfire

A modified suppression plan has been written for the Red Hills ACEC. Key elements include avoidance of the use of heavy equipment and avoidance of the use of fire retardant chemicals with fertilizer. This plan will be extended to additional lands proposed for addition to the ACEC, with the addition of these parcels to the ACEC.

Fuels Treatments for Public Safety

Because the BLM parcels in the Red Hills are not close to developed areas, the need for fuels projects is not anticipated. Should development reach this area in the future, and if fuels projects become necessary, the following approach will be adopted:

Fuels treatments in special status species habitat will be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. avoidance of the species habitat,
2. avoidance of the species, (e.g., creating buffers around individual shrubs or clusters of shrubs),
3. temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. hand clearing instead of the use of heavy equipment,
5. mastication instead of blading (if heavy equipment is used),
6. fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat, unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Introduction—Special Status Gabbro Plant Species of El Dorado, Nevada and Yuba Counties Managed by BLM

This portion of the overall rare plant strategy will cover the following six species:

- *Calystegia stebbinsii*
- *Ceanothus roderickii*
- *Fremontodendron decumbens*
- *Galium californicum sierrae*
- *Senecio layneae*
- *Wyethia reticulata*

and all the habitat they occupy, with the exception of the *Senecio layneae* occurrences in the Red Hills (covered in the Red Hills strategy):

These species occur in the following locations on public land:

	Pine Hill area, El Dorado County	Red Hills, Tuolumne County	Grass Valley area, Nevada County	Brownsville area, Yuba County
<i>Calystegia stebbinsii</i>	X		X	
<i>Ceanothus roderickii</i>	X			
<i>Fremontodendron decumbens</i>	X		dwarf <i>Fremontodendron</i> *	dwarf <i>Fremontodendron</i> *
<i>Galium californicum sierrae</i>	X			
<i>Senecio layneae</i>	X	X		X
<i>Wyethia reticulata</i>	X			

* These *Fremontodendron* populations display differences from both the common tall *Fremontodendron* of the foothills, *F. californicum*, and from the dwarf species, *F. decumbens*, in El Dorado County. Further taxonomic work is needed.

Prioritized Goals

Goals for El Dorado County

Note: The area involved runs from Highway 50 in the vicinity of Cameron Park north to Salmon Falls on the South Fork American River. The BLM lands are all included in the interagency Pine Hill Preserve.

1. Acquisitions:

- a. Use grants or LWCF appropriations to purchase high quality habitat, using USFWS recovery plan as guidance.
 - b. Accept title to other appropriate lands, (for instance those included in the Recovery Plan boundaries), donated by other agencies for inclusion in the Pine Hill Preserve.
2. Preserve manager: If funding is available from partner agencies, and as long as a consensus of the Preserve partners continues to support this approach, provide a BLM employee to act as manager for the Pine Hill Preserve.
 3. PHP management: Participate in the interagency Pine Hill Preserve Management Group, providing technical assistance and material support for management actions on Preserve lands; actions on BLM lands, and actions on non-BLM Preserve lands as well.
 4. PHP management plan: Participate actively in the formulation of the Management Plan for the Pine Hill Preserve.
 5. Monitoring: Work within the Pine Hill Preserve framework to establish an overall monitoring plan for the listed species in the Preserve. Use funds appropriated to USFWS and transferred to BLM to create a baseline for monitoring by population boundary delineation with GPS and incorporation of the data into BLM's GIS. (Many populations have been roughly mapped on paper by field approximation, but not GPS'd, and not entered into the BLM's GIS system). Develop special monitoring plans for fuel reduction projects and burns.
 6. Fuels treatments for public safety: Use available information about species population distribution to plan fuels treatments to avoid unnecessary impacts to listed and sensitive species. Do site specific detailed inventories as necessary.
 7. Fuels treatments for public safety: Increase available information about management effects to the special status species of the Preserve by having the BLM botanist and/or Preserve Manager participate in planning and executing fuels treatments and monitoring for fuels treatment effects. Trials of different treatments for reducing fuels may produce information that refines treatment prescriptions, reducing negative effects and increasing positive effects for listed and sensitive species. Each species may respond differently to each treatment option.
 8. Weed control: Address impacts of invasive plant species to listed and sensitive plant species. Eradicate weeds that are impacting listed and sensitive plant species where that is possible. Control weeds to minimize impacts where eradication is not possible.
 - a. Assess weed infestations for threats posed to listed species, and threats posed to the plant community as a whole.

- b. Use non-chemical means to control invasive plants where that is practical.
- c. Use of herbicides to combat weeds in listed species habitat will only occur if:
 - i. Weeds are impacting the listed species.
 - ii. Other control methods have been unsuccessful.
 - iii. The herbicide's action spectrum will not affect the listed species.
 - iv. A small scale trial to see the on-site effects of the herbicide has been completed and results show that the listed species are unaffected, or effects are negligible and acceptable.
9. Modified fire suppression plans: Update the modified suppression plan for the Pine Hill Preserve area for BLM's Cooperative Fire Protection Agreement with CDF. Include provisions for extending the plan as the Preserve expands.
10. Research: Within the Pine Hill Preserve framework, solicit colleges and universities to research fire and fuels treatment effects on listed species, as well as the basic autecology of the listed plant species of the Preserve. BLM will work with such researchers to coordinate research and management, and to navigate permitting and consultation when required.
 - a. USFWS to facilitate research and monitoring at the Pine Hill Preserve by responding to requests for permits and permit amendments for research and monitoring within 8 weeks.
11. Contribute to accomplishing Recovery Plan goals, including goals that are not encompassed by the Management Plan for the Pine Hill Preserve.
12. ACEC:
 - a. Designate the BLM lands in the Pine Hill Preserve as an ACEC.
 - b. Adopt an ACEC management plan. This plan may be the same as the interagency Management Plan for the Pine Hill Preserve.
13. The single known BLM occurrence of any of the 5 listed plant species of the Pine Hill Preserve, that occurs outside the Preserve in El Dorado County, a Layne's butterweed occurrence near Norton Ravine on serpentine. will be highlighted for planning. Conduct further inventories in this area.
14. Erosion control: Retard active gully erosion by rehabilitation of gullied landscapes. Measures may include diversion of water flow, revegetation, and regrading in some instances. The destruction of individuals of listed plant species

may be necessary to maintain or increase habitat integrity for listed species, resulting in a longer term net benefit for the species.

15. Rehabilitation of badly disturbed areas: Revegetate abandoned roads, pipeline rights-of-way, or other unnatural disturbances, when natural regeneration is very slow, the threat of invasion by non-natives is high, or the threat of erosion is high. Use dominant shrubs, common herbs, sensitive or listed species collected locally, that are components of the native plant communities (mostly Northern gabbroic mixed chaparral). Collection of seeds or cuttings of listed species for this purpose will be under a 10(a)(1)(A) permit.
16. BLM to seek a mineral withdrawal for Pine Hill Preserve lands. Consideration of the expansion of the Preserve will be made part of this process. Whether such a withdrawal will occur is ultimately in the hands of the Department of Interior.
17. Fuels Plan: Work with CDF on creating a fuels plan for the Preserve.
 - a. If fuels are not controlled, the possibility that a wildfire in the Preserve area will threaten lives and property and lead to an all-out suppression effort is increased. In such an all-out wildfire control effort, potential impacts to biological resources will be disregarded, and major impacts to habitat like wide dozer lines, are likely.
 - b. It may be determined that there is a conservation benefit from breaking larger units of the Preserve into separate fire suppression units separated by fuelbreaks, to provide insurance against a catastrophic fire that burns an entire Preserve Unit, with unknown biological effects. Fuelbreak construction would have major impacts and would necessitate detailed environmental analysis.
18. Modified fire suppression plans: Work within the framework of the Pine Hill Preserve Management Group to extend fire suppression guidelines to other lands within the Preserve owned by other agencies.
19. Prescribed burning: To make sure that burns are executed within a prescription that furthers conservation goals, provide BLM fire expertise to plan and execute any prescribed burns. California Department of Forestry and Fire Protection and local fire departments will provide most of the personnel and equipment for prescribed burns.
20. Prescribed burning: To assure burning is conducted in a manner that most benefits listed and sensitive species, and that the most information is captured to refine future management, the Preserve Manager and/or BLM botanist will participate in planning and executing burns, and monitoring for burn effects.

21. Explore grants and funding partnerships with other agencies and nonprofits that share BLM conservation goals, to finance on-the-ground conservation actions and acquisitions.
22. Support education and outreach to: (1) increase public understanding of, and support for, agency conservation actions; (2) spur volunteer participation in conservation activities; and (3) to increase the awareness of nearby property owners who may have opportunities to conserve the species on their own property.

Goals for Nevada and Yuba Counties

The areas involved are the Deadman's Flat area west of Grass Valley in Nevada County, and the public land west of Brownsville in Yuba County. See the table in the introduction at the beginning of this strategy for which listed species occur in these areas

1. Landfill retention: Folsom Field Office will work with other tiers of BLM to attempt to retain all or portions of a former landfill site (a 40 acre lease) with habitat for one listed species, Layne's butterweed, and a population of a dwarf flannelbush with close affinity to the listed species, Pine Hill flannelbush. BLM has issued strict guidance that we are to divest of the ownership of all former landfills. Retention would involve making an exception for this instance. The Endangered Species Act may provide sufficient justification for this exception. If the landfill site is transferred from BLM to other ownership, make provisions for a conservation easement, or other mechanisms to guarantee the conservation of the species, and if possible, plant community as well.
2. Fuelbreak construction in the Brownsville area: BLM has been requested to join an ongoing effort to create a fuelbreak to help to protect the hamlet of Brownsville from wildfire. Private land adjacent to BLM lands have already been cleared by masticating equipment. BLM is actively participating in many such efforts in various other communities in the foothills. BLM will balance several obligations: (1) provide for public safety; (2) conservation and recovery of listed species; and (3) provide for biodiversity by the conservation of unusual plant communities. Fuel breaks on BLM land will be designed to minimize or eliminate impacts to listed species habitat. Prescribed burning will be considered as an alternative means of fuel reduction, especially in *Fremontodendron* habitat. Of course, mechanical line construction would be necessary to make possible prescribed burning. And fuels reduction can be a conservation tool where it can reduce the likelihood of environmentally damaging fire suppression actions in the event of wildfire.
3. Research: BLM will continue to work with Walter Kelman of CSIRO, Australia to develop information about the taxonomic status of the *Fremontodendron* populations of Nevada and Yuba counties.

4. USFWS to provide collection permits to appropriate BLM employees when it will facilitate research on the listed gabbro species. Turn around time to receive the permits will not exceed 8 weeks.
5. Modified fire suppression plans: Write modified suppression plans for both areas for BLM's Cooperative Fire Protection Agreement with CDF. Work with CDF and local communities on creating a fuels plans for both areas. If fuels are not controlled, the possibility that a wildfire in either area will threaten lives and property and lead to an all-out suppression effort is greatly increased. In such an all-out wildfire control effort habitat values will be disregarded and major impacts to habitat (like wide dozer lines) are likely.
6. Inventory: Extend inventories for listed and sensitive species in both areas.
7. Monitoring: Establish an overall monitoring plan for the listed species and the *Fremontodendron* in both locations. Part of this monitoring should be population boundary delineation with GPS and incorporation of the data into BLM's GIS. (Some populations have been mapped on paper by field approximation, but not GPS'd, and not entered into the BLM's GIS.) Develop a practical monitoring plan that focuses on habitat integrity and listed species.
8. Weed control: Address impacts of invasive plant species to listed and sensitive plant species. Eradicate weeds that are impacting listed and sensitive plant species where that is possible. Control weeds to minimize impacts where eradication is not possible. Assess weed infestations for threats posed to the plant community as a whole as well.
 - a. Use non-chemical means to control invasive plants where that is practical.
 - b. Use of herbicides to combat weeds in listed species habitat will only occur if:
 - i. Weeds are impacting the listed species.
 - ii. Other control methods have been unsuccessful.
 - iii. The herbicide's action spectrum will not affect the listed species.
 - iv. General treatment with herbicides will be deferred until after a small scale trial to see on-site effects of herbicide use.
9. Acquisitions: Private land adjacent to public land with significant habitat for listed and sensitive species should be evaluated for acquisition from willing sellers. Similarly adjacent land that would permit more effective management of rare species or plant communities should be evaluated for acquisition from willing sellers. Maintaining the integrity of these two unusual chaparral communities also will be considered in all lands actions. Such acquisitions will be evaluated in terms of their priority among other possible acquisitions for public purposes.

10. Fuelbreak construction in the Deadman's Flat area: Fuelbreak construction in this area has been performed by CDF crews with little BLM oversight in years past. BLM will work with CDF to evaluate the fuels situation and develop a fuels plan. BLM will balance several obligations: (1) provide for public safety; (2) conservation and recovery of listed species; (3) conservation of biodiversity by maintaining unusual plant communities. Fuel breaks on BLM land will be designed to minimize or eliminate impacts to listed species habitat. Prescribed burning will be considered as an alternative means of fuel reduction, especially in *Fremontodendron* habitat. Of course, mechanical line construction would be necessary to make possible prescribed burning. And fuels reduction can be a conservation tool where it can reduce the likelihood of environmentally damaging fire suppression actions in the event of wildfire.
11. ACEC: BLM will work with local interested parties to explore whether the public land west of Grass Valley (Deadman's Flat) or the public land west of Brownsville in Yuba County deserves Area of Critical Environmental Concern status. Both areas have distinct plant communities and support at least one federally listed plant species. In the Grass Valley area, consider including nearby serpentine public lands (e.g., Slate Creek) in any ACEC designation.
12. Restoration of the Brownsville landfill: The landfill consists of two main excavations that were covered with soil and seeded to grasses.
 - a. There are badly eroded portions of the landfill site. (The substrate has been altered and this area has mostly been converted to an alien plant community, Mediterranean annual grassland.) Erosion control measures will be instituted with the conservation of the listed species always considered. Measures may include diversion of water flow, retarding water flow, revegetation, and regrading in some instances.
 - i. In the consultation process, USFWS to support this effort by allowing the destruction of individuals of listed plant species in those situations where the sacrifice of individuals is necessary to maintain or increase habitat integrity for listed species.
 - b. The specifics of landfill construction and closure measures will be investigated. Answers will be sought to questions such as the source of the soils that cover the fill, the depth of soil material atop the fill, fertilizer use, etc. If sufficient information is available, an evaluation of the feasibility of restoration of elements of the native plant community will be undertaken.
13. Contribute to accomplishing Recovery Plan goals outside the Pine Hill Preserve.
14. Mining: If and when mining threatens listed species or their habitat, segregate the land and seek a mineral withdrawal.

15. Explore grants and funding partnerships with other agencies and nonprofits that share BLM conservation goals, to finance on-the-ground conservation actions and acquisitions.
16. Support education and outreach to: (1) increase public understanding of, and support for, agency conservation actions; (2) spur volunteer participation in conservation activities; and (3) to increase the awareness of nearby property owners who may have opportunities to conserve the species on their own property.

Avoidance of Adverse Impacts

General

1. Spatial avoidance of entire habitat is the highest priority for avoidance of impacts.
2. Spatial avoidance of areas with observed plants can avoid plant injury. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can prevent plant injury, especially for annuals and perennials that die back seasonally. Effects to seeds or underground structures may still occur. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

No grazing leases are authorized where these gabbro listed plant species occur. No grazing leases will be issued in the habitat of these listed species.

Minerals

ACEC status is proposed for virtually all public land gabbro plant listed species habitat, as part of three proposed ACECs; Pine Hill, Deadman's Flat and Yuba Brownsville. The sole exception is one small occurrence of Layne's butterweed near Norton Ravine that will not be included in an ACEC. (This one small occurrence is segregated from mineral entry and will be included in a proposed mineral withdrawal.) The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a listed species occurrence and also protect associated sensitive species. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

In the Pine Hill Preserve, only non-motorized recreation will be allowed, with the possible exception of one road that has a history of receiving heavy recreational use.

This road is currently unused because private landowners have cut off public access. There are a handful of Stebbins' morning glory plants concentrated at one point along the road, and a few dispersed Layne's butterweed plants on the cut bank along another section of the road. Vehicle activity on the road itself is unlikely to affect these plants, although it could affect potential reproduction of the plants in the road. The Pine Hill Preserve Management Plan which will focus on the conservation of the listed plant species, will determine the status of this road as well as any other recreational uses to occur at the Preserve. If the proposed ACECs at Deadman's Flat and Brownsville are adopted in the RMP, ACEC management plans will be written. These plans will specify the types of recreation that will be allowed because they are deemed to be compatible with conservation of the listed species and rare plant communities at these sites. There is an existing park lease at the Yuba Brownsville site, where the lease holders have created extensive facilities including ball parks, paved trails and tennis courts. Negotiations with the holders of the lease will be needed before changes in recreation management can occur.

Timber

A scattering of ponderosa pine is virtually all of the scarce timber resource in this area. No timber sales will occur in listed species habitat, unless there is convincing evidence that such a sale will benefit the listed species.

Lands

Lands with gabbro listed species will not be transferred out of public ownership. A possible exception is the 40 acre property at the old Yuba County landfill site by Brownsville. This land was leased for the landfill (since closed) and most of the site is highly disturbed. Where trash was disposed, the native substrate is deeply buried and non-native grassland is growing atop the fill. But at the edges of the property there are less disturbed areas supporting native chaparral including a small number of Layne's butterweed plants and a stand with a dwarf *Fremontodendron* closely related to Pine Hill flannelbush. BLM has made a national priority of the disposal of landfill sites to lessees, to limit federal liability. So there may be pressure from elements within the Bureau to dispose of this parcel. If such a disposal were to occur, provisions for the conservation of the species would be made. A conservation easement is one possible mechanism to maintain conservation management.

Wildfire

A modified suppression plan has been written for the Pine Hill Preserve. Key elements include avoidance of the use of heavy equipment and the use of fire retardant chemicals with fertilizer. If proposals for the designation of a Deadman's Flat ACEC and a Yuba Brownsville ACEC are included in the RMP, modified suppression plans for those areas will follow.

Fuels Treatments for Public Safety

A fuelbreak has been created along much of the perimeter of the Cameron Park Unit of the Pine Hill Preserve to protect the dense residential development there from wildfire. Such fuelbreak construction will need to continue at Cameron Park and at other units of the Preserve. The conservation needs of the listed plant species were important factors in the selection of techniques for fuel reduction, and will continue to be. The development of additional knowledge about the impacts of various fuel reduction techniques has also been a priority.

There have been requests from the community at Brownsville for fuels reduction in that area. And a county supervisor has contacted our office about starting fuels reduction at Deadman's Flat.

Fuels treatments in special status species habitat will be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. avoidance of the species habitat,
2. avoidance of the species, (e.g., creating buffers around individual plants/shrubs or clusters of plants/shrubs),
3. temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. hand clearing instead of the use of heavy equipment,
5. mastication instead of blading (if heavy equipment is used),
6. fall burning instead of mechanical clearing, (especially when listed species seed germinates in response to fire),
7. pile burning of cut and piled brush, rather than mastication (especially when listed species seed germinates in response to fire).

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat, unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Conservation Strategy for Sensitive Plant Species Managed by BLM's Folsom Field Office

Introduction—What are BLM Sensitive Plant Species?

BLM “sensitive” plants are those rare plant species designated by the BLM California State Director as sensitive because of rarity or threats. BLM sensitive plant species form a part of a larger group of plant species called “special status species” by BLM by virtue of being listed, proposed, or candidates for listing under the Federal Endangered Species Act, listed under the California Endangered Species Act, or designated as sensitive by the BLM State Director. The State Director uses the California Native Plant Society List 1B, “Rare, Threatened, or Endangered in California and Elsewhere” as the basis for his list of sensitive species.

Structure of this Conservation Strategy

Because each plant species has different ecological requirements, as well as different situations on public lands (distribution, ongoing management etc.), the strategy for each plant species is somewhat different. However for all the sensitive plant species, portions of the strategy will be the same. For all the species “Prioritized Goals”, and “Avoidance of Adverse Impacts”, will have similarities. At the beginning of this document there are sections with these titles. These sections are applicable to all the sensitive plant species in this strategy. When an individual species has particular characteristics requiring further discussion of these topics, the headings are repeated with additional information in the portion of the strategy that discusses that particular species.

Prioritized Goals for All Sensitive Plant Species

1. Maintain the viability of all sensitive plant populations on BLM lands.
2. Manage sensitive plant populations so that they remain stable or increase over time.
3. Manage sensitive plant populations so that all life history stages are maintained. For instance, a live seed bank is an important phase of populations of those species that bank seeds, and maintaining the seed bank should be a management priority. However for some species that reproduce cyclically (e.g., fire followers), not all life history stages will be equally represented at one point in time.
4. Retain sensitive species habitat. (In situations where there are compelling reasons to dispose of habitat, evaluate if disposal of habitat would be detrimental to overall conservation of the species. Consider both the overall distribution of the species, and that portion of the species' overall distribution that is permanently protected in conservation status.)
5. Acquire additional priority sensitive species habitat. Priority should be given to species that may be federally listed in the foreseeable future, species that are

similarly imperiled, and populations of species with particular conservation value (e.g., disjunct populations). BLM will make such acquisitions only from willing sellers at fair market value. BLM often acquires lands for conservation purposes through grants and donations, and these avenues should be explored for priority potential acquisitions.

6. Inventory all appropriate habitat to assure that we are aware of sensitive species populations on BLM land.
7. Explore the use of conservation easements to protect sensitive species habitat located on private lands. This strategy is particularly appropriate where priority populations extend from public land onto adjacent private land.
8. Provide sensitive species education where/when needed, by posting signs, handing out published material, and offering presentations. These measures are particularly appropriate when visitors to public lands are causing impacts to sensitive species populations, or when actions of private landowners can impact sensitive species on their own properties or on public land.

Avoidance of Adverse Impacts

Program specific measures that apply to most or all sensitive species

Grazing

1. All grazing leases not previously surveyed will be surveyed for T, E and S species at the time of grazing lease renewal, if not sooner. If lease surveys were incomplete initially, they should be extended.
2. If new sensitive species populations are found, the plants will be examined for evidence of grazing impacts. Plants will be examined for signs of clipping and trampling. Removal of inflorescences, flowers or fruits will be noted.
3. If extensive grazing impacts are observed, and if there is no evidence that the species does well with grazing (one form of evidence of grazing compatibility would be extensive populations of the sensitive species on grazed private lands for instance), then an exclosure study will be set up to compare the vigor of grazed and ungrazed portions of the same population. An unreplicated experiment comparing two carefully chosen plots (similar in terms of biotic and abiotic factors that could affect plant growth) can be used initially. If results from this pair suggest significant negative impacts from grazing, a replicated exclosure study should be established, unless the lease is modified or canceled to alleviate grazing impacts based on information already gathered. Neither stage of study (unreplicated or replicated) should exceed 5 years. Therefore by the next lease renewal cycle a determination of grazing compatibility or grazing incompatibility will be reached. Appropriate action will be renewal, modification or cancellation

of the lease consistent with the results of monitoring. Fencing of vulnerable sensitive species populations is one possible lease modification.

4. Sensitive species populations should be resurveyed at the time of lease renewal for monitoring. GPS data should be collected each cycle, either as baseline, or for comparison with baseline. Numbers of plants (or ramets) should be estimated. If there are many occurrences of the same species on the lease, and those occurrences are subjected to similar grazing regime, one or more occurrences should be selected for monitoring. This choice should be documented so that the same occurrences will be observed with each lease renewal cycle.
5. No new grazing leases will be issued in listed or sensitive species habitat unless there is evidence that the species benefits from grazing or grazing has no detrimental effect. If there is compelling reason to consider grazing, and there is no preexisting information about grazing impacts, a year-to-year lease arrangement with an accompanying enclosure study can be instituted to reveal grazing effects. Only when such a study shows that grazing is compatible with the sensitive species, will a standard long-term lease be issued. Alternatively the sensitive species occurrence can be fenced and left ungrazed.

Minerals

Locatable minerals (subject to the 1872 Mining Law)

1. Evaluate each Notice and Plan of Operations for the presence of sensitive species.
2. Work with Field Office geologist to have claimants modify Plans of Operations that will impact sensitive species. Avoidance of the population will be the usual modification. Similarly work with geologist to persuade claimants to modify their Notice-level operations. (Unlike Plans, Notices can not be rejected. So BLM 's ability to affect Notice level operations is less than for Plan level operations.)
3. Seek mineral withdrawals in those cases where a particular sensitive species population is critical to the conservation of the species, and there is a likelihood of mineral entry. Because the process to initiate a withdrawal is time consuming, and the Department is resistant to withdrawing land from mineral entry, prioritize mineral withdrawal efforts. Document these priorities in the RMP.

Saleable and leaseable materials:

These are discretionary BLM actions (unlike activities under the 1872 Mining Law) and will be treated like other ground disturbing activities that have potential to impact sensitive species. Avoidance will be the principle that guides sale and lease actions. For oil and gas leases (a very rare occurrence in our area), slant drilling is a potential tool for avoiding sensitive species impacts.

Lands Actions

1. **Acquisitions:** Acquisitions will be considered on a case by case basis if significant recovery habitat for listed or sensitive species becomes available from willing sellers. Listed species will generally take priority, but in many areas listed and sensitive species share habitat. Where recovery plans exist, they will be used as guidance for acquisition priorities.
2. **Disposals:** In general, BLM will retain sensitive species habitat. However in instances where the habitat considered for disposal makes little contribution to the species' overall viability, and especially for those species that are relatively widespread and abundant, land disposals will be evaluated on a case by case basis. Such a disposal will only occur after an evaluation of the species' status throughout its range and with the approval of the BLM State Director, in accordance with California BLM policy.
3. **Rights-of-way, leases:** These are discretionary BLM actions. In most cases the proponent can accomplish their goal with adjustments to the project that avoid impacts to sensitive species. Usually modifications to project design can avoid impacts.

Recreation

Motor vehicles: Where motor vehicle activity is occurring off-road in sensitive species habitat, take measures to prevent OHV impacts to sensitive species. Measures may include designating open and closed roads, signing, soil and rock berms, boulder or other barriers, fencing, closure orders, enforcement, etc. Occasionally roads may need to be closed for rare plant protection even though the roads themselves can be driven without affecting sensitive species. Some roads provide access to areas where drivers routinely take their vehicles off-road. In some instances closing these roads is the only practical way to prevent the off-road activity.

Limit vehicle access on existing roads where vehicles are causing sensitive species habitat degradation; particularly erosion and dumping. Measures may include signing, berms, rock or other barriers, fencing, closures, putting roads to bed, enforcement, etc.

Horseback, mountain bike and foot travel: New trails and facilities associated with recreation should avoid sensitive species habitat, except when a comprehensive environmental assessment establishes that the recreational use is compatible with species conservation. In some cases trails may be deliberately placed in sensitive species habitat to provide opportunities for interpretation. Again potential negative effects must be carefully evaluated. Measures to avoid negative impacts from visitation should be incorporated in projects that bring recreational users into sensitive species habitat.

Where non-motorized recreational use is concentrated and may pose a threat to sensitive species, take measures to limit use to existing trails. Measures may include signing, fencing, closures, enforcement, etc. Where even the use of existing trails is leading to

negative impacts (accelerated erosion on trails affecting adjacent plant habitat for instance) evaluate rerouting trails. In some instances there may be no alternative route that will lessen impacts. If some other measure (like mechanical reinforcement of the trail to reduce erosion) is not feasible, abandoning and rehabilitating that portion of the trail should be considered.

Wildfire

Have a modified suppression plan for each listed species habitat area. These plans will be included in BLM's Cooperative Fire Protection Agreement with CDF&FP. Include sensitive species habitat with listed species habitat as appropriate. Probably only the most significant of sensitive species populations will warrant such protection, unless the population can benefit from geographic association with listed species. A BLM resource adviser will be assigned to fires where there is reason to anticipate impacts to sensitive species, whether or not a modified suppression plan is in place. In wildfire situations, modified suppression plans may not be implemented without a resource adviser on site to raise conservation issues.

Fuels Treatments for Public Safety

Fuels treatments in sensitive species habitat should be designed to have the minimum impact on the sensitive species. Modifications of fuels projects that may reduce impacts include:

1. avoidance of the species habitat,
2. avoidance of the species, (e.g., creating buffers around individual shrubs or clusters of shrubs),
3. temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. hand clearing instead of the use of heavy equipment,
5. mastication instead of blading (if heavy equipment is used),
6. fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in sensitive species habitat, unless it has been demonstrated that such clearing methods constitute conservation measures for that species.

Two basic strategies of fuels modification are commonly practiced:

1. Fuel breaks provide linear gaps in otherwise unbroken fuels to anchor fire fighting efforts. Often these projects are 200' wide or less, but some fuel breaks are wider. Fuel breaks are unlikely to modify an entire ecosystem. Habitat fragmentation is one possible impact of fuel breaks.
2. Broad scale fuels reduction projects change the fuels profile over a large area. The overall quantity of fuels available to a potential wildfire is reduced. Broad scale fuels reduction often involves converting vegetation to an earlier seral stage. Especially with repeated treatments, such landscape scale projects can sometimes lead to a long term or permanent conversion of vegetation to a different plant community. Where such type conversions occur, virtually every plant species will be affected. Pollinators and herbivores are likely to be affected as well. All such effects should be evaluated in an environmental assessment.

Timber/Fuelwood Sales/Plant Collecting

Proposals for timber and fuelwood sales should rarely be issues for the listed species that occur on public land managed by Folsom F.O.; the listed species are mostly found in chaparral communities. If there is a proposal for logging or fuelwood sales in listed species habitat, it will be denied, unless it can be demonstrated that it will have no impact, or a beneficial impact, for those listed species.

On the other hand several sensitive species of Folsom F.O. can be found in forest sites. Fuelwood and timber sale boundaries can be adjusted to avoid these species in most cases. In cases where species avoidance is not practical and the project has merit, the potential impacts to the sensitive species must be carefully assessed. Several of the sensitive species that occur in forest habitats are annuals or herbaceous perennials that die back to a rootstock each year. In those cases, timing the sales so that activity occurs well after seed set for annuals, and vegetative growth and seed set for perennials, is a strategy to lessen impacts. All phases of the project will be considered including constructing landings and skid trails, falling and skidding, and rehabilitation operations like site preparation and planting. As with all other BLM actions in which the environmental assessment process shows a potential negative effect to one or more sensitive species, such a sale will only occur after an evaluation of the species' status throughout its range indicates the effect on the species will be minor, and with the approval of the BLM State Director, in accordance with California BLM policy.

Weed Management:

All forms of weed management have the potential to impact non-target species. Folsom Field Office weed management is focused on areas of high recreation use, and areas where special status species habitat is being degraded by weeds. When weed management occurs in the habitat of special status species, it will almost always be with the goal of improving habitat for that species, or other associated special status species. In special status species habitat the most precisely targeted weed control methods will be

used preferentially over those that affect a wider range of species. For instance hand pulling will be favored over mowing if the control of a single weed species is the desired result, and there is sufficient person-power to accomplish the goal by hand pulling. Monitoring of the effects of a weed control method on a special status species should be employed whenever a weed control method is used in special status species habitat, and the effects of that method on that special status species have not been established.

Use of herbicides to combat weeds in special status species habitat should only occur if:

1. Weeds are impacting special status species.
2. The other feasible weed control methods have been tried, and they have been found to be unsuccessful.
3. The herbicide is selective and its action spectrum is such that it should not impact any special status species in the project area, or the herbicide can be applied in a highly targeted manner that will prevent uptake by special status species (e.g., injection of herbicide into woody weed species may meet this criterion).
4. Non-selective herbicides will only be considered for use in areas without special status species. Such non-selective herbicide use should only be considered if effective selective herbicides are not available.

If these criteria are met and the decision to use an herbicide is made, then general treatment with herbicides will be deferred until after a small scale trial of the herbicide, to demonstrate the effects of the herbicide on site on special status species present. A monitoring plan will be developed and it will include at a minimum these kinds of monitoring:

1. effectiveness of the treatment in reducing the target weed(s)
2. impacts to special status species in the area

Conservation Plans for Individual Special Status Species

The special status species discussed in detail below are those species for which BLM manages significant habitat and for which BLM management plays a meaningful role in the conservation status of the species.

Allium jepsonii

Proposed Action

Objective

To manage the Jepson's onion population that occurs on Bureau of Land Management administered lands and adjacent private land so it remains viable and stable.

Species Specific Goals

1. Establish and mark the corners of the BLM parcel that supports *Allium jepsonii*. There are well over 500 plants in the immediate vicinity of the BLM parcel, which is only 8 acres. But without more precise information as to the location of the corners of the property, which are apparently unmarked, it is difficult to tell how many of these plants are indeed on public land. The majority may be on adjacent private land. Use the boundary information to get public-land-specific baseline information about the population, e.g., numbers of plants on public land.
2. Attempt to establish a relationship with one or more neighboring landowner to allow administrative access to the BLM parcel. The parcel is landlocked by surrounding private land.
3. Investigate surrounding land use, especially grazing, to determine if there are impacts to *Allium jepsonii* on federal land.
4. Attempt to establish a relationship with one or more neighboring landowner to let us know in the future if there are land use changes that might affect the onion population on federal land.
5. Attempt to establish relationships with adjacent private landowners that own land that supports portions of the *Allium jepsonii* population, to encourage them to manage their land in a manner that is compatible with the continued growth of *Allium jepsonii* on their land.
6. Monitor to assess grazing impacts if grazing appears to be a factor. Set up two plots, and fence one of them, to prevent grazing by domestic animals. Monitor both plots for impacts. If feasible, consider comparing grazed private land to ungrazed public land.
7. Manage consistent with the results of monitoring. Fence the entire parcel if monitoring indicates that grazing is having a negative impact on the population, and grazing of adjacent land will continue. Continue monitoring after fencing. On the other hand, work with neighboring landowners who graze to maintain grazing, if monitoring indicates a positive impact from grazing. Continue monitoring after any change in the grazing regime that might have an impact. Use adaptive management to refine management.

Species Specific Avoidance of Adverse Impacts

Lands actions

Retain parcel in public ownership.

Grazing

Because the 8 acre BLM parcel where *Allium jepsonii* occurs is unfenced and neither the corners nor the boundaries are marked, this parcel has been grazed with surrounding private land. Apparently most of the use is by horses. Grazed plants have not been observed in several site visits during the spring growing season. Dale McNeal, University of the Pacific botany professor and expert on California onions, feels that grazing generally is not a problem for most California species of the genus. If evidence of negative impacts from grazing are observed (e.g., a pattern of plants that have been clipped by herbivores for instance), then systematic monitoring for impacts should be undertaken. If observation alone appears to show clear indications that the grazing is having a negative impact, the parcel should be surveyed and fenced. However the fence should be gated, to allow the resumption of grazing if unanticipated negative effects from the removal of grazing appear.

Fire Suppression

Authorize no actions for this parcel that might have a negative impact on *Allium jepsonii*. Probably because of the size of this parcel, no actions have been proposed in the last 12 years, and none are anticipated.

Wildfire

The *Allium jepsonii* site atop Table Mountain in Tuolumne County has shallow rocky soils that support almost exclusively herbs. Fires in this fuel type are likely to travel fast and burn quickly, and because of short duration, cause little deep heating of the soils below the surface. The bulb of *Allium jepsonii* is likely to be unaffected by most fires.

Discuss with CDF the inclusion of the small parcel (8 acres) that BLM manages atop Table Mountain that supports *Allium jepsonii*, in modified suppression plans. It would be desirable to have a modified suppression plan that included the avoidance of: (1) vegetation clearing by tractor work, and (2) the application of chemical retardants. For CDF it may be administratively difficult to have modified suppression plans for such small parcels. The discussion should include modifying suppression for the rest of the population of *Allium jepsonii* which occurs mostly on private land, although such an extension would probably need the ratification of affected private landowners as well as CDF.

Allium tuolumnense

Proposed Action

Objective

To manage the Rawhide Hill onion populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Extend the Red Hills ACEC (or establish one or more additional ACECs) so that additional populations of Rawhide Hill onion, along with other associated rare serpentine species, are given an increased level of protection. Areas to be considered for inclusion include the Red Hills east of Don Pedro Reservoir, Rawhide Hill, Priest Grade and Woods Creek.
2. GPS known populations of the species as a baseline for monitoring. Because more than 65 occurrences or suboccurrences (separate mappable units within ¼ mile of other mappable units of the same species; such units in close proximity are lumped together by CNDDDB into a single numbered CNDDDB occurrence) have been sketch-mapped in the Red Hills alone, this GPS workload will be substantial.
3. Once a GIS baseline is established, choose specific occurrences for monitoring, based on potential threats in the area of the occurrence.

Species Specific Avoidance of Adverse Impacts

General

Because of their growth form, onions are often less susceptible to disturbance than many other species. Because their perennating organ is protected by soil and rock, and often most of their reproduction is asexual and subterranean, onions can withstand many kinds of surface disturbance. This species, because it completes its above-ground seasonal life cycle by May or June, also avoids impacts from surface activities in summer and fall.

The serpentine habitats where this species grows are rocky and infertile and have little economic value. Therefore demand for potentially impacting activities in this habitat is low, relative to demand in other ecosystems.

Grazing

Grazing has little impact on most onions (McNeal, pers. comm., 2004). Observations of the plants growing in grazing leases shows little if any clipping of plants by herbivores.

Mining

Under the 1872 mining law, mining can occur almost anywhere on public lands, unless the lands are specifically withdrawn from mineral entry. In the Red Hills ACEC, an operator would have to file a Plan of Operations and have it approved by BLM, before he could use heavy equipment to mine. BLM would not approve a Plan of Operations that had significant impacts to a sensitive species. In areas without ACEC status, only a notice from the operator to BLM is required. However BLM has 15 days to respond before operations begin, and usually we can work with the operator to limit environmental damage.

Lands

An existing 200 acre lease for a shooting area in the Red Hills to a black powder organization was considered for patent (transfer into private ownership) in 1995. Intensive surveys found substantial populations of Rawhide Hill onion within the lease area. A patent was eventually granted. The area of the patent was scaled back from 200 acres to 62.5 acres and the shape of the patented parcel was drawn so that BLM would retain over 90% of the *Allium tuolumnense* plants that were growing in the original lease area, as well as other significant rare plant habitat.

The 1985 Red Hills plan states, “Protect 95 and 100 percent of the habitat of Rawhide Hill onion from discretionary surface disturbance in the IUZ [intensive use zone] and RUZ [restricted use zone], respectively. The restricted use zone was a precursor of the Red Hills ACEC, which was originally 4500 acres. The intensive use zone was a 2600 acre area, envisioned at that time as an area where recreation like OHV activity, and conservation, were to coexist. Experience with this management strategy showed that the degree of control of recreational use needed to permit conservation in the IUZ, was not attainable. A plan revision in 1993 eliminated the IUZ concept, and transferred the acres that had been in the IUZ to the Red Hills ACEC. Therefore our current plan calls for 100% of Rawhide Hill onion habitat in the Red Hills ACEC to be protected from discretionary surface disturbance.

Arctostaphylos nissenana

Proposed Action:

Objective

To manage the Nissenan manzanita population that occurs on Bureau of Land Management administered lands in Tuolumne County, so it remains viable and stable. This is a disjunct population; all other known populations are in El Dorado County.

Species Specific Goals

1. Finish GPS work started in 2002 to delineate population boundaries.
2. Arrange for testing of the susceptibility of the species to the fungal root disease, *Phytophthora cinnamomi*. Such testing might be coordinated with US Forest Service, because they manage many populations of the species.
3. If testing indicates susceptibility to *Phytophthora cinnamomi*, develop a plan to prevent spread of the fungus to the BLM managed population.
4. Work with Columbia College to learn more about their previous work on the species. Unless and until the species is shown to not be susceptible to *Phytophthora cinnamomi*, work with Columbia College biology department on measures to prevent disease spread that could result from their work in the area.

No work should be allowed during the wet portion of the year when the pathogen is most easily spread.

5. Work with CDF to assure that there is good awareness of the need for modified suppression in the area of the ACEC (see avoidance below).
6. This species population is protected within a designated Area of Critical Environmental Concern, which will be called here the Nissenan Manzanita ACEC. (In the designating document, the “Folsom Resource Area Sierra Management Framework Plan Amendment (MFP)”, 1988, the conserved species is called a different common name, i.e., El Dorado Manzanita, and the ACEC itself is left unnamed.) Write an ACEC management plan. Up to this point a management plan for the ACEC has been relegated to a low priority, because the population is healthy, and it is protected from many impacts because of its location.

Species Specific Avoidance of Adverse Impacts

General

If experimental trials indicate that Nissenan manzanita is susceptible to *Phytophthora cinnamomi*, institute measures to prevent spread of the disease. These measures should include at a minimum a policy of no public access during the wet season, and no soil movement onto the parcel at any time of year. Wet season administrative access should be minimized, and should incorporate hygiene measures, like cleaning boots and the use of 70% isopropyl alcohol to decontaminate boots before entering the parcel. To prevent soil movement onto the parcel, no equipment should be allowed to enter the parcel without complete cleaning beforehand, e.g., a power wash followed by inspection.

Wildfire

Besides disease, fire suppression may be the greatest single short term threat to the species. The Nissenan manzanita community itself is a brush community that would carry a fire, although compared to other brush communities, fuel loading is low. However surrounding the pure Nissenan manzanita stand are very dense brush and tree stands with high fuel loading. Development is occurring on some of the ridges adjacent to the ACEC, meaning that a fire at the ACEC will threaten homes. And of course Sonora is right below the ACEC. CDF will fight any wildfire around the ACEC very aggressively. Tractor line construction could wipe out a large portion of the *Arctostaphylos nissenana* population. Not only would tractor operations kill plants (this species does not have a burl and presumably does not sprout) but it might alter the surface of the substrate to make it less favorable for *Arctostaphylos nissenana* and more favorable for competing vegetation including noxious weeds. Equipment might bring in weed seed. And possibly most important, the tractor work, by eliminating fire effects, may prevent *Arctostaphylos nissenana* seed from being stimulated to germinate. The present stand probably began as seedlings that followed the Rotelli fire of 1963 (Gankin, 1983). The use of retardant to slow a fire can also alter the competitive balance among

plant species. Because most retardant slurries contain as much as 10% ammonium phosphate fertilizer, the post-fire environment where retardant is dropped will be hospitable to a much wider range of plant species, including weedy species. Many common species including weedy species are normally suppressed by the naturally infertile substrates on which *Arctostaphylos nissenana* grows. Hand line construction will kill individual plants, but will not disturb the soil to nearly the same extent as tractor lines. And generally hand line construction will affect a much smaller area, because hand lines are much narrower than tractor lines.

Wildfire by itself could produce complete stand replacement. This species lacks a burl, so individual shrubs will not resprout after a fire. But there is evidence that the species regenerates from seed after fire, so a single wildfire itself is not likely to be injurious to the population. Successive wildfires, with a short interval between fires, could result in the depletion of the population. If the second fire occurs before the new cohort of plants growing up following the first fire has had sufficient time to mature and produce the seed needed to restock the seed bank, there may not be enough seed to replace the plants killed by the second fire.

Mining

Because the *Arctostaphylos nissenana* population is within an ACEC, all mining beyond casual use will require a Plan of Operations. This affords the population a degree of protection, because BLM has authority to reject a Plan of Operations because of environmental impacts. However BLM cannot completely preclude the opportunity to mine granted under the 1872 Mining Law.

Balsamorhiza macrolepis macrolepis

Proposed Action:

Objective

To manage the Big scale balsamroot populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been paper-mapped.
2. Continue surveys along the ridge of Hunter Mountain for additional occurrences.
3. Monitor using repeated GPS mapping to verify the stability of populations.
4. Monitor for the movement of weed species into the habitat of *Balsamorhiza macrolepis macrolepis*. If new weed infestations are discovered, monitor effects of weed competition on big scale balsamroot.

Species Specific Avoidance of Adverse Impacts

Grazing

Most of the habitat of *Balsamorhiza macrolepis macrolepis* is included in one large grazing lease (Hunter Valley, #04210, Griffith). One small occurrence occurs on the adjacent lease (Visher, #04181). Grazing at the levels that have historically occurred at Hunter Valley Mountain appears to be compatible with healthy populations of *Balsamorhiza macrolepis macrolepis*. Plants in grazed pastures do not appear clipped or otherwise impacted. Populations appear healthy.

Fuels Reduction

A prescribed fire program was attempted on Hunter Valley Mountain during the 1990's. Attempts to burn units primarily on the east slope of the mountain during several fall seasons resulted in only a small acreage burned. Often repeated ignitions would not produce a sustained fire. Then in summer of 2000 virtually the whole mountain burned in the Hunter burn. Bear Valley is one of only a small number of very small communities (hamlets) that are at risk from a fire on the mountain. It is unlikely that prescribed fire will be used extensively in the future; certainly there will be no need for prescribed burning in the immediate future. Observations of a population that burned in the wildfire of 2000 indicate that the species withstood that burn without ill effects. Because it grows surrounded by a chaparral community that is prone to wildfire, it would be surprising if the species were unable to tolerate periodic fires.

Wildfire

Fire suppression could impact this species. However there are many subpopulations spread over a large area, and it is unlikely that suppression efforts would affect a large proportion of plants. A modified suppression plan does not seem appropriate.

There appears to be little mining interest in Hunter Valley Mountain.

Chlorogalum grandiflorum

Proposed Action

Objective

To manage the Red Hills soaproot populations that occur on Bureau of Land Management administered lands so that they remain viable and stable

Species Specific Goals

1. Manage populations within the existing Red Hills ACEC and the Pine Hill Preserve for the conservation of this species and the entire ecosystems of which the species is a part. (See the Red Hills section and the Pine Hill Preserve section of the conservation strategy.)

2. Conserve this species where it occurs on substrates other than serpentine and gabbro. Often these are sites with ponderosa pine or white leaf manzanita dominant, found at higher elevations than the serpentine and gabbro occurrences.
3. Work with Indian Grinding Rock State Park if they move forward with a planned prescribed burn of BLM land adjacent to the park, to investigate the impact of prescribed burning on Red Hills soaproot.
4. Work with Indian Grinding Rock State Park if they acquire adjacent BLM land with Red Hills soaproot, to address management of the species.
5. Afford similar protection to other serpentine areas in Tuolumne County with a flora similar to that found in the Red Hills, either by including such areas within the Red Hills ACEC, or by flagging those areas for conservation management. Candidate areas include Rawhide Hill, Woods Creek, Peoria Basin, and the extension of the Red Hills east of Don Pedro Reservoir.

Summary Information on Status of Species on BLM Land

Given current information, overall management of Red Hills soaproot on BLM lands can be summarized in this way:

1. BLM manages land that supports over 500,000 plants of this species. This figure is supported by mapping and sampling done in the Red Hills in 1983 by BioSystems Analysis Inc.
2. The great majority of these plants grow in areas that BLM has designated for ecosystem protection, either in the Red Hills ACEC or in the Pine Hill Preserve.
3. The Red Hills ACEC will be extended, affording protection to additional plants.
4. Red Hills soaproot is relatively common and widespread when compared to other special status species. BLM should continue to collect and share occurrence information. With additional information supplied by BLM and other agencies (USFS for instance), CNPS may determine that its current List 1B status is not warranted. If BLM continues to find additional occurrences, and CNPS does not take action, there exists the option of presenting evidence to the State Director to support removing the species from the BLM sensitive species list if that is appropriate.

Species Specific Avoidance of Adverse Impacts

Lands Actions

The BLM occurrences of Red Hills soaproot that are found on more common geologic substrates, rather than serpentine or gabbro, are subject to pressures for economic uses. These parcels have more fertile soils and are often forested. The public land parcels where these occurrences are found are often small and isolated. Proposals for the use of

such parcels (usually from private citizens) include timber harvest, fuels reduction, exchange for residential development. Three such parcels of BLM land with Red Hills soaproot have been affected by land exchanges. Two parcels were exchanged in their entirety. A portion of the third parcel was exchanged to settle a trespass, with the remainder of the parcel retained to conserve a portion of the soaproot population. Plants were salvaged from the exchanged portion. BLM continues to manage at least 7 populations of Red Hills soaproot that grow in association with similar plant communities.

Grazing

Grazing occurs on approximately 1200 acres of the Red Hills ACEC; approximately 17% of the ACEC. About 900 acres is potential Red Hills soaproot habitat (judging from soils and associated species). No grazing occurs on the rest of the ACEC. Red Hills soaproot is well distributed throughout the Red Hills. One other Tuolumne County parcel that supports a small population of Red Hills soaproot is included in a grazing lease. A portion of a different grazing lease that once included Rawhide Hill and a population of Red Hills soaproot, was cancelled in 2000. The Red Hills soaproot population known from east of Don Pedro Reservoir is not grazed. The extensive populations of Red Hills soaproot in the Pine Hill Preserve in El Dorado County are ungrazed. Also the BLM populations of Red Hills soaproot found on substrates other than serpentine and gabbro are not grazed.

An unreplicated study in the Red Hills of grazing impacts to Red Hills soaproot indicates that cattle grazing has an impact. During the study more leaves were clipped in the grazed area than in the ungrazed area. And even those leaves that were not clipped averaged shorter in length where grazing occurred, presumably because entire plants were affected when a portion of the leaves were grazed. There were more plants per unit area in the ungrazed area, and the difference increased over the course of the study. Because the unreplicated nature of the study, site differences may have played a role in the outcomes observed. BLM will not issue new grazing leases for lands supporting Red Hills soaproot unless new monitoring establishes that grazing does not have a negative impact to the species.

Clarkia biloba australis

Proposed Action:

Objective

To manage the Mariposa clarkia populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been sketch-mapped. Most populations that have been recorded occur along Highway 140 or the Merced River Trail.
2. Many of these occurrences have been mapped linearly (along the highway or trail), but their upper or lower extents are unknown. No one has climbed the steep canyon walls to do this work. This work would give some useful information, but it should be a low priority. As a basis for monitoring it would be of limited usefulness, because of the difficulty of repeating the procedure.
3. Regularly monitor occurrences by geographic extent to assess the stability of the population. Until there is evidence of decline, monitoring should be at long time intervals (for instance 10 years---see Monitoring below). Windshield observation of greatly reduced numbers of plants (or the absence of plants) in successive years (especially if there has been no unusual weather that might account for low numbers) should trigger additional monitoring.

Species Specific Avoidance of Adverse Impacts

General

Most of the activity in the Merced River Canyon occurs just above river level where roads and trails and the river itself make access easy. Impacts to *Clarkia biloba australis* at the base of the canyon are likely, due to road and trail maintenance work and recreational use for instance. The species favors disturbances and other poorly vegetated sites, and it can be found on road edges, cut banks and fill slopes. Effort expended trying to control these impacts is not well spent. Although road/trail maintenance activity may wipe out plants and remove seed, it generally produces new potential habitat (bare soil) that can be reinvaded by *Clarkia biloba australis* from adjacent seed sources. Foot traffic is likely to have similar effects.

If ground or vegetation disturbing activities that will affect *Clarkia biloba australis* habitat can be timed to occur between August and November, and if the activities do not involve substantial movement of soil, effects on the species may be minimal. During that season the species exists as a seed bank, so if the seed bank condition is not substantially altered (e.g., removed, buried too deep, etc.) the next year this annual should return.

Although there is a great deal of activity in the lower canyon where most *Clarkia biloba australis* occurrences have been mapped, the species is not confined to this zone, and many plants occur beyond the reach of these activities.

Recreation

Recreation activities, especially river rafting, trail travel (hiking and mountain biking mostly) and car camping, occur in the canyon bottom. There are developments in conjunction with these activities; put-ins, take-outs, parking and camp sites.

New recreational developments will be evaluated for impacts to *Clarkia biloba australis* before construction. Maintenance of the existing infrastructure will not be limited if it impacts some plants of this annual species.

Road Work

Herbicides are being applied to the roadside of Highway 140 by Caltrans. A 1994 MOU signed by Caltrans, BLM, USFS and PG&E established guidelines for spraying along the highway from the Bear Creek Bridge to El Portal. Spraying is limited to 8' from the pavement edge, except for site specific brush removal which can extend to 12' from the pavement. Two ¼-mile no-spray zones were established for monitoring *Clarkia biloba australis*. Caltrans marked these zones with paddles, and their herbicide applicators have been instructed to avoid these zones. Initial observations did not find problems in terms of herbicide drift, or spray in restricted areas. Virtually all vegetation, including *Clarkia biloba australis* evidently, was killed in the spray zones.

Weed Control

There are proposals to spray Transline to control yellow starthistle (YST) in the Merced River Canyon. If such spraying occurs on BLM land, occurrences of *Clarkia biloba australis* will be excluded, unless it is shown that these three conditions all apply: (1) YST is negatively impacting specific *Clarkia biloba australis* occurrences, (2) manual methods of removing YST are impractical in specific instances (for instance it might cause too much disturbance to *Clarkia biloba australis* plants) and (3) it is definitely determined that Transline can be applied with no negative impact on *Clarkia biloba australis*, which would be consistent with published reports of the herbicide's action spectrum. Undoubtedly this will only be established if BLM, or another agency with land in the Merced River canyon, undertakes an experimental program of Transline spraying, with accompanying monitoring of impacts to Mariposa clarkia.

Clarkia rostrata

Proposed Action

Objective

To manage the Beaked clarkia populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been paper-mapped. Survey other BLM ground with similar habitat conditions.
2. Regularly monitor occurrences by geographic extent to assess the stability of the population. Until there is evidence of decline, monitoring should be at long time intervals (for instance 10 years----see Monitoring below). Observation of reduced numbers of plants (relative to previous observations) in successive years (especially

absent unusual weather that might account for low numbers) should trigger additional monitoring.

3. If grazing is suspected of negative impacts on an occurrence of the species, compare the grazing regime at that occurrence with the grazing regimes on lands supporting vigorous populations of *Clarkia rostrata*, like lands surrounding Lakes McSwain and McClure. If appropriate, adjust the grazing regime to resemble the grazing of pastures where stable viable populations of the species occur. Monitoring the population before and after the change should accompany any adjustment of grazing intended to benefit the species.

Species Specific Avoidance of Adverse Impacts

General

If ground or vegetation disturbing activities that will affect *Clarkia rostrata* habitat can be timed to fall between August and November, and if the activities do not involve substantial movement of soil, effects on the species may be minimal. During that season the species exists as a seed bank, so if the seed bank condition is not substantially altered (e.g., removed, buried too deep, etc.) the next year this annual species should return.

Grazing

Cattle grazing is the main land use occurring in the blue oak savannah habitat of *Clarkia rostrata*. BLM has several grazing leases in *Clarkia rostrata* habitat. Observations of those leases and especially adjacent private land shows a clear pattern of *Clarkia rostrata* populations persisting in grazed situations. In fact some very extensive and dense populations of *Clarkia rostrata* occur on cattle ranches in the vicinity of Lake McSwain and Lake McClure. (Some of this grazed land may be managed by the Merced Irrigation District also.) On the other hand fenceline effects have been observed where ungrazed pasture displays more *Clarkia rostrata* than adjacent grazed pasture. Clearly grazing is compatible with the species, but the timing and intensity of grazing may influence effects on *Clarkia rostrata*.

Cryptantha mariposae

Proposed Action:

Objective

To manage Mariposa cryptantha populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Work with the landowner east of the BLM parcel north of Copperopolis, so that no further roadwork will occur without BLM supervision.

2. Conduct surveys of the serpentine habitat along the Bagby Grade for *Cryptantha mariposae*.
3. Conduct surveys in the Red Hills for *Cryptantha mariposae*.
4. Conduct surveys on Rawhide Hill for *Cryptantha mariposae*.
5. If necessary, investigate the installation of physical barriers, fencing or other means, to prevent vehicles or equipment from impacting the plants close to the road through the parcel north of Copperopolis.

Species Specific Avoidance of Adverse Impacts

Land exchanges

The only confirmed population of *Cryptantha mariposae* on BLM land sits on a parcel that was considered for a land exchange. When the population was discovered during a field survey preliminary to writing the environmental assessment, the boundaries of the land exchange were adjusted. The proposed 120 acre exchange was reduced to 80 acres. BLM retained the 40 acres that contained all the significant rare plant habitat (other sensitive species were found as well).

Road Work

A road through the 40 acre parcel near Copperopolis that supports *Cryptantha mariposae* has been maintained by a private party without authorization. BLM will try to ascertain the parties involved and prevent any further unregulated work of this kind that could pose a definite threat to *Cryptantha* plants close to the road.

Grazing

A number of reports of sightings of *Cryptantha mariposae* refer to Highway 49 north of the Merced River. None of these are geographically specific. Occurrences of *Cryptantha mariposae* may occur on the serpentine within the Guisto grazing lease east of Highway 49. The lessee passed away recently and no relatives or others have requested the continuation of grazing of the lease area as of yet. Surveys for *Cryptantha mariposae* should occur before the lease is extended to another lessee. Because the growth form of the plant is small and bristly, it would not be expected to be a preferred cattle forage.

Horkelia parryi

Proposed Action

Objective

To manage the Parry's horkelia populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS all populations of *Horkelia parryi*. (All current data is in the form of paper maps). Survey other appropriate habitat especially in Calaveras and Mariposa counties (North Fork Merced River drainage).
2. Provide updated maps of plant habitat along Timbrush fuelbreak to the California Department of Forestry (CDF) for use when they do maintenance on the fuelbreak.
3. Monitor selected occurrences along Timbrush fuelbreak for long-term vehicle and equipment impacts. Timbrush fuelbreak gets substantial off-road vehicle use from a staging area established by U.S. Forest Service.
4. Protect a portion of the habitat of the species along Timbrush fuelbreak from vehicle and equipment impacts, if Timbrush fuelbreak is maintained as an off-road vehicle area, and monitoring reveals a downward trend for the species locally. Continue monitoring and use adaptive management in response to monitoring data.

Species Specific Avoidance of Adverse Impacts

General

Seasonal avoidance of impacts to above-ground portions of this species is not easy to accomplish because *Horkelia parryi* has no clear cut dormant season like there is for many herbaceous perennials in the Sierra foothills. Plants support above-ground foliage most of the year. On the other hand the below-ground woody rhizomes of this species are robust, so damage confined to the above-ground portion of plants is unlikely to kill whole plants. Vegetative reproduction also allows this species to recover from some forms of damage.

Timber Sales

Timber sales have occurred in forested *Horkelia parryi* habitat. Roads, skid trails, landings and slash piles are likely to have the biggest impact on the species and should be placed to avoid the species. Heavy equipment travel may also have damaging effects, especially with increasing soil moisture and corresponding compaction. If the species can not be avoided entirely, the sale should be scheduled when soils are dry. Complete avoidance is the preferred alternative.

Fuels Reduction

Fuels reduction can favor *Horkelia parryi*, by reducing light competition from overstory shrubs. Even some areas once bladed by a caterpillar tractor are observed to support the species. Deep blading that displaces rhizomes will negatively affect the species, at least for the short term. Fuels reduction by manual means (for instance chain saw) is the preferred alternative. The species is likely to tolerate mastication using equipment with

minimal ground pressure. If such a project is undertaken, monitoring should be used to assess impacts.

Grazing

Horkelia parryi usually occurs associated with chaparral or open ponderosa pine forest. Especially for the most common habitat, chaparral sites on ridge tops, grazing usually is not occurring, even when sites are included in grazing leases. Evidence of grazing effects to *Horkelia parryi* has not been observed, but this may be due to cattle having little access to the habitat. Potential new grazing leases with *Horkelia parryi* habitat should only be considered if monitoring is established as part of the lease, and the lease is initially granted on a year-to-year basis, to permit adaptive management in response to monitoring.

Lomatium congdonii

Proposed Action:

Objective

To manage the Congdon's lomatium populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

- 1) Retain the public land where Congdon's lomatium occurs, even the small parcels in Calaveras County north of Copperopolis and at Carson Hill.
- 2) Afford similar protection to other serpentine areas in Tuolumne County with a flora similar to that found in the Red Hills ACEC, either by including such areas within the Red Hills ACEC, or by flagging those areas for conservation management. Candidate areas include newly acquired lands adjacent to the Red Hills ACEC, the Red Hills east of Don Pedro Reservoir and Peoria Basin.
- 3) Conduct a survey to establish the boundaries of the public land where the Carson Hill population occurs. This small population may straddle a public-land private-land boundary.
- 4) Coordinate management of lands in Peoria Basin with the Bureau of Reclamation. The two agencies have adjacent lands that support the species.

Species Specific Avoidance of Adverse Impacts

Land Exchanges

Land acquisitions over the last 15 years have added new *Lomatium congdonii* habitat to BLM lands in the Red Hills. Land supporting substantial *Lomatium congdonii* will not be transferred out of BLM ownership. One potential exception is the possibility of the

transfer of lands between BLM and the Bureau of Reclamation (BOR) in the Peoria Basin area. BOR has a larger presence in the vicinity of New Melones Lake and may be able to better manage these parcels. However BLM will only make this transfer if it feels that the special status species involved like *Lomatium congdonii* will receive appropriate (and perhaps superior) management.

Grazing

Only one grazing lease, the Poor Man's allotment in the Red Hills, supports a substantial population of *Lomatium congdonii*. Maintain the current grazing regime there that has allowed the species to persist. No new grazing leases should be authorized in the habitat of *Lomatium congdonii*.

Mining

Most but not all BLM *Lomatium congdonii* sites will be included in the Red Hills ACEC if proposed additions to the ACEC are carried through the RMP. These sites will have the protections from mining impacts afforded by the requirement for the filing of Plans of Operations before mechanized mining proceeds. For those areas without ACEC status, BLM will work with operators when they file Notices, to avoid impacts to the habitat of *Lomatium congdonii*.

Fuels reduction

No *Lomatium congdonii* occurrences are close to development, so it is unlikely that they would be considered for fuels reduction in the foreseeable future.

Lupinus spectabilis

Proposed Action:

Objective

To manage the shaggyhair lupine populations that occur on Bureau of Land Management administered lands so that they remain viable and stable

Species Specific Goals

1. Determine if shaggyhair lupine does occur in the Red Hills
2. If the species does occur in the Red Hills, get baseline information about its distribution
3. GPS populations that have previously only been paper-mapped.
4. Continue surveying for Shaggyhair lupine on serpentine habitat in Tuolumne and Mariposa counties.

Species Specific Avoidance of Adverse Impacts

Mining

Some mining activity has occurred in the core area of the distribution of shaggyhair lupine. Projects should be adjusted to avoid habitat whenever possible. If projects occur in habitat areas, reclamation should be adjusted to match the habitat requirements of this species. For instance, raw serpentine tailings make good habitat for this species.

Fuels reduction

Lupinus spectabilis often occupies ridgetop locations with rock outcrops of serpentine. These locations are conducive to the creation of fuelbreaks. Ridgetops that support shaggyhair lupine should only be considered for the construction of fuelbreaks, if the fuelbreaks can be constructed without negatively affecting habitat. Because *Lupinus spectabilis* habitat supports so little vegetation, there may be opportunities clear vegetation between habitat areas, and leave undisturbed *Lupinus spectabilis* habitat to function as part of the fuelbreak.

Road Maintenance (including herbicide treatments)

Lupinus spectabilis occurs in many locations along Highway 49. This is a major highway that receives a large amount of use and therefore requires frequent maintenance. The BLM should work with Cal Trans to avoid disturbance to known populations. Any new occurrences found along Highway 49 should be reported to Cal Trans.

Grazing

Lupinus spectabilis occurs on serpentine in the Guisto grazing lease east of Highway 49 north of the Merced River. This species has persisted and appears to have remained stable with a long history of grazing. Occurrences of the species on the west side of Highway 49 which is ungrazed, appear similar. The lessee of the Guisto lease passed away recently, and as yet there has been no request from relatives or others to continue grazing of the lease area.

Senecio clevelandii heterophyllus

Proposed Action

Objective

To manage Red Hills ragwort populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Bring additional habitat for the species into the protection afforded by ACEC status by including lands east of Don Pedro Reservoir in the Red Hills ACEC.

2. Stimulate interest in research to examine the taxonomic relationship between Coast Range and Sierran populations of *Senecio clevelandii*. Genetic studies would be particularly useful in this regard.
3. Pursue acquisitions of habitat for *Senecio clevelandii heterophyllus* in conjunction with the acquisition of habitat for *Verbena californica*.

Species Specific Avoidance of Adverse Impacts

Recreation

Trails in the Red Hills have been designed to avoid habitat of *Senecio clevelandii heterophyllus*. These trails are mostly used by horse riders.

Road work

Road improvements in the Red Hills (2004) have been designed to avoid direct impacts to *Senecio clevelandii heterophyllus*. For instance lead-off ditches were located away from plants of this species. A primary impetus for the road work is to reduce sedimentation into Horton Creek from the road that parallels it. The reduction in sedimentation should benefit the Red Hills roach, a minnow with important summer habitat in pools along Horton Creek. Horton Creek also supports a substantial occurrence of *Senecio clevelandii heterophyllus* that may also benefit from reduced sedimentation.

Road maintenance work done by the San Francisco Water and Power might affect *Senecio clevelandii heterophyllus* plants that lie adjacent to their service road for their facilities on the east side of Don Pedro Reservoir. Because this is a riparian species, it is unlikely plants would establish on the road itself. Signage and coordination with San Francisco Water and Power can reduce the probability that damage will occur during road maintenance.

Grazing

Grazing occurs in *Senecio clevelandii heterophyllus* habitat in the area east of Don Pedro Reservoir, in the Engler grazing lease. A portion of the *Senecio clevelandii heterophyllus* population lies along a creek along a major road to a Hetch Hetchy facility. Cattle sign indicates that this road gets substantial livestock use. Nonetheless the ragwort plants in this area look largely ungrazed. Upstream on some of the tributary drainages that also support *Senecio clevelandii heterophyllus*, there are reaches that cattle may not access because they are surrounded by thick brush. Ragwort plants along these isolated reaches look similar to those observed in more accessible areas. Observations of grazing on private land in the Red Hills also indicates that *Senecio clevelandii heterophyllus* is rarely taken by cattle under normal grazing conditions.

Wyethia reticulata

PROPOSED ACTION:

Objective

To manage El Dorado mules ears populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

The Draft Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills (Tarp, 1998) lists the following goals for protecting gabbro soil plants in general:

1. Stabilizing and protecting populations
2. Protection and management of habitat
3. Surveying and monitoring
4. Research
5. Public participation, outreach, and education

The specific goal for the conservation of *W. reticulata* is to protect five dense populations in each of at least three non-contiguous preserves within the southern and central zone, as well as adjacent unoccupied habitat that can be managed through controlled burns to support this plant in the future" (Tarp, 1998).

The Pine Hill Preserve Management Plan (currently being written) will further define management actions at the Preserve for the conservation of all of the listed and sensitive species that occur there. (Also see the Pine Hill gabbro species portion of the Listed Species Conservation Strategy, for actions relevant to *Wyethia reticulata*.)

Species Specific Avoidance of Adverse Impacts

Land Exchanges

Virtually all of the BLM land supporting *Wyethia reticulata* lies in the Pine Hill Preserve. Most of this land supports a suite of rare species, including 5 federally listed species. BLM manages these lands in coordination with 8 other agencies and groups for the conservation of the species and the plant communities. The small amount of land outside the Preserve that supports the species lies in the South Fork American River planning area. None of this land will be transferred out of public ownership.

Grazing

There are no grazing leases in the habitat of *Wyethia reticulata*.

Fuels Reduction

Fuels reduction will be conducted as part of the management of the Pine Hill Preserve. Conservation of the rare species of the Preserve, including the local endemic *Wyethia reticulata*, is the focus of the Preserve. Avoidance measures will be incorporated whenever feasible. When mastication for fuels reduction with a rubber-tracked tractor first occurred in spring 2005, monitoring of impacts to *Wyethia reticulata* was included as a part of the project. Because of the rhizomatous growth form of *Wyethia reticulata*, the species appears to regenerate after some forms of injury to its above-ground parts (e.g., fire).

Appendix C

Timber Harvest Criteria

The following timber harvest criteria have evolved from the several approved community based planning efforts by the Folsom Field Office.

- A. Identify timber management areas. The forest and woodland acres are identified in BLM intensive and extensive inventory systems. These are being added to and updated as specific management areas are identified under community based planning such as 'Inimim, Round Mountain, and Iowa Hill Forest Plans.
- B. Communicate and coordinate with outside government agencies, private organizations, citizens, and internal resource personnel to produce a viable, well informed forest and woodland management program. This cooperation and coordination is especially necessary while planning and budgeting the fuels/fire programs.
- C. Manage for old growth forests and factors.
- D. Follow BLM standards for environmental analysis on forest and woodland projects.
- E. Reflect a philosophy of 'no new road construction' for management actions that concern roads and access. Use only existing roads and trails. On a case by case basis where justifiable needs for new construction or reconstruction may be needed, it should be held to a minimum (usually less than 100 feet). As additional community based plans come forward, specific road and access plans may be developed giving detailed specifics on retention and non-use, or rehabilitation/obliteration. Adjacent land owners and other users of these forest roads should be encouraged to obtain proper legal rights.
- F. Where applicable, follow the appropriate BLM rules and regulations on valid mining claims filed prior to 1955. There are very few of these in the Folsom Field Office area, and in most cases would present no problem. The vast majority of claims are covered by the Surface Resources Act (Public Law 167), which provide the U.S. with the means to manage vegetative and other surface resources.
- G. Riparian Protection – Maintain a protection policy of 150 feet on each side of perennial streams, 75 feet on each side of intermittent streams (those partially dry during summer seasons but show a scoured channel), and 75 feet around meadows and/or other areas having unique characteristics.

- H. Exclude any spraying or application of biochemical products such as herbicides or insecticides for forest or woodland management. Future consideration of chemical application will be subject to public scoping, and the environmental process on a case by case basis.
- I. Utilize commercially valued vegetative products where forest structure changes are needed for forest or woodlands improvement, such as thinning for fire hazard reduction. Such sales shall follow BLM standards for vegetative contracts and sale of timber.
- J. Methods of Fuels Reduction – Choose the safest, most effective, least intrusive, and lowest cost method (e.g., use of fire, mechanical, and herd management) that meets fuels reduction goals for a specific project or area.
- K. Reforestation – Use natural reforestation where possible. If artificial means is required in cases of fire, or forest rehabilitation, plant diverse and native species. Use appropriate seed-zone specific nursery stock.
- L. Use following harvest method criteria:
1. No clear cutting.
 2. Salvage dead and dying only, from areas devastated by natural causes such as insects, disease, and fire.
 3. Selection – Thinnings and shaded fuel breaks (thinning from below).
 - Remove suppressed or smaller trees beneath the main canopy.
 4. Selection – Hazard trees.
 - Remove any tree presenting an imminent danger to human life or private, public, county, state, or federal property.
 - Remove trees within 150 feet of roads.
 - Remove dead trees within any designated fuel break.
 5. Selection – Fuelwood.
 - Limited to five cords for personal use only (no commercial cutting).
 - Authorized by vegetative contract or nonprofit free-use permit.
 - Handled on a case-by-case basis.
 - Limited to dead or downed trees only.

- Must have legal access.
 - Must be marked or designated by BLM.
6. Include standard and needed specific stipulations for any harvesting and address in specific contract stipulations any necessary mitigation actions as prescribed in the environmental analysis by other resource disciplines.
 7. Restrict any harvest by ground operation to slopes 40% or less.
- M. Management of Large/Coarse Woody Debris – Because this is not fully understood or defined in terms of what is biologically appropriate in quantity, quality, distribution, and temporal needs, use known and acceptable scientific information as it becomes available. Designate specific allocations as management applications are identified with community based planning. Use naturally dead trees in fulfillment of snag and large/coarse wood debris needs.
- N. Maintain plantations.

Table 1: Potential Surface Disturbances to Oil and Gas Activities

Disturbance	Number	Unit Surface Disturbance (acres)	Total Surface Disturbance (acres)
Exploratory Well	1 well	1 acre well	1
Well Pad	7 well pads	1.7 acres/pad	12
Development	5	1 acre/development	5
Access Road	1 x 0.25 mile	0.25 acres/mile	0.25
Facility	1	1 acre/facility	1
Access Road	1 mile	0.25 acres/mile	0.25
Hydrofracturing Well	10 wells	2.4 acres/well	24
		Total	49

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- L. Use the following harvest method criteria:
 - 1. No clear cutting.
 - 2. Salvage Dred and drying only. Green stems are required for animal habitat and as source of fuel for fire.
 - 3. Selection - Thinning and shelter and forest management plan based:
 - Remove suppressed or small trees between the main canopy
 - 4. Selection - Hazard trees:
 - Exclude any tree presenting an immediate danger to human life or property, public safety, water or forest resources
 - Remove trees within 20' of road
 - Remove dead trees within any prescribed fuel breaks
 - 5. Selection - Windfall:
 - Limited to trees which are retained for only fuel purposes
 - Limited to trees which are retained for habitat purposes
 - Limited to trees which are retained for fuel purposes
 - Limited to trees which are retained for fuel purposes

Appendix D

Reasonably Foreseeable Development Scenario

I. Summary

Based on an analysis of past oil and natural gas related activities within the Sierra Planning Area and the very small amount of federal mineral estate within areas of high development potential, we project that oil and gas development activities on federal mineral estate within the planning area will continue at a relatively minimal level (see Appendix A, Map 7). Overall, within the next 15 to 20 years, we project total surface disturbance due to all oil and gas activities on federal mineral estate to be no more than 48 acres (see Table 1). This estimate includes geophysical exploration (seismic), three exploration wells, five development wells and associated facilities, roads, and a transmission pipeline that could be linked to existing transmission lines within the area. One fourth of this disturbance, 12 acres, will be temporary, and would be mostly or completely reclaimed within a few months to a couple of years. Over the long term, both new and existing oil and gas related activities would eventually be abandoned, the lands would be reclaimed, and the sites would be restored to as near a natural condition as practical.

Table 1 Projected Surface Disturbance for Oil and Gas Activities

Description	Number	Unit Surface Disturbance (acres)	Total Surface Disturbance (acres)
Exploratory Wells			
Well Pads	3 wells	1 acre/well	3
Roads (40' wide)	3 x 0.5 miles	4.8 acre/mile	7
Development			
Well Pads	5	1 acre/well	5
Roads (40' wide)	5 x 0.25 mi	4.8 acre/mile	6
Facilities	1	1 acre/facility	1
Seismic (2 track x 18")	5 miles	0.36 acre/mi	2
Pipeline (20' wide)	10 miles	2.4 acres/mi	24
Total:			48

The total surface disturbance for up to five development wells would be 5 acres for well pads, 7 acres for roads, and 24 acres for a single transmission line 10 miles long. No more than 1 acre would be required for a small facility (meter, separator) on a single

parcel. The total surface disturbance caused by seismic operations (5 miles), up to three exploratory wells and associated roads, and development, would be 48 acres.

II. Introduction

This appendix describes the scenario for the Reasonably Foreseeable Development (RFD) of oil and gas. The RFD scenario estimates the level and type of future oil and gas activity in the planning area and provides a basis for the analysis of cumulative effects. Based on current regulations and the small amount of projected activity on federal mineral estate within the planning area, this RFD is applicable regardless of which of the alternatives analyzed in the EIS is chosen as the Preferred Alternative. Although this RFD covers the entire planning area, all or virtually all of the expected activity will occur in the Central Valley Assessment Area, which covers the western third of the planning area.

The scenario first describes the steps involved in exploring for and developing deposits of oil and gas. Current levels of activity are discussed in Section IV. Trends and assumptions affecting oil and gas activity are discussed in this appendix, followed by estimates for future oil and gas exploration and development.

The scenario for reasonably foreseeable development is based on known or inferred oil and gas potential, and applies the conditions and assumptions discussed below. Changes in available geologic data or economic conditions may alter this scenario, and some deviation should be expected over time. The lands included are limited to those with BLM-administered minerals, including split estate with federal minerals.

It should be noted that not all mineral estate managed by the BLM may have been identified at this time. For example, we do not have any data regarding minerals on Indian Trust Lands. For purposes of this document, we consider that all mineral estate managed by the BLM, including any Indian Trust lands, is covered by this RFD, even if we do not currently show the mineral estate on BLM maps. We also consider that mineral estate on lands that may be acquired in the future will also be covered by this RFD so long as the values and resources that are contained on the newly acquired lands do not differ significantly from those on existing known federal mineral estate.

III. Petroleum Geology of the Sierra Planning Area

See Section V, Oil and Natural Gas Occurrence and Development Potential.

IV. Past and Present Oil and Natural Gas Exploration and Development Activity

There are 58 active gas fields (and no oil fields) partly or totally within the planning area. The total area within the administrative boundaries of these fields is nearly 244,000 acres. Within those administrative areas, the actual productive areas total about 106,000 acres. Even though there are many gas fields within the planning area, only a very small

fraction of the land within the administrative boundaries of those fields contains federal minerals (about 800 federal acres out of a total of nearly 244,000 acres, or only 0.3%). There are only three wells on federal mineral estate in the entire planning area, and they were all drilled prior to 1991. In the past ten years, an average of 30 wells per year have been drilled, all of which were in the Central Valley Assessment Area. Consequently, based on the history of oil and gas exploration in the planning area, it is projected that no more than three exploratory wildcat wells (wells outside of the administrative boundaries of existing oil and gas fields) would be drilled into BLM-administered federal mineral estate in the planning area during the life of this plan. Although the success rate for wildcat wells has improved markedly during the past decade, largely due to improved seismic data, it is still unlikely that any new fields would be discovered by drilling on federal minerals because there is so little federal mineral estate in prospective areas.

Regarding new field discoveries, there have been fewer than three fields discovered within the last 10 years, none of which contained federal mineral estate. Because of the low level of activity on federal mineral estate, a more detailed description of past and current activities throughout the entire planning area is unnecessary.

V. Oil and Natural Gas Occurrence and Development Potential

The planning area has areas that have either “high” or “low to no” occurrence and development potential, based on the presence or absence of hydrocarbon bearing sediments. Although there are more than a dozen strata shown on the map, the entire area can be classified as either “high” or “low to no” potential – there are no “moderate” potential areas. Map 7 in Appendix A shows the location of these two areas.

The acres within each category are shown in Table 2 below.

Table 2 Oil and Gas Development Occurrence and Potential Development in the Sierra Planning Area

Occurrence and Development Potential	Color on Map 7	BLM Minerals	Non-BLM Minerals	Total Acres
High	Orange	75,900 ¹	3,482,700	3,558,600
Low to None	Hatched	281,900 ²	6,604,700	6,886,600
Total		357,800	10,087,400	10,445,200

¹ Also includes mineral estate acquired by other federal agencies. ²BLM surface/mineral estate and BLM split estate only.

Although there is usually a difference between “occurrence” and “development” potential, in this case the two are effectively the same. In general, on a landscape basis, all of the area that has hydrocarbon bearing strata can potentially be economically developed.

Geology of the Folsom Field Office Management Area

The Folsom Field Office Management Area has four geologic provinces – the Sacramento Basin, the Western Metamorphic Belt, the Paleozoic Foreland province, and the Sierran Granite province.

High Occurrence and Development Potential

The westernmost of these provinces is the Sacramento Basin. It occupies most of Merced, Stanislaus, Joaquin, Sacramento, Western Placer, Western Yuba and Sutter Counties. The Sacramento Basin contains Cretaceous to Eocene marine sediments that produce gas. All gas production in the planning area is in this area, and it is the only area of high oil and gas occurrence and development potential.

Low to No Occurrence and Development Potential

To the east of the Sacramento Basin province is the Western Metamorphic Belt. This band of Triassic to Jurassic marine and non-marine metamorphic rocks (slates, schists, marble, gneiss, mélangé) represents a series of accreted terrains that were added to the North American Craton in the Mesozoic Era.

To the east of the Western Metamorphic Belt is the Paleozoic Foreland province. This is a group of accreted marine rocks dominated by slates and marbles. To the east of the Paleozoic Foreland is the Sierran Granite province. These rocks are the northern extension of the great Mesozoic Southern California Batholith. Included in the Sierran province are roof pendants of older, now metamorphosed Paleozoic Foreland rocks.

Rocks of the Sierran and Paleozoic Foreland provinces have been eroded and later covered by broad volcanic eruptions of Miocene and Pliocene age. Although there have been some oil/gas wells that have explored for Cretaceous sediments that are theorized to occur below east-dipping thrust faults underlying granite and metamorphic rocks along the western margin of the Western Metamorphic Belt, these efforts have not been successful. Consequently, oil and gas occurrence potential in the Western Metamorphic Belt, Paleozoic Foreland and Sierran granite provinces is low to none.

VI. RFD Baseline Scenario Assumptions, Discussion, and Estimated Surface Disturbance from Oil and Gas Activity on Federal Mineral Estate in the Folsom Field Office Area

For purposes of this document, we have assumed that all potentially productive areas are open under standard lease terms and conditions, except those areas designated as closed to leasing by law, regulation, or executive order. Based on current regulations and policy and the small amount of projected activity on federal mineral estate within the planning area, this RFD is applicable regardless of which of the alternatives analyzed in the EIS is chosen as the Preferred Alternative.

Future trends and assumptions: Based on the history of minimal activity for oil and gas exploration and development on federal lands within the planning area, activity over the next 15 to 20 years is likely to be sporadic. Oil and gas activity will probably consist of the issuance of some competitive and over-the-counter leases, a few geophysical surveys, and perhaps the drilling of up to three exploratory wells, with no more than five development wells, and the associated facilities/gas transmission lines. It is very unlikely that more than a total of eight exploratory and development wells will be drilled on new (or existing) federal oil and gas leases. While the large majority or even all of this activity is expected to occur in areas identified in this RFD as “High Development Potential” (essentially the Central Valley Assessment Area), there is always a slight possibility that federal minerals in other areas may see geophysical exploration, leasing, and even actual exploration and development drilling. It is highly unlikely that any wells in such an area would be productive, so any associated surface disturbance would likely be short term.

Geophysical exploration: Geophysical exploration is conducted to determine the subsurface structure of an area and the potential for mineral resources. There are three geophysical survey techniques that are generally used to define subsurface characteristics through measurements of the gravitational field, magnetic field, and seismic reflections.

Gravity and magnetic field surveys—involve small, portable measuring units that are easily transported by light off-highway vehicles, such as four-wheel drive pickup trucks and jeeps, or aircraft. Both off- and on-highway travel may be necessary. Although these two survey methods can take measurements along defined lines, it is more common to have a grid of distinct measurement stations. Surface disturbance resulting from these surveys is negligible, consisting almost exclusively of soil or vegetation compaction that persists no more than a few months.

Seismic reflection surveys—are the most common of the geophysical methods, and they produce the most detailed subsurface information. Seismic surveys are conducted by sending shock waves, generated by a small explosion or by mechanically beating the ground with a thumping or vibrating platform.

In the **explosive method**, small charges are detonated on the surface or in a shallow drill hole. The surface charge method uses 1- to 5-pound charges attached to wooden laths 3 to 8 feet above the ground. Placing charges lower than 6 feet usually results in destruction of vegetation, whereas placing the charges higher, or on the surface of deep snow, results in little visible surface disturbance. In the drill hole method, holes for the charges are drilled using truck-mounted or portable air drills. In general, this method uses 4 to 12 holes per mile of line, and a 5- to 50-pound explosive charge is placed in each hole, covered, and detonated. The shock wave created is recorded by geophones placed in a line on the surface. In rugged terrain, a portable drill carried by helicopter can sometimes be used. The vehicles used for a drilling program may include heavy truck-mounted drill rigs, track-mounted drill rigs, water trucks, a computer recording truck, and a light pickup.

In the **mechanical method**, four large trucks are usually used, each equipped with pads about 4-feet square. The pads are lowered to the ground, and the vibrations are electronically triggered from the recording truck. Once information is recorded, the trucks move forward a short distance and the process is repeated. Surface disturbance includes flattening of vegetation and compaction of soils.

In either type of seismic reflection surveys, existing roads and trails are used where possible. However, off-road travel is necessary in some cases. Several trips per day are made along a seismograph line, usually resulting in a well defined two-track trail.

It is expected that no more than three Notices of Intent, involving seismic reflection and gravity/magnetic field surveys across federal surface, would be filed under all alternatives to the proposed RMP during the life of this plan. Although it is unlikely, it is possible that one or two of the parcels with federal surface could be involved in a 3-D seismic proposal. If that occurs, the total expected surface disturbance could be up to 2 acres, based on up to 5 miles of seismic lines and a two track road with each track being 18 inches wide. It is possible that much of the travel could be located on existing roads or other previously disturbed lands, and there could be some hand laying of lines, and that would result in less new disturbance.

Drilling phase: After a parcel is leased, there may or may not be any actual disturbance. In fact, historically, a large majority of leases are relinquished without ever having any actual surface disturbance. In the event that an Application for Permit to Drill (APD) is submitted, a site-specific evaluation will be made by the BLM to ensure compliance with NEPA requirements. Based on the results of that evaluation, additional Conditions of Approval may be added, and the operator may only begin construction after complying with lease stipulations and Conditions of Approval of the drilling permit. When a site requires construction of an access road, the shortest feasible route is usually selected to reduce the haul distance and construction costs. Environmental factors or a landowner's wishes may dictate a longer route in some cases. Drilling in the planning area is expected to be done using existing roads and construction of only short (approximately 0.5 mile) roads to access drill site locations.

Even though there are 58 gas fields that are partly or totally within the planning area, only 0.3% of the land within the boundaries of those fields contains federal minerals (about 800 federal acres out of a total of nearly 244,000 acres). In the past ten years, less than 300 wells have been drilled in the entire planning area, and no wells have been drilled on federal minerals within the entire planning area since 1990. Consequently, based on the history of oil and gas exploration in the planning area, it is projected that no more than three exploratory wildcat wells (wells outside of the administrative boundary of existing oil and gas fields) would be drilled on BLM-administered federal mineral estate in the planning area during the life of this plan. Although the success rate for wildcat wells has improved markedly during the past decade, largely due to improved seismic data, it is still unlikely that any new fields would be discovered by drilling on federal mineral lands because there is so little activity in areas with significant amount of federal mineral estate.

Virtually all drilling is expected to occur in areas of land designated as high development potential shown on Map 7, Appendix A. Although there is a low probability that a field will be discovered on federal mineral estate during the life of this plan, if a field containing federal minerals were to be discovered in the planning area, it is likely that the discovery would be gas because all of the occurrences in the area are gas.

During the first phase of drilling, the operator would move construction equipment over existing maintained roads to the point where the access road begins. Less than 0.5 mile of moderate duty access road per well with a gravel surface 20 feet wide is expected for construction. With ditches, cuts, and fill, the total width of surface disturbance would average 40 feet. The second part of the drilling phase is the construction of a drill pad up to 1 acre in size. The likely duration of well drilling, testing, and abandonment is three or four months per site. The total disturbance for each exploratory well and any new road is estimated to be 3.4 acres. The total surface disturbance caused by exploratory drilling of three wells over the life of this plan is expected to be no more than 10 acres.

Field development and production: Exploratory drilling is not expected to lead to the development of a producing field in the planning area. Nonetheless, the following scenario describes the operations and effects associated with field development.

The minimum size considered economically feasible would depend mainly on its proximity to existing infrastructure. There are many fields within the boundaries of the planning area, all of them in the western third of the area, and it is likely that any pipelines from a new field would be relatively short. The wells within the actual productive boundaries (smaller than the administrative boundaries) of gas fields are spaced on average at 80 to 160 acres. Although it is unlikely that a new field will be discovered on federal minerals, for planning purposes we will assume a fairly small to mid-size gas field (under 2,000 acres) may be discovered somewhere within the planning area, most likely within the Central Valley Assessment Area. (The average field size in the planning area is 4,200 acres). Each development well would require an estimated 0.25 mile of road, which would have a surface of crushed aggregate or gravel approximately 20 feet wide (total disturbed width of 40 feet). Well pads would be no more than 1 acre in size. Gas produced would be carried by pipelines that could be linked to existing and proposed transmission lines in the planning area. Average infield pipeline length is estimated to be 0.25 mile per well, which could probably be largely contained within the road right of way and little new surface disturbance would be required. The total distance from a new field to an existing transmission pipeline is likely to be less than 10 miles. The width of the surface disturbance for pipelines would average 20 feet.

The total surface disturbance for up to five development wells would be 5 acres for well pads, 6 acres for roads, and 24 acres for a single transmission line 10 miles long (see Table 3). No more than 1 acre would be required for the small facility (meter, separator) on a single parcel. The total surface disturbance caused by seismic operations, exploration drilling, and development would be 48 acres.

Table 3 Projected Surface Disturbance for Oil and Gas Activities

Description	Number	Unit Surface Disturbance (acres)	Total Surface Disturbance (acres)
Exploratory Wells			
Well Pads	3 wells	1 acre/well	3
Roads (40' wide)	3 x 0.5 miles	4.8 acre/mile	7
Development			
Well Pads	10	1 acre/well	5
Roads (40' wide)	10 x 0.25 mi	4.8 acre/mile	6
Facilities	2	1 acre/facility	1
Seismic (2 track x 18")	25 miles	0.36 acre/mi	2
Pipeline (20' wide)	10 miles	2.4 acres/mi	24
Total:			48

Plugging and abandonment: Wells that are drilled and determined to be dry holes are plugged according to a plan designed for the condition of each well. Plugging involves placing cement plugs at strategic locations in the hole. Drilling mud is used as a spacer between the plugs to prevent communication between fluid-bearing zones. The drill casing is cut off at least 5 feet below ground level and capped by welding a steel plate on the casing stub. After plugging, all equipment and debris would be removed and the site restored as near as reasonably possible to its original condition. It is projected that much of the surface disturbance from exploratory activities and all of the seismic activities would be of short duration (between a few months and a couple of years). The impacts from the successful development wells would last longer, but it would still be completely reclaimed eventually.

Military Bases: Beale Air Force Base is within the planning area, and over 8,000 acres of the lands involved have high potential for natural gas. Leasing these lands requires consent from the local Base Commander. It has been shown in numerous cases across the country and within California that oil and gas exploration and development can often be conducted in a manner that is fully compatible with ongoing military operations. It is quite possible that negotiations between BLM and military personnel may result in agreement to lease lands within the boundaries of bases or other military lands. In the event that happens, appropriate leasing stipulations that would fully protect the military's mission will be added prior to any land being leased.

National Wildlife Refuges: Several national wildlife refuges are within the Central Valley Assessment Area from Colusa County to Merced County. Leasing of oil and gas within refuges is only allowed if a drainage situation exists, that is if federal gas deposits are being depleted by wells producing from adjacent non-federal lands. The development of potential gas reservoirs beneath a refuge would likely be allowed only under the no surface occupancy stipulation, that is, by directional drilling from the perimeter of the refuge.

U.S. Bureau of Reclamation Acquired Lands: The U.S. Bureau of Reclamation (USBR) has acquired fee title (surface and mineral estates) to many lands needed for their Central Valley Project. Project elements involving these land acquisitions include Lake Natoma, Nimbus Dam, Folsom South Canal, Delta Cross Channel, Delta-Mendota Canal, California Aqueduct, San Luis Drain and Kesterson Reservoir. Most of these lands have high gas potential. It is BLM's policy to obtain USBR consent before issuing oil and gas leases on these lands, subject to the 1983 agreement between our agencies. Leasing would occur under USBR-controlled surface use stipulations.

U.S. Army Corps of Engineers Acquired Lands: Within California's Central Valley the U.S. Army Corps of Engineers (USACE) administers lands acquired for the San Joaquin Army Depots at Lathrop and Tracy, the Riverbank Ammunition Plant, and the Stanislaus River Park Lands. The USACE also owns lands in the Yuba Goldfields and lands near the delta on the Sacramento River at Sherman Island and Grand Island. BLM's leasing of oil and gas estate acquired by the USACE would occur only with consent by the USACE and under its controlled surface use stipulations. The USACE's main concern is for the security of their military facilities.

Non-federal Surface with Federal Mineral Estate: The United States owns the mineral estate within numerous parcels of private land in the Central Valley that have high gas potential. Included are lands within closed military bases and mineral estate acquired through the Federal Farm Mortgage Corporation Act. Because many of these lands are developed for agricultural or industrial purposes, standard oil and gas lease stipulations will apply in most instances. Parcels within the limits of an incorporated city are not available for oil and gas leasing unless a drainage situation exists.

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Appendix E

Wild and Scenic River Eligibility and Suitability Study

Wild and Scenic River System

The Wild and Scenic Rivers Act of 1968 (Public Law 90-542) was passed by Congress to preserve riverine systems that contain outstanding features. The law was enacted during an era when many rivers were being dammed or diverted, to balance these developments by ensuring that certain rivers and streams remain in their free-flowing condition. The Bureau of Land Management (BLM) is mandated to evaluate stream segments on public lands as potential additions to the National Wild and Scenic Rivers System (NWSRS) during the resource management plan (RMP) process under Section 5(d) of the Act. The NWSRS study guidelines are found in *BLM Manual 8351, U.S. Departments of Agriculture and Interior Guidelines*, published in Federal Register Vol. 7, No173, September 7, 1982, and various BLM memoranda and policy statements. Formal designation as a wild and scenic river requires Congressional legislation, or designation can be approved by the Secretary of the Interior if it is nominated by the Governor of the state containing the river segment. The following discussion provides information on how BLM considered waterways for potential inclusion in the NWSRS.

The NWSRS study process has three distinct steps:

- Determine what rivers or river segments are eligible for NWSRS designation.
- Determine the potential classification of eligible river segments as wild, scenic, recreational or a combination thereof.
- Conduct a suitability study to determine if the river segments are suitable for designation as components of the NWSRS.

This report documents the first two steps of the process for the streams in the BLM Folsom Field Office Planning Area. The BLM administered segment of the South Yuba River has been studied and found to be both Eligible and Suitable and has been forwarded to Washington Office. The North Fork American River and Middle Fork American River have been found by the Bureau of Reclamation, BLM, U.S. Forest Service (USFS), and other state and federal agencies to be eligible for wild and scenic river designation. Suitability will not be conducted on these two segments of river at this time.

Eligibility of the Folsom Field Office Streams

Identification

A variety of sources were reviewed to identify waterways which could have potential for wild and scenic designation. They include the Nationwide Rivers Inventory list, the Friends of The River list, The Mokelumne and Cosumnes River Watershed Council, river segments identified by the public during formulation of this Resource Management Plan, and river segments identified by the planning team as having potential to meet wild and scenic river eligibility requirements.

The Wild and Scenic Rivers Act defines a river as a “flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.”

Nine Stream segments totaling 139.7 miles within the Folsom Field Office area boundary were identified for review. Some streams were divided into segments, based on land status or classification criteria (see below). These rivers are listed in Table 1: Wild and Scenic River Inventory.

Eligibility Determination

Each identified river segment was evaluated to determine whether it is eligible for inclusion in the NSWRS. To be eligible, a river segment must be “free-flowing” and must possess at least one “outstandingly remarkable value” (ORV). These values include:

- Cultural
- Geologic
- Wildlife
- Botanical
- Recreation
- Fisheries
- Water Quality
- Scenic
- Hydrologic
- Other (ecologic, scientific, special status species)

To be considered as “outstandingly remarkable,” a river-related value must be a unique, rare, or exemplary feature that is significant at a comparative regional or national scale. Only one such value is needed for eligibility. All values should be directly river related, meaning they should:

- Be located in the river or on its immediate shore lands (generally within one quarter mile on either side of the river);
- Contribute substantially to the functioning of the river ecosystem; and/or
- Owe their location or existence to the presence of the river.

These are the only factors considered in determining the eligibility of a river segment. All other relevant factors are considered in determining suitability. A river need not be navigable by watercraft to be eligible. For purposes of eligibility determination, the volume of flow is sufficient if it is enough to maintain the ORV(s) identified within the segment.

The Folsom Field Office has long been recognized as having a significant number of rivers coming out of the Central Sierra Nevada Mountain range traversing west through BLM administered land. Currently there are three nationally designated wild and scenic rivers – the North Fork American, Merced, and Tuolumne Rivers – flowing through BLM Folsom Field Office-administered lands, and one state designated and federally recommended to be designated – the South Yuba River. The use of water for hydroelectric power, human consumption, recreation, and watershed protection are important factors in managing our river systems. Public participation and input in determining how we will manage these streams in the future will be extremely important aspect in determining how we will protect these ORVs for each identified river segment that are found eligible.

Table 1 summarizes the eligibility evaluation of all identified river segments. The table includes information on the length of stream segments studied, BLM acreage (including a quarter-mile corridor on each side of the stream), indicates if ORV(s) are present, and identifies the potential classification of each eligible segment. Table 2 gives more detailed descriptions of each eligible river segment’s location and a brief narrative of its ORV(s).

Classification

The Wild and Scenic Rivers Act and subsequent interagency guidelines provide the following direction for establishing preliminary classifications for eligible rivers:

Wild Rivers

Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic Rivers

Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational Rivers

Those rivers or sections of rivers readily accessible by road or railroad that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Table 1 Wild and Scenic River Inventory

River Name/Segment	Reason for Consideration ^a	BLM Length (Miles)	Other Length (Miles)	Free Flowing	Orv ^b	Eligibility	Preliminary Classification	BLM Acres	BLM % of Acres
North Fork Tuolumne River	C	3.3	3.9	Yes	J	Yes	Wild	1,141	51
North Fork Merced River	A,B,D	6.4	0	Yes	J	Yes	Wild	1,880	100
North Fork and Main Mokelumne River	C,B	13.7	6.5	Yes	A,G,H	Yes	Wild, Scenic, Recreational	3,738	60
Middle Fork Mokelumne River	C	3.6	10.7	Yes	K	No	Non-eligible	824	19
South Fork Mokelumne River	E	4.8	8.8	Yes	K	No	Non-eligible	1,392	25
North Fork Cosumnes River	A,B,C	6.8	18.3	Yes	I	Yes	Scenic	1,605	22
Middle Fork Cosumnes River	A,B,C	7.0	13.2	Yes	I	Yes	Scenic	1,819	31
Main Cosumnes River	A,B,C	2.1	8.4	Yes	I	Yes	Scenic	541	17
South Fork American River	A,B,C	8.8	13.4	Yes	A,E	Yes	Recreational	2,122	38

^a Inventory Source

A = Nationwide Rivers Inventory (NRI)

B = Friends of The River

C = Potential Eligible Rivers Inventory (BLM)

D = Congressional 5(a) Study

E = Upper Mokelumne and Cosumnes Watershed Council

^b Outstandingly Remarkable Value (ORV)

A = Cultural

B = Geological

C = Wildlife

D = Botanical

E = Recreation

F = Fisheries

G = Water Quality

H = Scenic

I = Hydrologic

J = Other (Ecologic, Scientific, Special Status Species)

K = Non-Existent

Table 2 Eligible Folsom Field Office River Segments

River Segment	Segment Description/ Classification	Description Of Outstandingly Remarkable Value(S)
North Fork Tuolumne River	USFS Boundary T11N, R 16E, S4, one quarter mile to the confluence of the Wild and Scenic Tuolumne River. Classified – Wild	BLM listed Sensitive Species of Concern – <i>Monadenia tuolumneana</i> – snail only found in the North Fork Tuolumne River drainage. Habitat is within 100 foot from the river in deep rock crevices near limestone outcrops.
North Fork Merced River	USFS Boundary T3S, R17E, S13, to one quarter mile to confluence of the Merced W&S River. Classified – Wild	Threatened and Endangered Species – the limestone salamander has been identified within the half-mile-wide boundary of the North Fork Merced River.
North Fork and Main Mokelumne River	300 feet below Tiger Creek Afterbay to Highway 26. Classified – Recreation 300 feet below West Point Powerhouse to 300 feet upstream of Ponderosa Bridge. Classified – Wild 300 upstream of Ponderosa Bridge to 300 feet upstream of Electra. Classified – Scenic 300 feet below Electra Afterbay to 100 feet below the Highway 49 bridge. Classified – Recreation	Cultural sites and historic sites prevail in this segment. High rating on water quality exists and Scenic Values are rated VRM Class I and II and III in this segment.
North Fork Cosumnes River	T9N, R12E, S4, to the main stem of the Cosumnes River. Classified – Scenic	Hydrologic values – this stretch is the last free flowing river segment of river coming out of the Central Sierras.
Middle Fork Cosumnes River	USFS Boundary T9N, R12E, S25, to the main stem of the Cosumnes River. Classified – Scenic	Same as above
Main Cosumnes River	Main stem of the Cosumnes River to 1,000 feet upstream of Latrobe Road bridge. Classified – Scenic	Same as above
South Fork American River	300 feet below the Highway 193 bridge below Chili Bar put-in to Weber Creek. Classified – Recreational	Cultural values related to the discovery of gold, now Marshall Gold Discovery State Historic Park and Recreational values related to whitewater boating one of the most popular whitewater boating rivers in the U.S.

Suitability of Streams

Segments displayed in Table 2 were found to be eligible for inclusion into the NWSRS. Section 4(a) of the Wild and Scenic Rivers Act mandates that all rivers found eligible as potential additions to the NWSRS be studied as to their suitability for each designation. The purpose of the suitability study is to provide information upon which the president of the United States can base his recommendation and Congress can make a decision. The study report describes the characteristics that do or do not make the stream segment a worthy addition to the NWSRS, the status of land ownership and use in the area, the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the system, and several other factors. The suitability is designed to answer these questions:

- Should the river's free-flowing character, water quality, and ORV be protected, or are one or more other uses important enough to warrant doing otherwise?
- Will the river's free-flowing character, water quality, and ORV be protected through designation? Is it the best method for protecting the river corridor? (In answering these questions, the benefits and impacts of wild and scenic river designation must be evaluated, and alternative protection methods considered.)
- Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

Pursuant to Section 4(a) and 5(c) of the Wild and Scenic Rivers Act, the following factors were considered and evaluated as a basis for the suitability determination for each river.

1. Characteristics that do or do not make the area a worthy addition to the NWSRS.
2. The current status of land ownership, minerals (surface and subsurface), and use in the area, including the amount of private land involved and associated or incompatible uses.
3. The reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS. Historical or existing rights which could be adversely affected.
4. The federal agency that will administer the area should it be added to the NWSRS.
5. The estimated cost to the United States of acquiring necessary lands and interests in lands and of administering the area should it be added to the NWSRS.
6. A determination of the degree to which the state or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS.

7. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's ORV by preventing incompatible development.
 8. Federal, public, state, local, or other interests in designation or non-designation of the river, including the extent to which the administrator of the river, including the cost thereof, may be shared by state, local, or other agencies and individuals. Support or opposition to the designation.
 9. The consistency of designation with other agency plans, programs, or policies and in meeting regional objectives.
 10. The contribution to river system or basin integrity.
 11. The ability of BLM to manage the river segments under designation, or ability to protect the river other than Wild and Scenic designation.
- 1. Characteristics that do or do not make the area a worthy addition to the NWSRS.**

NORTH FORK TUOLUMNE RIVER

The North Fork Tuolumne River was not listed in the Nationwide Rivers Inventory (NRI) study conducted by the National Park Service, but was determined eligible by the interdisciplinary team (IDT) made up of BLM Interdisciplinary Resources staff in conducting their evaluation for the RMP process. One Outstandingly Remarkable value was determined in this segment, under the **Other Category – for BLM Sensitive Species of Concern**, the *Monadenia tuolumneana* snail. This snail is only found in the North Fork Tuolumne River drainage and its habitat is river dependent being within 100 feet of the river in deep crevices near limestone outcrops.

Although little is known about this species, the threat of a proposed water project would potentially harm this species and habitat. Currently this species is not on the Threatened and Endangered Species list, but it is listed on BLM's Sensitive Species of Concern list. The North Fork Tuolumne River canyon is a steep and remote area where access is limited. Most of the use occurs near the confluence where boaters can access the North Fork corridor for camping, hiking, lunching, and swimming purposes. This river corridor is one of the larger tributaries that flow into the Wild and Scenic Tuolumne River.

NORTH FORK MERCED RIVER

The North Fork Merced River is listed in the NRI as a potential eligible wild and scenic river segment. It has also been identified an eligible river segment by Friends of the River and has been evaluated by the IDT. This river segment is a Congressional Section 5(a) study river for possible inclusion into the NWSRS. The North Fork Merced River is currently under the full protection of the Wild and Scenic Rivers Act pursuant to Section

7(b) of the Act. The NRI identified four possible ORVs in this segment: Geology, Cultural, Historical, and Other. The BLM IDT found one ORV in the **Other Value, for Special Status Species**. The other three values are believed to exist on the USFS segment of river. The limestone salamander is a threatened and endangered species and has been found within the half-mile-wide boundary of the North Fork Merced River. The North Fork Merced River is included in the BLM Limestone Salamander Area of Critical Environmental Concern (ACEC) boundary. This is an area where the limestone salamander has been discovered. The Limestone Salamander ACEC also includes land which parallels the Merced Wild and Scenic River upstream and downstream of the North Fork Merced confluence.

NORTH FORK AND MAIN MOKELUMNE RIVER

The North Fork and main stem of the Mokelumne River is listed on the Friends of the Rivers list of eligible rivers and was determined to be by the BLM IDT when conducting Eligibility determinations. In this segment, the Outstandingly Remarkable Values were identified as Cultural, Water Quality, and Scenic values. The Historical/Cultural values found in the North Fork and main stem of the Mokelumne River suggests that ORVs do exist in the study area especially in the Electra to Highway 49 bridge segment. Values include early hydroelectric projects, chlorination plants associated with hard rock gold mining and a Miwok ceremonial building associated with Pedro O'Connor. Early hydroelectric projects such as the remains of the Blue Lakes (Ca-Ama-228H) and Electra (Ca-Ama-233H) including their associated features (houses, ditches, roads, transmission lines, etc.) are hydroelectric power projects built around the turn of the century with financial backing of European Prince Andre Poniatowski and San Francisco banker W.H. Crocker, both historically well-known, influential people. Electrification of the region as a result of these early projects is significant, with far-reaching implications for American society and culture. The powerhouses and their features have been largely reduced to concrete footings yet they are surviving examples of early hydroelectric operations. Chlorination plants are located on the south side of the river canyon. The Boston Mine (Ca-Cal-957H) is an extensive hard rock gold mining complex that includes the remains of several mills and two well-preserved chlorination plants used to separate gold from refractory sulphide concentrates. Pedro O'Connor, a well-known Miwok leader and dancer, used the conically shaped building for ceremonial purposes in the early 1900s. Native Americans consider this an important site because it is one of only a few surviving ceremonial buildings in the area. Upstream is a historic bridge located on Ponderosa Way. The bridge is still in place but its wooden elements were damaged by a recent wildfire. These are a few of the recorded sites that BLM is aware of in the North Fork and main stem Mokelumne River. A complete cultural survey of this river segment has not been conducted but it is expected to contain historical and cultural sites.

The water quality found in the North Fork and main stem of the Mokelumne River has been found to be extremely high. The East Bay Municipal Utilities District serves the East Bay community with drinking water from this river segment.

Scenic values have also been identified to exist in this segment because of the steep granitic canyon walls rising 1000 feet or more providing remarkable scenic vistas along

the canyon rim and from the river itself, with cascading falls which are unrunnable to boaters. The North Fork canyon is undeveloped and access in this segment is very limited. The VRM is rated a Class I in the segment below West Point Powerhouse to Ponderosa Bridge, a Class II from Ponderosa Bridge to Electra Powerhouse where houses can be seen, and a Class III from the Electra to Highway 49 bridge segment where houses, roads, hydro facilities, recreation facilities are adjacent to the river.

NORTH FORK COSUMNES RIVER

The North Fork, Middle Fork, and main stem of the Cosumnes River have been identified in the NRI study as having potential ORV for Recreation and Other values. BLM IDT realizes that recreation for water play, kayaking, and rock climbing does draw a significant number of users to the area but they did not find this to be of a national or regional draw. BLM IDT did find one ORV – **Hydrologic values** – existing in these river segments because they are one of the last remaining streams in the Central Sierras that is free flowing without impoundments. This has potentially scientific values in looking at streams that are impounded versus those that are not. Inferences on aquatic, fisheries, and water quality have been used for scientific comparisons to other impaired streams in the past.

With the majority of land within the half-mile-wide boundary being in private ownership managing the river segments as a wild and scenic river would be very difficult.

MIDDLE FORK COSUMNES RIVER

Same as above.

MAIN COSUMNES RIVER

Same as above.

SOUTH FORK AMERICAN RIVER

The South Fork American River is listed as a potential eligible wild and scenic river segment in the NRI conducted by the National Park Service. It has also been identified an eligible river segment by Friends of the River and has been evaluated by the BLM IDT. Two ORVs were found on this river segment: (1) recreation – this river segment is one of the most popular used whitewater boating segments in the United States, and (2) cultural – the Marshall Gold Discovery State Historic Park, where gold was first discovered in California.

The South Fork American River is located in the Coloma-Lotus Valley and is near two major population centers – Sacramento and the Bay Area. The South Fork American River attracts boaters to this area because it (1) is close to major population centers, (2) is a relatively easy segment of river to boat containing few Class III rapids, and (3) it has boatable flows during the summer months when most other rivers in the Central Sierras have become unboatable because of low flows. The South Fork American River is one of the top seven boated rivers in the country, attracting 100,000 to 150,000 boaters

regionally as well as nationally to the river. Per river mile, the South Fork American River is one of the heaviest used rivers in the country, averaging at times one boat passing through a rapid every 22 or more seconds.

Marshall Gold Discovery State Historic Park is one California's treasured landmarks. This is the site where gold was first discovered which literally changed the west over night. The Gold Rush was on and remnants of the mining activity that occurred in the canyon can still be seen today. Marshall Gold attracts national and international attention averaging over 500,000 visitors annually to the park.

The South Fork American River would be a worthy addition to the NWSRS because there is no other river segment in the nation with such significant historical and recreational values.

2. Status of land ownership, current use, and local zoning.

NORTH FORK TUOLUMNE RIVER

The North Fork Tuolumne River segment begins in T11N, R16E, S4, going downstream approximately 7 miles to 0.25 mile upstream of the confluence with the Wild and Scenic Tuolumne River. BLM manages 3.5 miles of riverfront property containing 1,141 acres of land or 51 percent of the land within the quarter-mile boundary on each side of the river. Overall with BLM and USFS lands included, this 7-mile segment comprises over 5 miles in public ownership. Approximately 1,681 acres or nearly 68 percent of the land is in public ownership.

The public lands found along the North Fork half-mile corridor are primarily used for hiking, camping and water play. This canyon is very steep and access is very limited. The easiest access is from the Wild and Scenic Tuolumne River, accessing the North Fork from where the confluence joins the Tuolumne.

The North Fork Tuolumne is currently zoned within the half-mile-wide boundary as 95 percent public and 5 percent agricultural (those private in holdings just east of Tuolumne City). Current zoning is compatible with designation.

NORTH FORK MERCED RIVER

The North Fork Merced River begins from the USFS boundary T3S, R17E, and S13 to one quarter mile to the confluence of the Merced Wild and Scenic River. This 6.4-mile-long, 0.5-mile-wide segment consisting of 1,880 acres of land is completely encumbered by public land. There are no private land holdings found in this segment of river.

The North Fork Merced River is currently zoned as 100 percent Natural Resources, which is consistent with potential wild and scenic river classification.

NORTH FORK AND MAIN MOKELUMNE RIVER

The North Fork and main stem of the Mokelumne River segment begin 300 feet below Tiger Creek Afterbay to the Highway 26 bridge, begins again 300 feet below West Point Powerhouse to the Electra Powerhouse, and begins again 300 feet below Electra Afterbay to Highway 49. BLM manages 13.7 miles of river within these segments, which contains 3,738 acres of public land, or approximately 60 percent of land within the half-mile boundary.

The North Fork and main Mokelumne River segments on the Calaveras side are zoned 60 percent future single-family residential, 30 percent timber, and 10 percent residential. On the Amador side, the zoning is general agricultural 25 percent, open forest 55 percent, open recreation 10 percent, and agricultural-mineral combined 10 percent. There could be a potential conflict with Wild and Scenic classification in the Wild section if housing were to be built in the viewshed of the river corridor. There would not be a conflict on recreational and scenic classification segments.

NORTH FORK COSUMNES RIVER

The North Fork Cosumnes River begins in T9N, R12E, and S4 to the main stem of the Cosumnes River. This segment is approximately 25.1 miles in length, of which BLM administers 6.8 miles of river totaling 1,605 acres of land or 22 percent of the land in the half-mile-wide boundary.

The North Fork Cosumnes is zoned 50 percent natural resources, 30 percent open space, 15 percent rural residential, and 5 percent other residential. Zoning is not foreseen to have a negative impact on the ORV.

MIDDLE FORK COSUMNES RIVER

The Middle Fork Cosumnes begins from the USFS boundary in T9N, R12E, and S25 going downstream to the main stem of the Cosumnes River. This segment is approximately 20.2 miles in length of which BLM administers 7 miles of river totaling 1,819 acres of land or 31 percent of the land in the half-mile-wide boundary.

The Middle Fork Cosumnes on the El Dorado County side is zoned 60 percent natural resources, 20 percent open space, and 20 percent rural residential. The zoning is not foreseen to have a negative impact on the ORV.

MAIN COSUMNES RIVER

The main stem of the Cosumnes River begins where the North and Middle Forks meet and ends at the Latrobe Road Bridge. This segment is 10.5 miles in length of which BLM administers approximately 2.1 miles of river consisting of 541 acres of land or 17 percent of the land within the half-mile-wide boundary.

The Main Cosumnes on the El Dorado County side is zoned 70 percent Natural Resources, 20 percent Open Space, and 10 percent Agricultural and on the Amador side

Agricultural, general 75 percent, Open Forest 10 percent, and agricultural Upland 15 percent. The zoning is not foreseen to have a negative impact on the ORV.

SOUTH FORK AMERICAN RIVER

The South Fork American River segment begins at Chili Bar put-in, which is located just downstream of Highway 193, and traverses downstream approximately 22 miles to Weber Creek the terminus of Folsom Reservoir. BLM manages 8.8 miles of riverfront property containing 2,122 acres of public land or approximately 38 percent of the land within the half-mile-wide boundary of the river. Public lands located within South Fork American River planning area total over 5,580 acres; these lands are connected to the public lands that are within the half-mile-wide boundary. Public land managed by the BLM, El Dorado County, or by the state of California totals nearly 40 percent of all the land is in public ownership within the half-mile-wide corridor. Current county zoning on the South Fork American is compatible to wild and scenic river designation.

BLM has worked cooperatively with El Dorado County and California Department of Parks and Recreation in managing the whitewater boating activity that occurs in this river segment. In order to manage up to 150,000 boaters desiring to use the South Fork American River, BLM has strategically developed camping and lunching areas in remote segments of the canyon so the public will use public lands for these purposes and avoid trespassing onto private property. BLM has also issued title to El Dorado County for federal lands adjacent to Henningsen-Lotus Park so the County could utilize this property for a boating put-in/take-out area. BLM and El Dorado County jointly patrol the upper and lower segments of the river. BLM maintains three remote composting toilet facilities that are located on public lands as well as numerous lunching and camping areas and put-in and take-out facilities. The California Department of Parks and Recreation manages lunching and put-in facilities at Marshall Gold Discovery State Historic Park and two take-out facilities at Salmon Falls. A majority of the commercial operators lease or own their own property to provide camping, lunching, and put-in and take-out facilities for their clients. Currently the commercial operators take down 50,000 to 100,000 users per year on the South Fork American River.

BLM has recently completed a community based management plan, The South Fork American River, which is a river management plan for this area; BLM is beginning to implement the management actions addressed in the plan. New recreation opportunities are being introduced, such as recreational gold suction dredging permits, expansion of our trail systems for equestrian, mountain biking, and hiking users, historic interpretation, and boating launch and take-out sites at Greenwood Creek and lunching opportunities for commercial, organized groups, and the public at the Cronan Ranch site.

Currently there are no zoning ordinances that would conflict with protecting the ORVs identified in this segment. Zoning in this segment is Natural Resources 5 percent, Open Space 40 percent, Rural Residential 10 percent, and Rural Residential with biological overlay 10 percent, Low Density Residential 5 percent, High Density Residential 1 percent, Commercial 1 percent, Tourist Recreation 15 percent, and Agricultural 10 percent. Under a recreational classification, development of private land along the river

would only be an issue in a case where a property owner requests a water alteration stream permit from the Army Corp of Engineers to build something in the river or directly adjacent to it that could impact free flow or the Outstandingly Remarkable Values (ORV).

3. Potential uses of the land to be enhanced or curtailed by designation. Historical or existing rights that could be adversely affected including water resource projects.

WATER QUALITY:

According to the Sierra Nevada Ecosystem Project (SNEP) report, surface water in the Sierra Nevada is of excellent quality. In general, lower water quality is found in areas with access and significant amounts of human presence. The SNEP report states, “the Central Valley Basin plan summarizes water quality in Sierra Nevada streams above 300 m (1,000 ft) as ‘excellent’ in terms of mineral content” (Central Valley Regional Water Quality Control Board 1991)” In 1992, only 21 streams along the west slope of the Sierra Nevada were identified as having serious water quality problems.

The SNEP report states that “Sediment is the most pervasive pollutant because its production may be increased above natural background levels by almost any human activity that disturbs the soil or reduces vegetation cover.” The SNEP classifies low sediment yields to be those below 150 m³/km³; this classification is in accordance with a Soil Conservation Service report (Terrell and Perfetti 1989). Sediment yields have been measured from both reservoir surveys and from suspended sediment records. Although some river segments managed by the BLM exceed 150 m³/km³, all of the river segments being considered for Wild and Scenic Suitability have an annual sediment yield that would be classified as low with respect to the above classification system.

The California State Water Resources Control Board is required, under Section 303(d) of the 1972 Clean Water Act, to develop a list of water quality limited segments, which are those waters that do not meet water quality standards after meeting the minimum requirements for pollution control. None of the river segments being considered for wild and scenic suitability were on the 2002 303(d) list.

NORTH FORK TUOLUMNE RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of Flood Management, there are no dams, diversions, or hydroelectric powerhouses influencing the North Fork Tuolumne River.

Grazing Leases

There are no grazing leases in the North Fork Tuolumne River segment; therefore, there are not any impacts to grazing in this river segment.

Forestry

Forest lands (see conifer vegetation type descriptions) within Folsom management boundaries were inventoried in the early 1980s. This inventory, the Timber Production Capability Classification (TPCC) designated the forest land base and specified lands to be either in or out of Folsom's Intensive Forest Management Base. In analysis of the seven river segments, four would have no overlapping designations. Therefore these four segments possibly being designated would have no impact to forest production:

1. North Fork Tuolumne
2. North Fork Merced
3. Main Cosumnes
4. South Fork American

Minerals

The preliminary classification of this river segment as wild will close the lands to mineral entry within a half-mile-wide corridor of the river. This means that no new mining claims may be located there and the BLM would not authorize permits or sale contracts for the disposal of mineral materials.

As of February 16, 2006, no mining claims are located within this river corridor and no notices or plans of operations have been filed with the BLM. Because placer gold is likely to occur in the alluvium deposited in the river channel, the river has potential for recreational panning, sluicing, and suction dredging activities.

No deposits of mineral materials such as building stone, sand, and gravel suitable for commercial or private use are known to occur.

The closure to mineral entry would not substantially affect mineral resource development opportunities, and the resultant economic impact would be negligible.

NORTH FORK MERCED RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of

Flood Management, there are no dams, diversions, or hydroelectric powerhouses influencing the North Fork Merced River.

Grazing Leases

North Fork Merced. There is one grazing lease that encompasses the North Fork Merced River segment. This is the Meyer allotment, 4149. The allotment consists of 23,351 acres, our largest allotment in the Folsom Field Office planning area. Much of the allotment is not currently being used by the lessee. It is estimated that the lessee uses only 2,000 acres, 450 of which are considered suitable for grazing. The lessee is permitted for 2,057 animal unit months (AUMs) from March 16 through September 15. The lease is on an actual use basis. The actual use has been for 25 cows for five months (mid-April to early-May through the end of September) for a total of 125 AUMs. The lessee uses the lease for trailing the cattle to his lease on the USFS lands. The lessee owns 4,300 acres as his private base property. The impacts to limestone salamander and its habitat were assessed in a draft environmental assessment for grazing lease renewal. There should be no direct grazing impact to limestone salamander since the salamanders retreat deeply into the talus during the dry season and are not on the surface during the grazing period. There could be some impact to habitat from cattle slipping on the talus slopes and dislodging moss-covered rocks and talus. For the most part, it is believed that the cows will avoid the steep north and east-facing, slippery, moss-covered slopes that limestone salamanders prefer. The grazing impact should be insignificant. Socioeconomic impacts were also assessed in the draft environmental assessment. The livestock operation on the Meyer allotment is a relatively small operation, especially as it relates to public lands with only 25 cow/calf units on the public lands at any given time. It provides insignificant employment in the region. BLM is considering canceling the lease and issuing a trailing permit.

Forestry

This segment is not part of Folsom Field Office's Intensive Forest Management Base; therefore, possible designation would have no impact on forest production.

Minerals

The North Fork Merced River has been segregated from mineral entry as a Wild and Scenic Study River since 1992. As of February 16, 2006 ten grandfathered mining claims are located within this river corridor and five plans of operations have been filed. Three of these plans are active. They consist of seasonal suction dredging and lode and placer gold prospecting. Included is the maintenance of a residential camp located at the northern boundary of the Merced River Wilderness Study Area.

Designating this river as wild will result in the continuation of the current situation without any substantial impact to mineral development opportunities.

NORTH FORK AND MAIN MOKELUMNE RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and/or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of Flood Management, there are three hydroelectric powerhouses influencing the North Fork Mokelumne River: the 3-mile segment between the Tiger Creek Powerhouse and West Point Powerhouse, the segment below West Point Powerhouse to Electra Powerhouse, and the segment below Electra Afterbay to the Highway 49 bridge, which is being considered for wild and scenic suitability. The areas where current impoundments exist will be excluded from the wild and scenic boundary.

Grazing Leases

North Fork and Main Mokelumne River. There are 7 leases along the North Fork and Main Mokelumne River segment totaling 353 AUM's on 3670 acres. Cattle grazing is not expected to harm the identified ORV values. Much of the land is too steep near the river for cattle to graze. On a lease where cattle have in the past have been grazing along the riparian zone of the river BLM and the lessee have agreed to build a fence and watering troughs to keep the cattle out of the river.

Forestry

The main Mokelumne River segment is not part of Folsom's Intensive Forest Management Base; therefore, possible designation would have no impact on forest production.

On the North Fork of the Mokelumne, within 3 miles both up and downstream of the Highway 26 bridge (just below Tiger Creek Reservoir), are several parcels (est. 50 acres) that are identified in the TPCC Base that slightly overlap a possible wild and scenic designation. Generally these are upper slope ridgetops/side ridges (<40 percent) that would be harvestable. They would not be the river canyon face slopes. Current policy does not mandate green sale harvests, so no green sales would happen. Consideration for salvage sales under conditions like fire or major insect/disease outbreaks will be analyzed.

Minerals

A wild classification of the river segment from West Point powerhouse to Ponderosa Bridge will close the lands to mineral entry within the half-mile-wide boundary of the river. This means that no new mining claims may be located there and the BLM would not authorize permits or sale contracts for the disposal of mineral materials.

As of February 16, 2006, 45 mining claims are located within the Wild segment of this river corridor and nine notices of operations have been filed with the BLM. Two of these

notices are presently active. One active notice involves recreational suction dredging on public lands included within the Roaring Camp resort near the confluence of the North and Middle Forks. BLM has also issued a lease to Roaring Camp for the use of public lands adjacent to their private lands in this part of the canyon. Because placer gold deposits occur in the river channel, the river has potential for recreational panning, sluicing, and suction dredging activities throughout its length.

There is a potential for continued lode gold prospecting in historic underground mines. The river canyon cuts through the Glencoe-Pioneer belt of quartz veins in granodiorite of the West Point Pluton 1 to 3 miles downstream of Highway 26. Over 25,000 ounces of gold have been produced from mines in this mineralized zone. More than half of the active mining claims in this wild segment are located in the Glencoe-Pioneer belt, including claims being worked under the other active notice of operations, which involves the exploration of underground workings. The claimant has applied for a patent to his claims, the processing of which will not happen unless and until the moratorium on mining claim patents imposed by Congress is lifted. The canyon intersects another gold-bearing mineralized zone, the Rich Gulch – Volcano trend, 0.5 to 2.5 miles downstream of the confluence of the North and Middle Forks.

Although historically there has been significant gold production from underground mines in this region, no gold production from these mines has been reported in over 40 years. Mining claim operations in a wild segment of a wild and scenic river require BLM approval of plans of operations involving other than casual use activities. Such plans would be denied or greatly restricted in order to protect the integrity of the wild river classification (subject to valid existing rights).

No deposits of mineral materials such as building stone, sand, and gravel suitable for commercial or private use are known to occur.

The closure to mineral entry would not substantially affect mineral resource development opportunities and the resultant economic impact would be negligible.

MAIN MOKELUMNE RIVER RECREATIONAL SEGMENT

Minerals

As of February 16, 2006, seven mining claims are located within the recreational and scenic segments of this river corridor and eight notices of operations have been filed with the BLM. One of these notices is presently active. The operations consist of prospecting for lode gold in underground mine workings. This notice and the four active claims are on lands upstream of Highway 26. Because placer gold is likely to occur in the alluvium deposited in the river channel, the river has potential for recreational panning, sluicing, and suction dredging activities. Upstream of Highway 26 and downstream of Electra Powerhouse the canyon flows through the Railroad Flat – Buckhorn Lodge trend and the Mokelumne Hill area gold-bearing mineralized zones (respectively). Historically, there has been significant gold production from mines in these areas but no production has been reported for over 40 years.

BLM-approved plans of operations are required for other than casual use mining claim activities in a recreational segment of a wild and scenic river, but the land is open to mineral entry. It is likely that most operations would be allowed but they would be restricted to minimize interference with recreational use of the canyon (subject to valid existing rights).

No deposits of mineral materials such as building stone, sand, and gravel suitable for commercial or private use are known to occur. BLM would not approve sale contracts or free use permits for the removal of mineral materials within a wild and scenic river.

The recreational classification would not substantially affect mineral resource development opportunities.

NORTH FORK COSUMNES RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of Flood Management, there is one reservoir (Jenkinson Lake) that may influence the North Fork Cosumnes River. The Sly Park station is near Jenkinson Lake and the Cosumnes River, North Fork station is within the segment being studied.

Grazing Leases

There is one grazing lease, the Morales lease that includes approximately 1 mile of the North Fork Cosumnes River segment. The allotment consists of 160 acres and supports 25 AUMs in a year-round lease. Mr. Morales has not been using the lease in the last few years, but he indicates that he would like to begin using the lease again. Due to non-use, BLM is considering canceling the lease and the small number of AUMs that the allotment supports. The economic impact of lease cancellation to the lessee is insignificant. Even in the unlikely event of resumption of grazing, grazing impacts on the wild and scenic river segment and outstandingly remarkable features associated with it would be probably be minimal, given the small nature of the lease and no impacts to the ORV.

Forestry

On the North Fork of the Cosumnes are two areas (est. 70 acres) that are identified in the TPCC Base that overlap a possible wild and scenic designation. Under current policy (no mandated green sale harvests) no green sales would happen. Consideration for salvage sales under conditions like fire or major insect/disease outbreaks will be considered..

The SW1/4 SE1/4 Sec.5 T9N, R12E was salvaged during the bark beetle infestation back in 1989. The area in Sec. 6 has very limited access, and has not had any timber operations recorded for over two decades.

Minerals

As of February 16, 2006, 17 mining claims are located within the North Fork, Middle Fork, and Main Cosumnes River scenic segments and five notices of operations have been filed with the BLM. One of these notices is presently active. The operations under this notice consist of seasonal suction dredging for placer gold. All but two of the active claims are placer claims. Because placer gold occurs in these river channels, the river has potential for recreational panning, sluicing, and suction dredging activities.

Within two miles east of Highway 49, the North Fork and Main Cosumnes River segments flow through the Mother Lode gold belt, a zone of steeply dipping gold-bearing quartz veins where significant inferred resources of gold are indicated. Historically, there has been significant production from gold mines in the Mother Lode near the Cosumnes River but no production has been reported for over 40 years.

BLM-approved Plans of operations are required for other than casual use mining claim activities in a scenic segment of a wild and scenic river, but the land is open to mineral entry. It is likely that most operations would be allowed but they would be restricted to minimize impacts to the scenic character of the canyon and would be subject to valid existing rights.

No deposits of mineral materials such as building stone, sand, and gravel suitable for commercial or private use are known to occur on public lands in the river corridors. BLM would not approve sale contracts or free use permits for the removal of mineral materials within a wild and scenic river.

The scenic classification would not substantially affect mineral resource development opportunities.

MIDDLE FORK COSUMNES RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of Flood Management, there are no dams, diversions, or hydroelectric powerhouses influencing the Middle Fork Cosumnes River. There is one station (the Cosumnes River, Middle Fork) within the segment being studied.

Grazing Lease

There is one grazing lease, the Reed lease, which includes approximately one half mile of the Middle Fork Cosumnes River segment. The allotment consists of 280 acres, and supports 22 AUMs from September 1 through October 15. Mr. Reed owns a substantial piece of private property (1,000+ acres) adjacent to the BLM lands that is his base property. It would probably be an insignificant economic impact to the lessee from lease

cancellation. A standard and guideline assessment conducted in 2000, indicated that all standards including riparian function and water quality, are being met at the current level of use. Grazing at the current level would have insignificant impacts on the wild and scenic river and outstandingly remarkable features associated with it.

Forestry

On the Middle Fork of the Cosumnes there are 10 areas (est. 175 acres) of moderate < 40 percent slope identified in the TPCC Base. These lands are generally on the north face of the river canyon and at the transition of the flatter ground coming down at the river bottom. Designation of this segment would most likely preclude any salvage from occurring because of the immediate view and closeness to the river. Salvage would probably only become a consideration under a large-scale catastrophic condition where a majority of river values had already been lost.

Minerals

Same as North Fork Cosumnes above.

MAIN COSUMNES RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. According to the California Department of Water Resources, Division of Flood Management, there are no dams, diversions, or hydroelectric powerhouses influencing the Main Cosumnes River. There is one station (Fiddletown) within the segment being studied.

Minerals

Same as North Fork Cosumnes River above.

SOUTH FORK AMERICAN RIVER

FREE-FLOWING CONDITION: WATER RESOURCE PROJECTS

Foreclosed. Dam construction and or water diversion within the segment designated as part of the Wild and Scenic River Act would be foreclosed. River segments above and below the designated segment would remain available for water diversion or water impoundment. Raising Folsom Dam to the 842 level would not impact the proposed terminus boundary of the wild and scenic river designation, which ends near the Weber Creek confluence. BLM would adjust to the maximum water surface boundary of Folsom Lake.

Management of the public lands and waters along the South Fork American River have been recently addressed through BLM's 2004 *South Fork American River: A Management Plan* and by El Dorado County's 2001 *South Fork American River Whitewater River Management Plan*. Nothing in these two planning efforts would be affected by a wild and scenic river designation. In fact, both planning efforts demonstrate how the ORVs would be protected and enhanced in the future. The California Department of Parks and Recreation has addressed issues in protecting and enhancing the State Historic Park through their existing plan.

Two FERC relicensing projects upstream of this segment – UARP 2101 and Chili Bar 2155 – will not have any affect on wild and scenic designation or the protection of ORVs so long as whitewater boating flows are adequate to handle existing and future beneficial uses for this activity. In order for the Sacramento Municipal Utilities District (UARP 2101) to generate power in the summer, it will have to release water from its White Rock Power House, which will be passed through PG&E's Chili Bar power house and released downstream for public use. No new projects have been proposed in the river segment below Chili Bar power house and none is expected. BLM is not aware of and does not foresee any new hydropower or water diversion projects that will occur in this segment of river. A very small water diversion pump located near Coloma currently serves the residents of Coloma and does not affect boating flows.

Grazing Leases

There are no grazing leases in the South Fork American River segment; therefore, there are not any impacts to grazing in this river segment.

Forestry

This segment is not part of the Folsom Field Office's Intensive Forest Management Base; therefore, possible designation would have no impact on forest production.

Minerals

As of February 16, 2006, eight mining claims are located within the South Fork American River recreational segment and seven notices of operations have been filed with the BLM. One notice is presently active. The operations consist of seasonal suction dredging for placer gold. Within this segment of the South Fork American River is the site of James Marshall's discovery of gold on January 24, 1848, which resulted in the California Gold Rush of 1849. Because the riverbed has deposits of gold-bearing alluvium, the river has potential for recreational panning, sluicing, and suction dredging activities. This recreational river segment begins just downstream of the Mother Lode gold belt, a zone of gold-bearing quartz veins, and it enters the West belt of lode gold deposits about 5 miles upstream from its confluence with Weber Creek. Other than recreational suction dredging, there have been no significant gold development activities in this river corridor for more than 50 years.

BLM-approved plans of operations are required for other than casual use mining claim activities in a recreational segment of a wild and scenic river. It is likely that most operations would be allowed, but they would be restricted to minimize interference with recreational use of the canyon (subject to valid existing rights).

A withdrawal of public lands from mineral entry within this river corridor has been proposed. Refer to the Mineral Potential Assessment Report for CACA-38618 (Verrier, 1998). Although deposits of sand and gravel on these lands may be suitable for commercial or private use, the potential for development is low. BLM would not approve sale contracts or free use permits for the removal of mineral materials within a wild and scenic river.

The recreational classification and the proposed withdrawal would not substantially affect mineral resource development opportunities.

4. Federal Agency that will administer the Wild and Scenic River Segments

NORTH FORK TUOLUMNE RIVER

BLM would administer the wild and scenic river segment.

NORTH FORK MERCED RIVER

BLM would administer the wild and scenic river segment.

NORTH FORK AND MAIN MOKELUMNE RIVER

BLM would administer the wild and scenic river segment.

NORTH FORK COSUMNES RIVER

BLM would administer the wild and scenic river segment.

MIDDLE FORK COSUMNES RIVER

BLM would administer the wild and scenic river segment.

MAIN COSUMNES RIVER

BLM would administer the wild and scenic river segment.

SOUTH FORK AMERICAN RIVER

Management would continue as it is currently, with strong levels of cooperation among the federal, state, and local agencies that currently manage the South Fork American River. BLM would administer the wild and scenic river segment in conjunction with its partners from El Dorado County and California Department of Parks and Recreation. El Dorado County would continue to be the lead agency in managing the whitewater boating activity on the river, and the California Department of Parks and Recreation would continue to manage the Marshall Gold Discovery State Historic Park and two take-out facilities near Salmon Falls. A formal MOU between BLM and both of these agencies would be sought to continue their existing partnerships in managing this segment of river.

5. Estimated cost of acquisition and administration.

NORTH FORK TUOLUMNE RIVER

Wild and scenic designation would not add significantly to administration cost. BLM currently administers one quarter mile of the North Fork Tuolumne River as a wild and scenic river. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. There are currently no lands that would need to be acquired for the purposes of wild and scenic river consideration.

NORTH FORK MERCED RIVER

Wild and scenic designation would not add significantly to administration cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. BLM has 100 percent ownership on this segment of river so there would be no need to acquire land in this segment. BLM currently has been managing this segment since 1992 as a wild and scenic river, and it will continue to do so until Congress decides whether this segment of river should be included into the NWSRS.

NORTH FORK AND MAIN MOKELUMNE RIVER

Wild and scenic designation would not add significantly to administration cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. There are currently no lands that would need to be acquired for the purposes of wild and scenic river consideration. BLM is interested in acquiring Pacific Gas & Electric (PG&E) lands through the Stewardship Council as part of the PG&E bankruptcy settlement with the State of California.

NORTH FORK COSUMNES RIVER

Wild and scenic designation would not add significantly to administration cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. Costs would be incurred on any Section 7 evaluations

conducted by BLM on a potential water project request to the Army Corp of Engineers. Acquisition of riverfront property is expected to continue on a willing seller/willing buyer relationship. Acquisition for wild and scenic purposes is not expected to be a factor.

MIDDLE FORK COSUMNES RIVER

Wild and scenic designation would not add significantly to administration cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. Costs would be incurred on any Section 7 evaluations conducted by BLM on a potential water project request to the Army Corp of Engineers. Acquisition of riverfront property is expected to continue on a willing seller/willing buyer relationship. Acquisition for wild and scenic purposes is not expected to be a factor.

MAIN COSUMNES RIVER

Wild and scenic designation would not add significantly to administration cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. Costs would be incurred on any Section 7 evaluations conducted by BLM on a potential water project request to the Army Corp of Engineers. Acquisition of riverfront property is expected to continue on a willing seller/willing buyer relationship. Acquisition for wild and scenic purposes is not expected to be a factor.

SOUTH FORK AMERICAN RIVER

BLM would continue to be guided by the 2004 South Fork American River Management Plan (SFARMP). BLM would only seek those properties on a willing buyer/willing seller relationship and only on lands that meet the objectives of the Vision Statement in the SFARMP. Cost of administration continues to increase because demand has increased especially for day use trail activities. Wild and scenic designation administration would not add significantly to this cost. BLM would need to manage the uses occurring on the public lands whether or not they are designated wild and scenic. There are currently no lands that would need to be acquired for the purposes of wild and scenic river consideration.

6. State and local political subdivision participation in river preservation and management.

NORTH FORK TUOLUMNE RIVER

The California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORV.

NORTH FORK MERCED RIVER

The California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORV.

The California Department of Fish and Game administers an 80-acre parcel of land upstream of the North Fork Merced for limestone salamander habitat.

NORTH FORK AND MAIN MOKELUMNE RIVER

PG&E has assisted BLM in building a parking area maintenance facility, a trail, and a put-in area at Tiger Creek Afterbay; a parking area, trail, and takeout area including a CXT restroom facility near Highway 26 and Ponderosa Bridge; and parking area, trail, and takeout area at the Electra Day Use site and the Highway 49 bridge. California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORV.

NORTH FORK COSUMNES RIVER

The California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORVs.

MIDDLE FORK COSUMNES RIVER

The California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORVs.

MAIN COSUMNES RIVER

The California Department of Fish and Game is responsible for managing the fish and game on public lands. Local government would be involved with helping BLM by keeping local zoning consistent with protecting ORVs.

SOUTH FORK AMERICAN RIVER

California Department of Fish and Game is responsible for managing the fish and game on public lands. El Dorado County would continue to be the lead agency in permitting the whitewater boating activity in this segment, and the California Department of Parks and Recreation would continue to manage for lunching, launch sites at Marshall Gold State Historic Park and take out sites near Salmon Falls. BLM would continue to issue commercial and organized permits for those groups that choose to utilize the public lands for lunching, launching, and camping purposes.

7. Evaluation of the adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

See Item 2 above.

8. Support or opposition to designation/non-designation from federal, state, local, and other interests.

NORTH FORK TUOLUMNE RIVER

Support or opposition would be determined in the planning process.

NORTH FORK MERCED RIVER

Support or opposition would be determined in the planning process.

NORTH FORK AND MAIN MOKELUMNE RIVER

Support or opposition would be determined in the planning process.

NORTH FORK COSUMNES RIVER

Support or opposition would be determined in the planning process.

MIDDLE FORK COSUMNES RIVER

Support or opposition would be determined in the planning process.

MAIN COSUMNES RIVER

Support or opposition would be determined in the planning process.

SOUTH FORK AMERICAN RIVER

During public meetings held in both Placerville and Auburn, BLM received very little input on the issue of wild and scenic river designation. BLM held a Resource Advisory Council (RAC) meeting on the South Fork American River to discuss the values and criteria to make a recommendation on eligibility. The RAC reported that the South Fork American River met the eligibility requirements of having one or more ORVs, is free flowing in character, and has met the minimum water quality objectives. The RAC recommended the South Fork American River be listed as eligible and that the BLM Folsom Field Office should move forward and conduct the suitability analysis in the RMP. A few members of the public opposed this recommendation. BLM will wait to make any decision on this factor until it receives public comment on its Draft Sierra

RMP/EIS. The El Dorado County General Plan is against a federal wild and scenic river designation for the South Fork American River.

9. The consistency of designation with other agency plans, programs, or policies and in meeting regional objectives.

NORTH FORK TUOLUMNE RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

NORTH FORK MERCED RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

NORTH FORK AND MAIN MOKELUMNE RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

NORTH FORK COSUMNES RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

MIDDLE FORK COSUMNES RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

MAIN COSUMNES RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies. It would not conflict with the State Water Board's Basin Plan.

SOUTH FORK AMERICAN RIVER

Wild and scenic river designation would be consistent with other agency plans, programs, or policies, except in the El Dorado County General Plan where wild and scenic designation is opposed. It would not conflict with the State Water Board's Basin Plan, El Dorado County's South Fork American River Whitewater Management Plan, California Department of Parks and Recreation Marshall Gold Discovery State Historic Park Plan, and the Folsom Lake Management Plan.

10. Contribution to river system or basin integrity.

NORTH FORK TUOLUMNE RIVER

The North Fork Tuolumne River is currently included into the NWSRS for one-quarter-mile of river beginning at the confluence of the wild and scenic Tuolumne River going upstream. This area is very remote and access is limited. Including this segment would benefit the Tuolumne River and basin integrity by insuring free-flowing conditions with no impact to water quality from potential water projects or other activities that could negatively impact resources.

NORTH FORK MERCED RIVER

The North Fork Merced River is currently included in the NWSRS for one-quarter-mile of river beginning at the confluence of the wild and scenic Merced River going upstream. The North Fork Merced drainage is one of the largest tributaries that flow into the wild and scenic Merced River. By potentially adding this river segment into the NWSRS adverse affects from a potential water project or other resource impacts are reduced. This area is very remote and access is limited. Including this segment would benefit the Merced River and basin integrity by insuring free flow, and water quality would remain as it does today.

NORTH FORK AND MAIN MOKELUMNE RIVER

The North Fork and main Mokelumne River are extremely important in maintaining exceptionable water quality standards for human consumption. Wild and scenic designation can assist in protecting this river system from adverse resource activities. Much of the North Fork Mokelumne River is extremely remote with very little access. The steep topography prevents access to just a few selected areas. The North Fork and main Mokelumne River contribute by monitoring and performing best management practices on aquatic and water resources in keeping with the Basin Plan.

NORTH FORK COSUMNES RIVER

The North Fork, Middle Fork, and main Cosumnes River are important watersheds in keeping a healthy river system intact. The Cosumnes River Preserve is an area for waterfowl to winter and is dependent on the health of the Cosumnes River and Mokelumne watershed. The Cosumnes River plays a role in achieving the Basin Plan objectives.

MIDDLE FORK COSUMNES RIVER

Same as North Fork Cosumnes River above.

MAIN COSUMNES RIVER

Same as North Fork Cosumnes River above.

SOUTH FORK AMERICAN RIVER

The South Fork American River runs into Folsom Lake. Downstream the river empties into the Sacramento River, which eventually empties into San Francisco Bay. Current management of the water resources will continue. Folsom Lake will be utilized as a flood control structure once the bypass reaches are built and the dam is raised 7 to 9 feet to protect Sacramento County residents from a 200-year flood event.

11. Management or Protection other than Wild and Scenic River Designation

NORTH FORK TUOLUMNE RIVER

The *Monadenia tuolumneana* snail is dependent on the river ecosystem because it been observed only within 100 feet of the river near limestone outcrops. Management of this species is not expected to be extensive due in part to the inaccessibility of the canyon except in a few places. BLM currently manages a quarter mile of the wild and scenic North Fork Tuolumne River where most of the activity occurs from people accessing the river confluence from boating down the wild and scenic Tuolumne River. Boaters recreate on the North Fork Tuolumne for hiking, camping, and water play. Management is expected to continue as it has in the past. BLM patrols the river by rafts during the boating season. BLM has been monitoring this area since the Tuolumne River was designated in 1984 as a wild and scenic river. If this segment of river were found unsuitable BLM would continue to manage much in same way as it has in the past. As BLM learns more about the side banded keeled snail, management prescriptions may change; however, it is not foreseen that this would be necessary. Any proposed water project would likely be opposed by BLM.

NORTH FORK MERCED RIVER

The Stanislaus National Forest conducted a suitability analysis on its segment of the North Fork Merced River and recommended it unsuitable for recommendation. BLM currently manages the North Fork Merced River as a wild and scenic river and has done so effectively since 1992. There is a possibility that a water project could affect the threatened and endangered limestone salamander and its habitat, but the degree of impact may be difficult to determine. The limestone salamander is found in other areas of the wild and scenic Merced River corridor where such a project would not harm the species. The limestone salamander has been found well above the zone of influence of the river, so the species may not be river dependent. BLM would oppose any proposed water project in this half-mile-wide river corridor. BLM has been effectively managing the species under an ACEC designation. If BLM finds the river unsuitable for recommendation to be included into the NWSRS, then BLM would continue to manage the limestone salamander as it has in the past through its ACEC plan.

NORTH FORK AND MAIN MOKELUMNE RIVER

Managing and protecting the ORVs on the North Fork and main Mokelumne River is ongoing. If BLM finds the river segment unsuitable then it would continue to work with Amador and Calaveras Counties in protecting the viewshed, water quality, and cultural values. Water projects have been proposed in the past on the Electra and other segments of river that could possibly harm these values. On the Electra segment, recreation is extensive, averaging 50 or more people a day visiting the area to participate in day-use activities such as water play, suction dredging, whitewater boating, picnicking, and fishing. BLM has extensive management responsibility in monitoring whitewater boating activities on all of these segments but especially the Electra segment.

NORTH FORK COSUMNES RIVER

Management of the public lands found along all forks of the Cosumnes River will continue to grow as BLM continues to seek land acquisition. If the river segment is found to be unsuitable for wild and scenic designation much of the public land would continue to be managed as it is today. BLM would have to evaluate any water project proposal and its immediate impacts before supporting it or not. Management is not expected to change.

MIDDLE FORK COSUMNES RIVER

Same as North Fork Cosumnes River above.

MAIN COSUMNES RIVER

Same as North Fork Cosumnes River above.

SOUTH FORK AMERICAN RIVER

If the South Fork American is determined unsuitable for designation, BLM would continue to manage this river through its existing plan. BLM would most likely oppose any new water resource project proposed that would impact the current uses and ORVs. Currently, 650,000 users combined utilize this segment of river for whitewater boating and historical interpretation purposes. The whitewater boating activity alone is estimated to bring in \$18 to 33 million per year to El Dorado County. Revenue brought into the community from visitation to Marshall Gold Discovery State Historic Park has not been studied. It is highly unlikely any new water project would ever be approved that would inundate Marshall Gold Discovery State Historic Park. Non-designation would have no affect on El Dorado County and the state of California. If Folsom Dam were to be raised above the 842 mark, then private dwellings and other existing infrastructure could be impacted. The lower run from Henningsen-Lotus Park down to Salmon Falls is the most popular used segment of river, averaging over two thirds of the total use. Any water project affecting this segment of river would have a major impact on current whitewater boating opportunities.

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DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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