Record of Decision & Approved Resource Management Plan for Clear Creek Management Area

United States Department of the Interior
Bureau of Land Management
Hollister Field Office

February 2014

BLM

Hollister Field Office

Publication Index #BLM/CA/PL-2014/004+1617

Record of Decision

&

Approved Resource Management Plan

for

Clear Creek Management Area

Prepared by

U.S. Department of the Interior

Bureau of Land Management

Hollister Field Office

California

February 2014

THIS PAGE IS INTENTIONALLY BLANK.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Hollister Field Office
20 Hamilton Court
Hollister, CA 95023
www.ca.blm.gov/hollister

In reply refer to:
1610-DP-P
CA 0900.38 P

Dear Reader:

We are pleased to announce after several years of collaborative effort, the Record of Decision (ROD) and Approved Resource Management Plan (RMP) for Clear Creek Management Area are complete. This document will provide guidance for the management of approximately 63,000 acres of public lands in southern San Benito and western Fresno counties.

The attached ROD and RMP have been prepared in accordance with the Federal Land Policy Management Act and the National Environmental Policy Act. The ROD links final land use plan decisions to the proposed decisions and analysis presented in the CCMA Proposed RMP/Final Environmental Impact Statement (FEIS) that was released on April 5, 2013, and subject to a 30-day protest period that ended on May 6, 2013. Twenty-one protest letters were received. The protests were reviewed by the BLM Assistant Director, Renewable Resources and Planning, in Washington, D.C. After careful consideration of all points raised in the protests, the Assistant Director concluded the responsible planning team and decision makers followed all applicable laws, regulations, policies, and pertinent resource considerations in developing the CCMA Proposed Plan and the FEIS. Adjustments and points of clarification incorporated into the RMP in response to issues raised in the protest process and final BLM review are discussed in the ROD under Section II.A.9 titled *Changes from the Final EIS to the ROD*. The protest review did not result in any significant changes to the Proposed Action analyzed in the Final EIS.

The ROD serves as the final decision for the land use planning decisions, described in the attached RMP.

This ROD also describes a set of implementation decisions (listed in Section II.B). An appeal opportunity for these decisions is being provided at this time. The process is described in the ROD and at 43 CFR Part 4, Subpart E. The appeal period will close 30 days from the date the Notice of Availability of the ROD/Approved RMP appears in the Federal Register.

Now that the ROD has been signed, we look forward to your participation as we implement the plan. If you would like more information, please contact the Hollister Field Office, 20 Hamilton Ct., Hollister, CA 95023, or by telephone at (831) 630-5000.

Record of Decision and Approved Resource Management Plan for Clear Creek Management Area

Prepared by

U.S. Department of the Interior

Bureau of Land Management

Hollister Field Office

California

February 2014

Rick Cooper

Field Manager, Hollister

James G. Kenna

State Director

THIS PAGE IS INTENTIONALLY BLANK.

Record of Decision & Approved Resource Management Plan for Clear Creek Management Area

Lead Agency: US Department of the Interior (DOI), Bureau of Land Management

Location: California

Contacts: Rick Cooper, Field Manager, Hollister Field Office, 831-630-5000

Requests for copies of the document:

Bureau of Land Management
Hollister Field Office
20 Hamilton Court
Hollister, CA 95023
Phone: (831) 630-5000
Fax: (831) 630-5055
Office Hours: 7:30 a.m. - 4:00 p.m., M-F
Contact us by Email

Electronic Copy on BLM website:
http://www.blm.gov/ca/st/en/fo/hollister/clear_creek_management_area/CCMA_RMP.html

Abstract: The Record of Decision and Approved Resource Management Plan for Clear Creek Management Area is a project of BLM California that supports the agency's mission to sustain the health, diversity, and productivity of the public lands for current and future generation. The Approved RMP was prepared under the authority and regulations implementing the Federal Land Policy and Management Act of 1976 (43 Code of Federal Regulations 1600). It includes broad land use plan decisions that provide the overall direction for managing resources and resource uses in the Clear Creek Management Area. Land use decisions are expressed as goals and objectives (desired outcomes), allowable uses, and management actions anticipated to achieve desired outcomes. Land use decisions identified in the Approved RMP are final and become effective upon the California State Director's signing of the ROD. The Approved RMP also includes implementation-level decisions; future implementation of these decisions may require additional steps and analysis under the National Environmental Policy Act prior to implementation.

The Planning Area includes a portion of southern San Benito County and a portion of western Fresno County. BLM public lands account for more than 63,000 of the 75,000-acre management area. BLM also administers subsurface minerals on approximately 3,500 acres of "split estate" (areas where BLM administers Federal subsurface minerals but the surface is owned by a non-Federal entity). The lands managed by the Hollister Field Office include a variety of settings and landforms, including the southern Diablo Mountain Range, Hernandez Valley, and three major watersheds. The Pajaro watershed drains into the Pacific Ocean; the Arroyo Pasajero and Silver Creek watersheds drain into the San Joaquin Valley.

The decisions outlined in this document will enable to BLM to manage and protect resources on public lands within the Clear Creek Management Area to achieve desired future conditions and management objectives. Planning decisions in this document do not apply to state-, county- or privately-owned lands or other federal lands not managed by BLM.

THIS PAGE IS INTENTIONALLY BLANK.

I. Record of Decision

A. Summary

Since 1984, approximately 31,000 acres of serpentine soils high in asbestos fibers within the Clear Creek Management Area (CCMA) have been designated as the Clear Creek Serpentine Area of Critical Environmental Concern (ACEC) to protect public health and safety. The U.S. Environmental Protection Agency (EPA) released the CCMA Asbestos Exposure and Human Health Risk Assessment on May 1, 2008. The results showed that visiting CCMA more than one day per year can put adults and children above EPA's acceptable risk range for exposure to carcinogens and increased excess lifetime cancer risk from many typical CCMA recreational activities.

This Record of Decision (ROD) for the CCMA Resource Management Plan (RMP) identifies sustainable multiple use management goals, intermediate objectives, and actions and options for meeting those objectives on lands administered by the United States Bureau of Land Management (BLM) Hollister Field Office in San Benito County, California. In general, this ROD and the CCMA RMP establish the following:

1. Areas for limited, restricted or exclusive use; and special designations;
2. Allowable resource uses and related levels of production or use;
3. Resource condition goals and objectives;
4. Program constraints and general management practices needed to achieve the above items;
5. Need for an area to be covered by more detailed and specific activity level plans;
6. Support actions, including resource protection and public health and safety measures, access development, realty actions, etc. as necessary to achieve the above;
7. General implementation sequences, where carrying out a planned action is dependent upon prior accomplishment of another planned action; and
8. Intervals and standards for monitoring and evaluating the plan to determine the effectiveness of the plan and the need for amendment or revision.

This ROD/RMP also details implementation level decisions to address resource management issues on CCMA public lands. The rationale for these decisions is based on the environmental review and analysis conducted in the BLM's 2013 CCMA Proposed Resource Management Plan (PRMP) and Final Environmental Impact Statement (FEIS).

B. Decision

It is the decision of the BLM to approve the CCMA RMP, as described in Chapter II. This decision reflects the Proposed Action, as outlined in the CCMA PRMP and FEIS (BLM 2013), with minor changes from the FEIS to the ROD that are described in Chapter II of this ROD.

This decision was developed under the regulations implementing the Federal Land Policy and Management Act (FLPMA) in accordance with BLM planning regulations (43 CFR 1600). An environmental impact statement was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 to consider this decision. This decision considers public comments; best available scientific and technical information; and results of consultations with federal and state agencies, local governments, Native American tribal governments, a variety of non-governmental organizations, and numerous individuals.

Specific management decisions and guidance for CCMA public lands administered by the BLM's Hollister Field Office are presented in the RMP attached to this ROD. All decisions covered by the ROD are either land use planning decisions that were protestable during the April 5, 2013 to May 6, 2013 protest period in accordance with the land use planning regulations (43 CFR Part 1610), or implementation decisions that may be appealed in accordance with Department of the Interior regulations at 43 CFR Part 4. Chapter II of this ROD/RMP identifies the implementation decisions that are subject to appeal at this time.

C. Range of Alternatives

The CCMA PRMP and FEIS (2013) analyzed the RMP and seven alternatives. BLM developed these alternatives on the basis of, and in response to substantive public input on the existing environment, existing uses, desired future uses, and desired environmental conditions of the CCMA.

The range of alternatives for the CCMA PRMP/FEIS included multiple public use scenarios in the Serpentine ACEC: five of which entail Motorized access (Alternatives A, B, C, D, and E), one Non-motorized access alternative (Alt. F), and one alternative that considers closure of the Serpentine ACEC to all forms of public entry (Alt. G). The anticipated effects and the need to implement proposed management actions or mitigation measures would vary depending on the public use scenarios associated with each alternative.

Alternative G is the environmentally preferable alternative because it would cause the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources.

D. Management Considerations

The CCMA RMP details allowable uses, resources protection measures, and management tools that the BLM will implement in order to protect human health and safety, natural and cultural resources, and support recreation opportunities. The selected management approach to recreation and travel management in CCMA will allow limited opportunities for visitor use within the Serpentine ACEC. It will provide alternate routes for access to public lands surrounding the ACEC that don't require the public to drive through the ACEC. The RMP will also allow BLM to support additional recreation opportunities in the surrounding management zones. Limits on annual visitor use days will allow the public to experience the scenic, biological, cultural and geologic features of the Serpentine ACEC within EPA's acceptable risk range for exposure to asbestos, and with less BLM infrastructure and support needs. The RMP will also provide for improving habitat for endangered species, improved riparian habitat, and an opportunity to reduce soil loss and erosion in areas that are contributing to water quality issues in Clear Creek and the San Benito River.

Pursuant to the NEPA, the CCMA RMP meets the purpose and need (described in Chapter II of this ROD/RMP); is viable and reasonable; and provides a mix of resource protection, management use, and development that is responsive to issues identified in scoping; and meets the established planning criteria, federal laws and regulations, and BLM's land use planning policies.

E. Mitigation and Monitoring

Adopted mitigation measures represent all practicable means to avoid or minimize environmental harm from the approved decisions. All mitigation measures from Chapter II and Appendix V of this ROD/RMP incorporates a monitoring program to ensure that implementation of the decisions achieves BLM goals and objectives for natural and cultural resources on public lands. Monitoring is an essential component of natural resource management because it provides information on changes in resource use, condition, processes, and trends. Monitoring also provides information on the effectiveness of management activities and strategies. Implementation of the decision contained herein will be monitored to ensure that management actions follow prescribed management direction (implementation monitoring), meet desired objectives (effectiveness monitoring), and are based on accurate assumptions (validation monitoring).

F. Public Involvement

1. Public Scoping

The public scoping period for the CCMA RMP/EIS began September 6, 2007, with the publication of the "Notice of Intent To Prepare a Resource Management Plan for the Clear Creek Management Area, California, and Associated Environmental Impact Statement" in the *Federal Register* (Volume 72, Number 172). In conjunction with the NOI, BLM issued a news release on September 6, 2007 to announce three public scoping workshops.

Upon release of the EPA's Asbestos Exposure and Health Risk Assessment for CCMA (2008), BLM issued a Temporary Closure order issued on May 1, 2008 that closed the entire 31,000 acre Serpentine ACEC to all public use and entry. The temporary closure and results of the EPA asbestos exposure and risk assessment quickly polarized interested parties and remained controversial throughout the entire CCMA resource management planning process.

To foster additional public participation and cooperation, BLM issued another news release on May 1, 2008 to announce three additional public scoping meetings that were held in Hollister, San Jose, and Santa Clara, California. The Santa Clara meeting included a presentation by EPA staff to explain the results of the EPA study.

The BLM extended the public scoping period to June 21, 2008 to allow more public involvement and encourage collaboration among interested parties. Ultimately, over 1000 members of the public, mainly off-highway vehicle users, discussed the future management of the Clear Creek Management Area at the CCMA scoping meetings in Santa Clara, Hollister, Coalinga, and San Jose. The CCMA RMP Scoping Report (August 2008) lists the comments from agencies, organizations, individuals identified during the public scoping period.

2. Public Comment Period

The public comment period for the CCMA Draft RMP/EIS opened with publication of the Notice of Availability for the Draft Resource Management Plan for the Clear Creek Management Area, California, and Draft Environmental Impact Statement in the *Federal Register* (Volume 74, Number 232) on December 4, 2009.

Accordingly, BLM issued a news release on December 17, 2009 announcing three public comment meetings for the CCMA Draft RMP/EIS, which were held in Coalinga, Hollister, and Santa Clara,

California. These three public meetings were held in January 2010 to promote public involvement in the CCMA land use planning process. A social and economic workshop was also held on February 22, 2010 to discuss social and economic issues and concerns associated with the range of alternatives in the Draft CCMA RMP/EIS. More than 70 members of the public attended the meeting. Participation at the socioeconomic workshops included local businesses, ranchers/landowners, clubs and organizations, elected public officials, Native Americans, and area residents.

Overall, attendance during these four meetings was high with over 1000 members of the public discussing the future management of the CCMA. Summary reports of these public meeting are included in Appendix XI of the CCMA Proposed RMP and Final EIS (2013). The official public comment period for the CCMA Draft RMP/EIS was extended to April 19, 2010 to allow further public input following requests from numerous planning participants and elected officials. A complete listing of all the agencies, organizations, clubs, and individuals, plus a summary of their comments on the CCMA Draft RMP/EIS is included in Appendix X of the CCMA PRMP and FEIS, Volume II (BLM 2013).

3. Public Protest Period

Following public review and comment on the BLM's "preferred alternative" analyzed in the CCMA Draft RMP/EIS (BLM 2009), the Hollister Field Office developed the CCMA PRMP and FEIS (2013) to incorporate substantive public comments and provide BLM's response based on agency and public input.

BLM's official 30-day public protest period for the CCMA PRMP and FEIS began with the publication of the Notice of Availability for the Proposed Resource Management Plan and Final Environmental Impact Statement for the Clear Creek Management Area in the *Federal Register* (Volume 78, Number 66) on April 05, 2013. The list below provides the names and organizations associated with 21 public protests that were filed timely.

Protester	Organization
Terry Pedersen	Timekeepers Motorcycle Club
Bruce Brazil	California Enduro Riders Association
Ed Tobin	Salinas Ramblers Motorcycle Club
Paul Turcke	Moore, Smith, Buxton, & Turcke Chartered
Mike Wubbels	Friends of Clear Creek Management Area
Amy Granat	--
Robert Hale	California Native Plant Society
Curt McDowell	SaveClearCreek.org
Randall Johnson	--
Michael Smith	San Francisco Gem & Mineral Society
Jennifer Schreck	--
William Spence	Bay Area Mineralogist
Judy Burson	Coalinga Rockhound Society
Paul Slavik	Off-Highway Motor Vehicle Recreation Commission
Dennis Huggins	--
Barbara Thompson	San Benito County
Ken Deeg	--
Ray Iddings	Three Rocks Research
Justin Hensley	--
Steven Kazan	Kazan, McClain, Satterley, Lyons, Greenwood & Oberman
John Stewart	California Association of 4 Wheel Drive Clubs

II. Resource Management Plan

A. Introduction

This chapter describes the BLM's RMP for public lands in the CCMA. In determining the appropriate land use for CCMA, BLM considered placed an emphasis on managing risk to employees and the public. Therefore, the CCMA RMP will limit use that 1) creates high levels of asbestos emissions, 2) creates increased opportunity for human exposure to asbestos, and 3) creates a need to conduct intensive management in areas with high concentrations of asbestos. The RMP, contained herein, details allowable uses, resources protection measures, and management tools that the BLM would implement in order to protect human health and safety, natural and cultural resources, and the CCMA's unique recreation opportunities.

The land use allocations contained in the CCMA RMP establish the official decisions of the United States Department of the Interior Bureau of Land Management for federal land use in the CCMA. This RMP also details implementation level decisions to address resource management issues on BLM-administered lands in the CCMA. The rationale for these decisions is based to the environmental review and analysis conducted in the CCMA PRMP and FEIS (BLM 2013).

1. Purpose and Need

The purpose of the CCMA RMP is to establish goals, objectives, and management actions for BLM-administered lands in CCMA that address current issues, knowledge, and conditions. The CCMA RMP shall guide the management of the lands and resources administered by the Hollister Field Office in CCMA to: 1) minimize asbestos exposure 2) reduce asbestos emissions 3) designate areas in CCMA for motorized, mechanized, and non-motorized/non-mechanized recreation opportunities; 4) protect sensitive natural and cultural resources from impacts due to recreation and other land uses; 5) provide guidance for mineral and energy development; and 6) make other land use authorizations and tenure adjustments.

The need to develop the CCMA RMP arose from numerous changes in circumstances since the current land use plan decisions were adopted. The previous RMP for the area was adopted in 1984. There were several amendments to the 1984 RMP to address public health and safety and resources protection issues in CCMA. However, many other issues that are emerging on public lands were not addressed in those amendments.

2. Planning Area

The Planning Area includes a portion of southern San Benito County and a portion of western Fresno County. BLM public lands account for more than 63,000 of the 75,000 acre management area. BLM also administers subsurface minerals on approximately 3,500 acres of "split estate" (areas where BLM administers Federal subsurface minerals but the surface is owned by a non-Federal entity).

The lands managed by the Hollister Field Office include a variety of settings and landforms, including the southern Diablo Mountain Range, Hernandez Valley, and three major watersheds. The Pajaro watershed drains into the Pacific Ocean: the Arroyo Pasajero and Silver Creek watersheds drain into the San Joaquin

Valley. BLM's mission is to sustain the health, diversity, and productivity of these public lands for the use and enjoyment of present and future generations.

The public lands in CCMA are typically steep and mountainous. Some lands within the planning area consist of chaparral and oak woodland vegetation. Other areas (primarily on the eastern slopes of the Diablo Range) consist of annual grassland and half-shrub vegetation. However, the majority of the planning area is dominated by the serpentine soil formation known as the New Idria formation, which is characterized by sparse vegetation, large barren complexes on hillsides and ridgelines, and a unique forest assemblage of foothill, Jeffrey and Coulter pine. Elevations range from 1,100 -- 5,000 feet.

Within the CCMA boundary is the Serpentine Area of Critical Environmental Concern (ACEC) covering approximately 31,000 acres. It was designated as an ACEC upon approval of 1984 Hollister RMP, based on the human health risk associated with the naturally occurring asbestos and the occurrence of special status plant species endemic to area. The boundaries of the ACEC were defined by mapping of asbestos-laden soils derived from the New Idria serpentine formation. This ACEC is sometimes referred to as the Hazardous Asbestos Area (HAA). Human disturbance to the soils and plants in the serpentine ACEC is a special management concern, because throughout the ACEC, soil formation tends to be slow and the topsoil shallow. Plant regeneration is also slow, and accelerated erosion from human activities has negatively impacted soil and vegetative resources over the years. Minimizing soil erosion and minimizing the damage to vegetation is a management priority.

Within the Serpentine ACEC is the San Benito Mountain Research Natural Area (RNA), which is approximately 4,147 acres in size. RNAs are designated for the protection of public lands having natural characteristics that are unusual or that are of scientific or other interest. The San Benito Mountain RNA (SBMRNA) was designated because of the unique forest assemblage and vegetation communities associated with the serpentine soils. Its' primary purpose is to provide research and educational opportunities while maintaining and protecting a unique assemblage of vegetation in as natural condition as possible.

The Clear Creek Management Area is shown on Map 7 (Special Designations) in Appendix I along with the area of the Serpentine ACEC and the SBMRNA. The acreages (rounded to the nearest hundred) of these areas are shown in Table 2-1, with a breakdown of BLM, other agencies and private land ownership in CCMA.

Table 2-1. Land Ownership in the Planning Area (in acres)

BLM	63,000	30,000	4,100	1,500	83.3
Private	10,600	3,400*	--	--	14.0
State	2,000	1,500*	--	--	2.6
Total	**75,600**	**34,900**	**4,100**	**1,500**	**100.0**

(*) State and private lands are "in-holdings". ACEC designation does not apply to non-BLM lands.

3. Management Zones

Five CCMA management zones (identified below) were defined by BLM interdisciplinary staff based on similar resources conditions, resource uses, and management issues or trends. The five CCMA management zones include:

1. The Serpentine Area of Critical Environmental Concern (ACEC).
2. The Condon Zone, which includes the White Creek drainage area.
3. The Cantua Zone, which includes CCMA public lands in the Cantua drainage, the San Carlos Bolsa, and a disjunct parcel near Idria.
4. The Tucker Zone, which includes public lands surrounding Tucker Mountain, Baker, Byles, and Cane Canyons, and the main entrance to Clear Creek; and
5. The San Benito River Zone, which comprises scattered parcels that border the Serpentine ACEC and other BLM-administered lands in the San Benito River watershed.

Table 2-2 identifies the total acres of BLM-administered lands for each of the five management zones.

Table 2-2. CCMA Management Zones Ownership

Ownership	Serpentine ACEC	Tucker	Condon	Cantua	San Benito River
BLM	30,000	5,900	9,700	14,900	3,600
Private	3,400*	3,300*	2,600*	1,300*	--
State	1,500 *	--	500*	--	--
Total	**34,900**	**9,200**	**12,800**	**16,200**	**3,600**

Acres rounded to nearest hundred. (*) State and private lands are "in-holdings".

4. Scoping/Issues

A. Issues Addressed

The following issues and concerns represent the key themes and priorities that emerged during the planning process.

1. Human health risks associated with CCMA chrysotile form of asbestos;
2. Scientific accuracy and integrity of available information;
3. Measures to reduce and minimize risk to public health and safety;
4. Suitable areas for motorized and non-motorized recreation uses;
5. Desired outcome for areas with high scenic and/or cultural values;
6. Protection of special status species;
7. Potential land tenure adjustments (acquisition & disposal);
8. Wildfire management strategy to protect private and public lands and resources;
9. Fluid and solid mineral development;
10. Impacts on watershed resources and water quality;
11. Impacts on air quality in non-attainment areas.

B. Issues Considered but Not Further Analyzed

The issues listed below were raised during public involvement in the land use planning process and BLM determined they were beyond the scope of the CCMA RMP/EIS. A summary of these issues was provided in the CCMA PRMP and FEIS (2013) and will not be further discussed in this ROD/RMP.

1. Temporary Closure of Clear Creek Management Area
2. Establishing New OHV Recreation Areas Outside of CCMA
3. Add/Remove Special Designations
4. Revised Statute 2477

5. Planning Criteria

The planning criteria identified in the Notice of Intent published in the Federal Register include:

- The RMP will be developed in compliance with FLPMA, all other applicable laws, regulations, executive orders, and BLM supplemental program guidance.
- The planning process will include an EIS that will comply with NEPA standards.
- Economic and social baselines and consequences will be developed in coordination with local and county governments.
- Initiate government to government consultation, including Tribal interests.
- Consider the extent to which the revised plan reduces airborne asbestos emissions, minimizes asbestos exposure, and addresses public health impact of the Hazardous Asbestos Area.
- Consider the extent to which the revised plan reduces accelerated erosion and offsite transport of asbestos fibers on vehicles and clothes due to off-highway vehicle use.
- All new data collected will have information about the data (metadata) stored in a data base. All metadata will meet the Federal Geographic Data Committee (FGDC) standards.
- The RMP/EIS will incorporate by reference the *Standards for Rangeland Health and Guidelines for Livestock Grazing Management (2000).*
- The RMP will result in determinations as required by special program and resource specific guidance detailed in Appendix C of the BLM's Planning Handbook (H-1601-1).
- Decisions in the RMP will strive to be compatible with the existing plans and policies of adjacent local, State, Tribal, and Federal agencies as long as the decisions are in conformance with legal mandates on management of public lands.
- Resource allocations must be reasonable and achievable within available technological and budgetary constraints.

The following 'planning criteria' were presented in the CCMA Proposed RMP (2013). These criteria were based on input from BLM specialists, other agencies, and the public considered during this planning process:

- The CCMA RMP must provide for the needs of the public land user, while protecting sensitive species and habitat, protecting natural and cultural resources, and protecting the unique ecosystem within the SBMRNA.
- BLM shall comply with the State Protocol Agreement between the California BLM and the California State Historic Preservation Officer (SHPO).
- Best Management Practices (BMP) related to watershed improvement projects would continue to be implemented to reduce erosion and off-site sedimentation transport.

- BLM would obtain California Department of Fish and Wildlife permits and Clean Water Act Section 404 permits from the U.S. Army Corps of Engineers, for stream alteration and BMP watershed management practices as necessary and appropriate.
- All land use decisions for lands acquired within the CCMA boundaries by BLM would be incorporated into this RMP/EIS.

6. Planning Process

The BLM has three principal levels of land use planning decisions: the RMP level, the activity level, and the site-specific level. This RMP focuses on broad resource objectives and direction while providing some activity-level guidance and site-specific decisions.

1. Relationship to BLM Policies, Plans, and Programs

Additional major plans, policies and programs that apply to BLM land use planning include:

43 CFR 1610; BLM NEPA Handbook (H-1790-1); BLM Land Use Planning Handbook (H-1601-1)

43 CFR 1610 states that guidance for preparation and amendment of resource management plans may be provided by the Director and State Director, as needed, to help the District and Area Manager and staff prepare a specific plan.

The NEPA Handbook and the Land Use Planning Handbook provide guidance to BLM on the requirements of the Federal Land Policy and Management Act (FLPMA), the BLM's Planning Regulations (43 CFR 1600), and the National Environmental Policy Act (NEPA). Nothing in the Handbooks supersedes the legal and regulatory mandates in the CFR. The Manual and Handbook provide guidance for preparing new Resource Management Plans (RMPs), plan revisions, plan amendments, other equivalent plans (e.g., plans adopted from other agencies), and subsequent implementation-level plans. Procedures and requirements are set forth to ensure that the BLM's plans meet regulatory and statutory requirements. To the extent possible, this guidance integrates land use planning requirements with requirements under NEPA.

BLM Wilderness Recommendations

Wilderness studies were completed for all BLM lands as a requirement under Section 603 of the FLPMA, and recommendations have been formally submitted to Congress by the President. Therefore, these decisions cannot be changed except by Congressional action. In the Planning Area, approximately 1,500 acres are being managed in the San Benito Mountain Wilderness Study Area until Congress makes the final wilderness determination through legislative action.

Rangeland Health Standards and Guidelines

The Central California standards for rangeland health and guidelines for livestock grazing management were adopted in 2000 for managing grazing on BLM public lands in the planning area. BLM is required by policy to use these standards and guidelines for evaluating rangeland health.

Vegetation Treatments Using Herbicides Final Programmatic EIS Record of Decision

The CCMA RMP is subject to the BLM's Vegetation Treatments Using Herbicides Final Programmatic EIS Record of Decision, approved in September 2007. The Programmatic EIS Record of Decision (ROD) has two primary objectives: 1) Determine which herbicide active ingredients are available for use on public lands to improve the agency's ability to control hazardous fuels and unwanted vegetation, and 2) to develop a state-of-the-science human health and ecological risk assessment methodology. This methodology would serve as the initial standard for assessing human health and ecological risk for herbicides that may become available for use in the future.

Transportation and Travel Management Handbook

The BLM's Transportation and Travel Management Handbook (H-8342-1) provides specific guidance for the preparing, amending, revising, maintaining, implementing, monitoring, and evaluating, BLM land use and travel management plans. It provides further guidance related to the objectives, authorities, responsibilities, and policy considerations in BLM Manual 1626, Travel and Transportation Management. This strategy is aimed at recognizing the need to support vehicular access while protecting environmentally sensitive areas on the public lands.

Native American Consultation per Executive Orders 12866, 12898, 13084, 13007 and 13175 et seq.

Executive Order 12866 "Regulatory Planning and Review" intends to enhance planning and coordination with respect to both new and existing regulations and to make the process more accessible and open to the public. Executive Order 13084 "Consultation and Coordination with Tribal Governments" of 1998 established requirements for meaningful consultation and collaboration with Indian tribal governments with respect to the development of regulatory practices on Federal matters that significantly or uniquely affect their communities. Executive Order 13007 "Indian Sacred Sites" refined consultation requirements with tribal groups to include the identification of sacred sites or sacred areas that may be affected by proposed federal actions. Executive Order 13175 "Consultation and Coordination with Tribal Governments" of 2000 further clarified the consultation relationship between the Federal government and tribal communities.

2. Cooperating Agencies

BLM and the U.S. Environmental Protection Agency (EPA) worked as cooperating agencies under a letter of agreement developed for this land use planning process. A cooperating agency assists the lead federal agency in developing an EA or EIS. The CEQ regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6).

3. Consultation and Coordination

Formal consultation with agencies that have jurisdiction by law or special expertise is a vital component of the resource management planning process and environmental impact statement preparation for vesting the public in the effort and allowing for full environmental disclosure.

U.S. Fish and Wildlife Service

The Bureau completed the original Hollister RMP, which approved land use for the Clear Creek Management Area, in 1984. The Hollister RMP decisions for CCMA were amended in 1986 to protect serpentine riparian habitats and the highly-erosive soils in Clear Creek Canyon from off-highway vehicle (OHV) recreation and mining activities. In a biological opinion (l-1-85-F-67) issued on October 29, 1985, the Service concluded that the adoption of the 1985 Clear Creek Canyon Management Plan was not likely to jeopardize the continued existence of the San Benito evening-primrose. The biological opinion was based on .the Bureau's proposals to: seek mineral development withdrawal for Clear Creek Canyon; encourage concentrated, rather than dispersed, camping; protect and enhance sensitive plant habitat by determining the minimum population size necessary to sustain these species; manage habitat to protect or enhance these species; and prepare an ecological study for San Benito evening-primrose.

In 1995, the Bureau completed the Clear Creek Management Area Proposed Resource Management Plan Amendment (1995 Plan) and final Environmental Impact Statement (1995 FEIS). The 1995 Plan was intended to guide management of the CCMA, including the 30,000-acre Serpentine Area of Critical Environmental Concern (ACEC), for the following 15 years (Bureau 1995). The Bureau subsequently requested formal consultation with the Service on the effects of implementing the preferred alternative described in the 1995 FEIS.

In a biological opinion (1-8-96-F-20) issued on September 16, 1997, FWS concluded that the Bureau's implementation of the preferred alternative described in the 1995 FEIS, as modified by additional protective measures developed during the consultation (Bureau 1997a), was not likely to jeopardize the continued existence of the San Benito evening-primrose.

The proposed action analyzed in the 1997 biological opinion involved five primary activities: (1) reduce asbestos exposure and emissions while still providing opportunities for OHV use and minimize dust emissions from main roads; (2) protect existing populations of the San Benito evening-primrose and attempt to expand its range to areas that have moderate to high potential habitat for the species; (3) reduce erosion and sediment transport in all CCMA watersheds; (4) adjust the boundaries of the San Benito Mountain Natural Area to include a cross-section of the unique serpentine and adjacent ecotones found only within this area; and (5) manage the Clear Creek Management Area for dispersed OHV use and establish open or closed areas as conditions and resources warrant. In addition, the Bureau proposed to expand an administrative site to store heavy equipment and maintenance vehicles.

The conclusion reached in biological opinion number I-8-96-F-20 was predicated upon certain elements of the preferred alternative along with the measures that the Bureau developed and proposed during the consultation, including: limiting OHV recreation to 270 of the existing 420 miles of designated open routes; limiting OHV use to 937 of the existing 5,000 acres of open barrens (i.e., play areas); monitoring the condition of San Benito evening-primrose occurrences; monitoring compliance by OHV risers; and implementing administrative controls (e.g., conditional closure when OHV non-compliance impacts the San Benito evening-primrose) in an adaptive management framework (Service 1997).

In 2005, FWS received a request from the Bureau, dated January 12, 2005, for initiation of formal consultation on the effects of the Bureau's implementation of the CCMA RMP Amendment for Route Designation (BLM 2005). Subsequently, the FWS prepared Biological Opinion l-8-05-F-20. After reviewing the status of the species that are known or have potential to occur in CCMA and the effects of route designation, the Service's biological opinion concludes that transportation and travel management on CCMA public lands is not likely to jeopardize the continued existence of any federally listed species.

In 1994, FWS received a request for consultation from the Bureau for oil and gas exploration and development administered by the Hollister Field Office. Subsequently, the FWS prepared Biological Opinion 1-1-94-F-47. After reviewing the status of the species that are known or have potential to occur on public lands available for oil and gas exploration and development, the Service's biological opinion concludes that the reasonable foreseeable activities associated with energy development on public lands administered by the Hollister Field office are not likely to jeopardize the continued existence of any federally listed species.

In 2007, FWS received a request for consultation from the Bureau for livestock grazing administered by the Hollister Field Office in San Benito and Fresno Counties, California. Subsequently, the FWS prepared Biological Opinion l-8-08-F-29. After reviewing the status of the species that are known or have potential to occur in CCMA and the effects of livestock grazing, the Service's biological opinion concludes that livestock grazing is not likely to jeopardize the continued existence of any federally listed species.

On March 27, 2013, BLM sent a letter to the FWS request for concurrence with a Not Likely to Adversely Affect (NLAA) determination for federally listed species that are known or have potential to occur in the planning area as a result of the Proposed Action analyzed in the Proposed RMP and Final EIS (BLM 2013). On September 9, 2013 BLM received a concurrence letter from the Ventura Fish and Wildlife Office that says the implementation of the Proposed RMP is not likely to adversely affect California condor, longhorn fairy shrimp, vernal pool fairy shrimp, and San Benito evening primrose. This concurrence is based on the expected effects of the activities proposed, and the proposed protection and avoidance measures, including limited use of the Serpentine ACEC.

Office of Historic Preservation & State Protocol Agreement

The California Bureau of Land Management (BLM) utilizes a Programmatic Agreement (PA) approved in 1998 for cultural resources management. This PA was revised in 2004 and recently renewed in 2007. The PA is tiered to a national Programmatic Agreement (nPA) approved 1997 between the Advisory Council on Historic Preservation (ACHP), the Bureau of Land Management (BLM) and the National Council of State Historic Preservation Officers.

Signatories to the Statewide Protocol Agreement in California are the California BLM, the California State Historic Preservation Officer and the Nevada State Historic Preservation Officer. It is designed for the California BLM to "integrate its historic preservation planning and management decisions with other policy and program requirements to the maximum feasible extent in the public interest."

The Statewide Protocol Agreement meets Section 106 requirements of the National Historic Preservation Act (NHPA) to "take into account the effects of the agency's undertaking on properties included in or eligible for the National Register of Historic Places" as cited in 36 CFR 800.1(a). The PA also provides for an enhanced level of consultation between BLM, Federally recognized tribal governments, and non-federally recognized Native American groups as well.

Governor's Review and State Consistency Requirements

In accordance with the Federal Land Policy and Management Act (FLPMA) and BLM planning regulations (43 CFR 1610.3-2), BLM RMPs must be consistent with officially approved or adopted resource related plans of State and local governments and must identify any known inconsistencies with state or local plans, policies, or programs. BLM also must provide the Governor with up to 60 days in which to identify any inconsistencies and submit recommendations.

On March 28, 2013, BLM submitted the CCMA PRMP and FEIS to the Governor's Office of Planning and Research, State Clearinghouse and Planning Unit for review. Pursuant to 43 CFR 1603-2, and after consulting with affected State and Local agencies, the Governor's Office of Planning and Research (OPR) determined that the BLM's Proposed RMP for Clear Creek Management Area is not inconsistent with any state or local plans, policies, or programs.

Partnership with Federal, State, Tribal, and Local Governments

Exisitng and potential partnerships could help BLM broaden involvement of interested parties in the future management of public lands. Agreements with local counties and communities will continue to be utilized and explored for activities and needs such as planning, transportation, emergency services, law enforcement, infrastructure, and tourism. BLM will seek to incorporate management actions in the CCMA RMP that would compliment adjacent communities.

BLM will also pursue partnerships with private landowners, the California Department of Fish & Wildlife, and other organizations to promote the successful acquisition and restoration of public lands. Similar partnerships with universities and other academic institutions could also be instrumental in establishing a science review team to garner independent reviews for scientific proposals and answering scientific questions in the CCMA. Final decisions regarding management actions on each of the partner's lands still rest with the respective agency/organization.

Other federal, state, and local government agencies have been involved in the development of the CCMA RMP, including the U.S. Fish and Wildlife Service (USFWS), California Department of Toxic Substances Control (DTSC) and California State Parks Off-Highway Motor Vehicle Recreation Division (OHMVR). Fresno County and San Benito County, the two counties within which the CCMA lies, have not established cooperating agency status, but maintain interest and involvement in the planning process.

The OHMVR Division's comments on the 2009 CCMA Draft RMP/EIS voiced concerns regarding the uncertainty related to EPA's CCMA Asbestos Exposure and Human health Risks Assessment (2008) and the adverse impacts of BLM's land use decisions on OHV recreation opportunities. BLM has previously acknowledged these concerns and the controversy related to naturally occurring asbestos exposure in CCMA. As a result, the CCMA RMP includes a discussion of criteria that would prompt BLM to reevaluate CCMA land use decisions under the objectives for Transportation and Travel Management that are consistent with previous land use planning efforts and agreements with other agencies to cooperate with on-going studies and/or consider significant new information and potential management responses at the CCMA in light of any new findings.

The BLM Hollister Field Office also has existing agreements 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
- California Department of Toxic Substances Control
- California State Office of Historic Preservation
- California Department of Forestry & Fire Protection (CALFIRE)
- California Department of Fish and Wildlife
- California Regional Water Quality Control Board
- Monterey Bay Unified Air Pollution Control Districts

The Tachi Yokut Tribe of the Santa Rosa Rancheria is the only federally recognized Native American group in the planning area. Representatives of the tribe are aware of BLM's CCMA RMP/EIS land use planning process. In general, they support BLM's conservation goals in the planning area provided that they are informed of any potential impacts to cultural resources or other traditionally used natural resources. Non-federally recognized California Indian tribes that were notified and/or consulted include members of several Ohlone/Costanoan tribal groups. Members of these tribes also utilize the planning area for cultural and Native American traditional uses. Consultation between BLM officials in the Hollister Field Office and tribal representatives were conducted for this EIS and many other activities or Proposed Actions within the planning area. The BLM will continue to provide an opportunity for the Tachi Yokut Tribe and Ohlone/Costanoan tribal members to provide input on future management of public lands.

7. Related Plans

The CCMA spans two counties, each with their own General Plan. Both San Benito County and Fresno County regularly update these General Plans to address economic development, population growth, and affordable housing. In addition to these concerns, county General Plans define open space and conservation policy in the Hollister Planning Area and opportunities to coordinate with Federal agencies such as the BLM. The San Benito County General Plan and the Fresno County General Plan were considered in the development of the CCMA RMP and shall be evaluated for consistency during implementation of BLM management activities in the planning area.

A large portion of the CCMA's Cantua zone has been managed cooperatively with the California Department of Fish and Wildlife (CDFW) since the Wildlife Management Plan for the New Idria National Cooperative Land and Wildlife Management Area was signed in 1963. The primary species to be managed was deer. Important actions included in the plan were resource inventories and spot kill maps, with other actions to be cleared with the cooperating agencies. The plan also covered water appropriations and improvements. The 1963 management plan was partially implemented, but is generally outdated and needs to be revised in coordination with the CDFW and other interested parties.

BLM and CDFW also signed the San Benito Deer Herd Management Plan in 1984. The plan identifies a New Idria subunit that includes lands within CCMA. Recommendations for prescribed burning, harvest strategies, and other management tools are provided. In particular, it is recommended habitat improvement projects be concentrated on Condon Peak, Meyers Canyon and San Carlos Bolsa and that OHV use be restricted in those areas. Herds were historically designated by county, i.e. they were delineated by political rather than biological criteria. In recent years CDFW has shifted from the herd-management model and is now focusing on Deer Assessment Units (DAUs). Similarly, BLM is signatory to a 2008 Memorandum of Understanding (MOU) with other Federal resources agencies and the Western Association of Fish and Wildlife Agencies (WAFWA) to manage mule deer on public lands. Parties to the MOU agreed to recognize the importance of mule deer in all land use and populations management planning.

8. Policy

Area Designation and Route Designation

The BLM designates areas as "limited" where it must restrict OHV use to meet specific resource management objectives. In "designating public lands as Open, Limited, or Closed to the use of off-road vehicles," the objective is "to protect the resources of the public lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those public lands." Designation as a

"Limited area' means an area restricted at certain times, in certain areas, and/or to certain vehicular use." "These restrictions may be of any type," including "types of vehicles;" "permitted or licensed use only;" "use on designated roads;" or other restrictions.

- Outside the Serpentine ACEC, the Limited Use area designation shall be defined as restricting motorized use to highway-licensed vehicles and ATV's/UTV's on designated routes described in Appendix II.

- Within the Serpentine ACEC, the Limited Use area designation shall be defined as restricting motorized use to highway-licensed vehicles with a permit for access to specific destinations within the area on the designated route network described in Appendix II.

- All routes designated open in the CCMA RMP satisfy the route designation criteria described in Appendix II. Routes designated as closed under the Limited Area designation in the RMP do not contribute to achieving the CCMA resource condition objectives to ensure overall protection of human health and the environment from airborne asbestos emissions.

The designation of routes within the ACEC was based on the Limited Use area designation for the ACEC, restricting use to a scenic touring route to promote safety (public health) and minimize conflicts among the various uses of the management area. Specific criteria were identified that contributed in selecting the scenic touring route, to ensure overall protection of human health and the environment from hazardous airborne asbestos emissions. The selected route network will provide access to areas of interest, including Clear Creek Canyon, the San Benito Mountain Research Natural Area, Wright Mountain/Joaquin Rocks, Goat Mountain, and the upper San Benito River. The selected routes provide the only practical access to the aforementioned areas, while providing transportation manageability, route continuity, and avoid redundancy and route proliferation. It is acknowledged that some segments of the touring network could be substituted with alternate routes, however it was determined that the selected scenic touring route best provides access to areas of interest with a broad range of recreation opportunities, accommodating a range of highway-licensed vehicles. Segments of the touring route network were primarily selected from the "R" routes which have a higher maintenance objective, are generally wider with less gradient, and best suited to a range of vehicle types. In certain areas routes were selected from the "T" routes to improve connectivity and minimize impacts to sensitive resources.

Conformance with Regulations

The CCMA RMP conforms to Executive Order 11644 (*Use of Off-Road Vehicles on the Public Lands)*, February 9, 1972 (87 F.R. 2877), Executive Order 11989 (*Off-Road Vehicles on Public Lands)*, May 24, 1977 (42 F.R. 26959), and 43 CFR 8342.1 based on the following rationale.

The "Limited" vehicle use area designation allows for a sustainable transportation network within the ACEC. This takes into account human health and safety and the implementation of mitigation measures that would effectively reduce the risk to human health based on the type of activity and the duration of exposure to airborne asbestos emissions evaluated in the CCMA Asbestos Exposure and Human Health Risk Assessment (2008).

9. Changes from the Final EIS to the ROD

In 2012, BLM approved a new Transportation and Travel Management Handbook (H- 8342-1). To comply with the new guidance, minor changes were made to the Proposed Action outlined in the Proposed RMP and Final EIS (BLM 2013) to the CCMA RMP adopted in this Record of Decision. These

changes included edits to text (outlined in red below) and the route designation table in Appendix II based on specific guidance in H-8324-1 for preparing, amending, revising, maintaining, implementing, monitoring, and evaluating, BLM land use and travel management plans.

Recreation - Management Actions

- **REC-USE-B4. Implementation Decision:** Improve access and enhance facilities (i.e. routes, trails, designated camp sites, staging areas, etc.) to support non-motorized recreation opportunities at destinations with unique biological, natural and geologic features within CCMA.

- **REC-USE-E1. Implementation Decision:** Provide motorized access on ~~the~~ designated routes in the Serpentine ACEC for ~~day use by~~ highway-licensed vehicles only.

Recreation - Visitor Services

- **REC-VIS-G1. Land Use Plan Decision*:*** Authorize access into the ACEC for scientific studies, research, and education for accredited institutions and for individuals on a case-by-case basis. Access authorizations would stipulate health and safety ~~requirements~~ mitigation measures, as appropriate.

Travel and Transportation - Management Actions

- **TRANS-E1. Land Use Plan Decision*:*** Designate the Serpentine ACEC as a "Limited" vehicle use area. The Limited Use area designation shall be defined as restricting motorized use to a concise network ~~(30 – 40 miles)~~ of designated routes providing access to key points within the area as a scenic touring route.

- **TRANS-E1.25. Implementation Decision:** Vehicle use in the Serpentine ACEC would be limited to highway-licensed vehicles ~~for day use only~~ with a permit.

- **TRANS-E1.75. Implementation Decision:** All other routes and areas in the Serpentine ACEC are designated closed ~~including barrens~~ or administrative.

- **TRANS-E3.5. Implementation Decision:** Vehicle use in the Tucker, Condon, Cantua, and San Benito River Zones would be limited to highway licensed vehicles and ATV/UTV use only on designated routes (including potential routes and route construction proposals) identified on the Proposed Action Map in Appendix I.

- **TRANS-E4. Land Use Plan Decision*:*** Develop and maintain ~~approximately 30 miles of~~ routes and trails in the Tucker and Cantua Zones for non-motorized recreation following inventory, soil loss assessment, and resources screening using the route designation methodology described in Appendix II and 43 CFR 8342.1 minimization criteria.

- **TRANS-A2.** A **Land Use Plan Decision*:*** All routes not designated open or ~~limited~~ administrative are designated as closed. OHV use is authorized only on designated open or ~~limited~~ administrative routes which are signed for use.

- **TRANS-A7. Implementation Decision:** Modify the designated route network to resolve visitor use conflicts and promote safe public access through minor realignments designed to:

  - Avoid sensitive natural or cultural resources,
  - Reduce impact on sensitive species and habitats,
  - Substantially increase the quality of the recreational experience, but that will not affect sensitive species or habitat, or other sensitive resource values,
  - Avoid ~~mines~~ mine hazards and private lands.

Administrative Routes

Appendix II identifies BLM's administrative routes on the CCMA public lands. These administrative routes are for official government use and other authorized uses to provide vehicular access to private lands, communication sites, and other valid existing rights. These routes differ from closed routes in that they will be regularly maintained and will not be considered for reclamation. Use of administrative routes will require a special recreation permit from the Hollister Field Office that is separate from the general ACEC access permit.

B. Management Decisions

1. Recreation

A. Goals and Objectives

The goals for recreation management are to (1) provide a variety of experiences and settings for a diversity of users and to meet potential changes in demand while minimizing conflicts with adjacent property owners and among user groups; (2) provide a range of recreational use opportunities while protecting sensitive natural and cultural resources from human intrusion; (3) promote sharing of ideas, resources, and expertise to increase the public's appreciation and understanding of natural and cultural resources on BLM public lands; and (4) disseminate information that will foster responsible behavior in order to achieve the highest possible environmental quality on BLM public lands, and (5) reduce public asbestos exposure and asbestos emissions while still providing opportunities for access within the ACEC.

To achieve these goals, the following resource condition objectives are established:

- Maintain a range of facilities to support recreational uses.
- Manage recreation use within the ACEC to reduce airborne asbestos emissions and minimize asbestos exposure for recreation users, to address associated public health impacts.
- Design maps and brochures and educational opportunities to improve visitors' appreciation and understanding of natural and cultural resources on BLM public lands.
- Create experiences and settings appropriate for the desired outcome within developed and undeveloped recreation areas.
- Establish and manage intensive-use areas, where the presence of high quality natural resources and the current or potential demand warrants intensive management practices to protect areas for their scientific, educational, and/or recreational values while accommodating anticipated increases in recreational activities in specific areas.
- Manage recreational facilities to protect natural resources and to meet user needs.
- Manage commercial, competitive, educational, and organized group recreational activities.

Management Zone	**Allowable Use**
Serpentine ACEC	Motorized (Highway-Licensed Vehicles) Non-motorized Shooting
Condon	Motorized (Highway-Licensed Vehicles & ATV/UTV Only) Mechanized/Non-motorized Shooting

Management Zone	Allowable Use
Cantua	Motorized (Highway-Licensed Vehicles & ATV/UTV Only) Mechanized/Non-motorized Shooting
Tucker	Motorized (Highway-Licensed Vehicles & ATV/UTV Only) Mechanized/Non-motorized Shooting
San Benito River	Mechanized/Non-motorized Shooting

B. Management Actions

1. Recreation Use

REC-USE-A7. Land Use Plan Decision*:* Manage CCMA public lands as a Special Recreation Management Area (SRMA).

REC-USE-B1. Land Use Plan Decision*:* Prohibit camping and staging for recreation in the Serpentine ACEC, except at Jade Mill Campground. Allow camping and staging for recreation on public lands outside the ACEC.

REC-USE-B2. Implementation Decision*:* Limit visitor use in the Serpentine ACEC to one half-hour before sunrise to one half-hour after sunset (i.e. day use only), except at Jade Mill Campground.

REC-USE-B4. Implementation Decision: Improve access and enhance facilities (i.e. routes, trails, designated camp sites, staging areas, etc.) to support non-motorized recreation opportunities at destinations with unique biological, natural and geologic features within CCMA.

REC-USE-D3. Land Use Plan Decision*:* Prohibit special recreation permits for organized events in the Serpentine ACEC.

REC-USE-D4. Land Use Plan Decision*:* Manage the Condon Zone with an emphasis on enhancing hunting opportunity and other non-motorized recreation opportunities, while providing for limited motorized opportunities.

REC-USE-E1. Implementation Decision: Provide motorized access on designated routes in the Serpentine ACEC for highway-licensed vehicles only.

REC-USE-E2. Implementation Decision: Authorize motorized access in the Serpentine ACEC by permits only, and limit visitor use to 5 days/year for motorized activities. Limit use for non-motorized activities to 12 days/year.

REC-USE-E3. Land Use Plan Decision*:* Manage the Tucker and Cantua Zones with an emphasis on enhancing hunting opportunity and providing access for other non-motorized recreation opportunities.

REC-USE-E4. Implementation Decision: Improve access and enhance facilities (i.e. trails, designated camp sites, staging areas) to support non-motorized recreation opportunities in the Cantua Zone.

REC-USE-G5. Implementation Decision: Acquire public access to BLM lands in the Tucker and Cantua Zones.

2. Visitor Services

REC-VIS-EF1. Implementation Decision: Improve access for motorized vehicles to Condon Peak.

REC-VIS-EF2. Implementation Decision: Provide a limited number of recreation facilities in the Tucker, Condon, and Cantua zones to meet increased recreation demand while protecting natural and cultural values and providing for public safety.

REC-VIS-BC3. Implementation Decision: Collect visitor use fees on BLM public lands consistent with the Federal Lands Recreation Enhancement Act (2005).

REC-VIS-BC7. Implementation Decision: Implement Best Management Practices (BMPs) related to recreation facilities outlined in Appendix V.

REC-VIS-EF3. Implementation Decision: Maintain existing visitor use facilities outside the Serpentine ACEC, and mitigate human health risk from asbestos emissions inside the Serpentine ACEC through evaluation of dust suppression or surface hardening techniques.

REC-VIS-G1. Land Use Plan Decision*:* Authorize access into the ACEC for scientific studies, research, and education for accredited institutions and for individuals on a case-by-case basis. Access authorizations would stipulate health and safety mitigation measures, as appropriate.

3. Interpretation and Education

REC-INT-A2. Implementation Decision: Continue outreach and education program to create public and visitor awareness of human health risks from exposure to airborne asbestos fibers in CCMA.

REC-INT-BG1. Implementation Decision: Provide recreation information such as maps, brochures, and educational opportunities to enhance visitors' experience on BLM public lands. Incorporate the best available information concerning: asbestos health hazards, OHV use designations, fire prevention, BLM regulations, and natural resources of the area into educational materials and on all maps, brochures, and kiosks.

REC-INT-BG2. Implementation Decision: Cooperate with adjacent private landowners on land management activities to the extent possible.

2. Hazardous Materials and Public Safety

A. Goals and Objectives

The goals for hazardous materials and public safety are to (1) protect public health and safety from exposure to hazardous materials; (2) protect natural resources by minimizing environmental contamination from past and present land uses (i.e., abandoned mine lands) on public lands and BLM-owned and operated facilities; (3) improve Public Safety by mitigating physical and chemical hazards; (4) comply with Federal, State, and local hazardous materials management laws and regulations; (5) maintain the health of ecosystems through assessment, cleanup, and restoration of contaminated lands; (6) manage the costs, risks, and liabilities associated with hazardous materials management to reduce the

governments financial liabilities; (7) integrate environmental protection and compliance with all environmental statutes into BLM activities.

To achieve these goals, the following resource condition objectives are established:

- Identify best management practices (BMPs) and administrative actions (i.e. supplementary rules) to minimize human health risks from exposure to airborne asbestos. This includes limiting time and duration of exposure to naturally occurring asbestos within the Serpentine ACEC.
- Identify and control imminent hazards or threats to human health and/or the environment from hazardous substances releases on public lands (including Abandoned Mine Lands (AML) sites).
- Reduce hazardous waste produced by BLM activities and from authorized uses of public lands through waste minimization programs that include recycling, reuse, substitution, and other innovative, safe, cost-effective methods of pollution prevention.
- Ensure that authorized activities on public lands comply with applicable Federal, State, and local laws, policies, guidance, and procedures.
- Promote working partnerships with states, counties, communities, other Federal agencies, and the private sector to prevent pollution and minimize hazardous waste on public lands. Continue to support research related to NOA and amphibole asbestos related to impacts to the environment, mineralogy, toxicology, and assessment of exposure risks to public health. At a minimum, the BLM will re-examine the body of peer-reviewed data available on this subject within three years following issuance of a record of decision for the CCMA RMP.
- Protect visitors from safety hazards and/or environmental releases of chemicals of concern associated with abandoned mine lands (AMLs) and mining activity.

B. Management Actions

HAZ-BG1. Land Use Plan Decision*:* Restrict the type of activity and the number visits for that activity as the primary means to control risk to public from asbestos exposure.

HAZ-A2. Implementation Decision: Monitor for illegal dumping of chemicals on federal lands.

HAZ-A3. Implementation Decision: Identify mining-related and other public land hazards and eliminate or mitigate as soon as possible.

HAZ-A4. Implementation Decision: Identify and resolve mining related trespasses with priority given to those cases where conflicts are occurring with visitor use and safety.

HAZ-A6. Implementation Decision: Comply with all provisions of the Monterey Bay Unified Air Pollution Control District's remote location exemption (for CCMA) from the ATCM regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.

HAZ-BG2. Implementation Decision: Use best management practices (BMPs) identified in Appendix V for dust abatement on roads and during project implementation.

HAZ-BG3. Implementation Decision: Reduce emissions within the ACEC on major routes with dust suppression and surface hardening techniques as needed. The techniques include, but are not limited to, paving, base rock, chip seal, or applications of surfactants (i.e. biodegradable liquid copolymers) to stabilize and solidify soils or aggregates and control erosion.

HAZ-BG4. Implementation Decision: Issue supplementary rules to minimize exposure to hazardous materials and airborne asbestos fibers, considering technical and budgetary constraints and overall effectiveness of the human health and safety mitigation measures identified below.

- Enforce speed limits (20 mph) on designated routes.

HAZ-BG5. Implementation Decision: Implement Best Management Practices (BMPs) related to Abandoned Mine Lands (AML) and mining activities outlined in Appendix V.

HAZ-BG6. Implementation Decision: Reduce the use of Federal funds for clean-up of contaminated lands by seeking cost avoidance and/or cost recovery from the legally responsible parties.

3. Travel and Transportation Management

A. Goals and Objectives

The goals for travel and transportation management are to (1) continue to maintain roads for resource management purposes; (2) continue to support local counties and the State of California in providing a network of roads for movement of people, goods, and services across public lands; (3) provide motorized access to areas of interest within the ACEC, (4) manage motorized access use to protect resource values, promote public safety, provide responsible motorized access use opportunities where appropriate and minimize conflicts among various user groups.

To achieve these goals, the following resource condition objectives are established:

- Reduce asbestos exposure, as well as limit the miles of routes available for motorized use to reduce asbestos emissions; while still providing opportunities for motorized recreation use. Minimize dust emissions from main roads.
- Maintain or enhance water quality in all watersheds. Manage the route network to ensure that sensitive species and communities maintain or enhance their condition. Reduce erosion and sediment transport in all CCMA watersheds by reducing the number of miles available for vehicle use, and by implementing Best Management Practices for all road work.
- Establish a Scenic Touring Route within the ACEC. Limit travel to route maintenance objective level 4 and level 3 roads, to provide safe travel and accommodate a wide range of vehicle types.
- Provide travel routes to and through BLM-managed lands as appropriate to meet resource objectives while providing for private and public access needs.
- Manage motorized access and mechanized vehicle use in conformance with Area and Route designations.
- Adopt the following "adaptive management criteria" to reassess CCMA land use decisions and implementation decisions associated with human health risks from exposure to airborne asbestos fibers, should circumstances change or new information becomes available that warrants increases in allowable uses and reducing the limits on trails available for motorized and non-motorized recreational use in the Serpentine ACEC.

If any of the following "adaptive management criteria" are met, BLM would reinitiate travel management planning in the Serpentine ACEC to modify transportation and travel management decisions adopted in this RMP:

- Activity based studies that establish effective strategies for reduction in personal exposure to asbestos from off-highway vehicle recreation.
- Research results in a significant reduction in the toxicity values for asbestos resulting in a reduced excess lifetime cancer risk.
- Chrysotile asbestos is removed from the list of Toxic and Hazardous regulated substances.

Pursuant to IM 2008-14 and BLM Manual 1626, these adaptive management criteria provide BLM flexibility to change route designations in the future and address how those routes would be managed within the modified transportation network. At a minimum, the BLM will re-examine the body of peer-reviewed data available on this subject within three years following issuance of a record of decision for this CCMA RMP to determine if there's a need to reconsider the decisions in the CCMA RMP. Under such a scenario, BLM would collaborate with interested parties to evaluate potential changes to the designated route network. The network would be evaluated for suitability for active OHV management and for envisioning potential changes in the existing system or addition of new trails that would help meet land use plan objectives. Any adaptive management decisions related to recreation access or motorized vehicle use would need to conform to Executive Order 11644 (Use of Off-Road Vehicles on the Public Lands) and 43 CFR 8342.1 minimization criteria.

B. Management Actions

TRANS-E1. Land Use Plan Decision*:* Designate the Serpentine ACEC as a "Limited" vehicle use area. The Limited Use area designation shall be defined as restricting motorized use to a concise network of designated routes providing access to key points within the area as a scenic touring route.

TRANS-E1.25. Implementation Decision: Vehicle use in the Serpentine ACEC would be limited to highway-licensed vehicles with a permit.

TRANS-E1.50. Implementation Decision: Designate the following routes open for vehicle use in the Serpentine ACEC: R1, R10, R11, R13, R14, R15, T103, T104, T151, and T153. These designated routes would be developed and maintained to BLM standards.

TRANS-E1.75. Implementation Decision: All other routes and areas in the Serpentine ACEC are designated closed or administrative.

TRANS-E2. Implementation Decision: Develop and maintain transportation facilities (i.e. pull-outs and parking areas) in the ACEC on portions of the vehicle touring route with high scenic values, and other destinations with unique biological, natural and geologic features within CCMA.

TRANS-E3. Land Use Plan Decision*:* Designate the Tucker, Condon, Cantua, and San Benito River Zones as "Limited" vehicle use areas and prepare Travel Management Plans to designate routes of travel.

TRANS-E3.5. Implementation Decision: Vehicle use in the Tucker, Condon, Cantua, and San Benito River Zones would be limited to highway licensed vehicles and ATV/UTV use only on designated routes (including potential routes and route construction proposals) identified on the Proposed Action Map in Appendix I.

TRANS-E4. Land Use Plan Decision*:* Develop and maintain routes and trails in the Tucker and Cantua Zones for non-motorized recreation following inventory, soil loss assessment, and resources screening using the route designation methodology described in Appendix II and 43 CFR 8342.1 minimization criteria.

TRANS-E5. Land Use Plan Decision*:* Enforce temporary closures year-round to protect persons, property, and public lands and resources, especially during periods of extreme wet conditions and during periods of extreme dry conditions.

TRANS-E6. Implementation Decision: Maintain approximately 24.5 miles of designated open routes and trails in the Condon Zone.

TRANS-A2. A **Land Use Plan Decision*:*** All routes not designated open or administrative are designated as closed. OHV use is authorized only on designated open or administrative routes which are signed for use.

TRANS-A4. Implementation Decision: Adopt the route designation methodology described below to satisfy minimization criteria outlined in 43 CFR 8342.1 during development of future travel and transportation management plans:

- Designation decisions would be based on a variety of data, including previous studies, field inventory data, biological, environmental, cultural, and natural and recreation resources, land use, and land ownership.

- BLM would consider the level of impact of each route; the number, density, and intensity of use of each route and area and its relationship to habitat fragmentation and cumulative effects; and ways to minimize the number and intensity of conflicting land uses.

- Evaluate routes relative to designation criteria (see Appendix II) such as, resource sensitivity, soil loss, manageability, intended route use, and recreation opportunity. The route designation criteria are combined in four tiers roughly corresponding to the criteria's likelihood of requiring route closure, described in Appendix II.

- Establish a Data Element Dictionary for each of the resource screening criteria, representing the data on which decisions about authorized vehicle use of routes is based. The data element dictionary describes the responses for each criterion. As routes are screened through the criteria tables, data element codes are assigned based on staff evaluation. The last digit of the element code also represents a scoring feature, with totals greater than nine for all criteria deemed least suitable for open designation. Designation of routes would include mitigation measures or restoration as needed.

- Refer to Appendix II for a complete listing of resource specific evaluations for each route designated "open" for vehicle use in the CCMA RMP and more details about the CCMA route designation methodology.

TRANS-A7. Implementation Decision: Modify the designated route network to resolve visitor use conflicts and promote safe public access through minor realignments[1] designed to:

[1] *"Minor realignment" is defined as a change of no more than ¼ linear mile of an individual designated route. This could include the opening of an existing previously closed route that serves the same access need as the route that is to be realigned. It could also involve re-routes of a segment of a route, to avoid the above mentioned resource conflicts. All new construction will undergo environmental review and NEPA compliance. All realignments and re-routes will be documented in the official record and kept on file at the BLM Field Office.*

- Avoid sensitive natural or cultural resources,
- Reduce impact on sensitive species and habitats,
- Substantially increase the quality of the recreational experience, but that will not affect sensitive species or habitat, or other sensitive resource values,
- Avoid mine hazards and private lands.

TRANS-A13. Implementation Decision: Implement the following BMP's to reduce environmental impacts from travel and transportation management.

Best Management Practices: BLM will monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM will implement Best Management Practices (BMPs) to reduce impacts to watershed resources, and will continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production, and protect sensitive resources. BMPs related to watershed improvement and road maintenance projects will be implemented to reduce erosion and off-site sedimentation transport (see Appendix V).

TRANS-B5. Implementation Decision: Implement additional BMPs related to transportations and roads outlined in Appendix V. Address all route maintenance activities in an annual corrective route maintenance plan. Implement route maintenance and improvement projects consistent with the following guidance:

1. BLM manuals 9113, H-9113-2, 9114,
2. Federal Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects Standards, US Forest Service Trails Handbook 2309.18, sections 2.32 a, b, and c; and
3. 1995 Pacific Watershed Associates (PWA) report will be used for standards, guidelines, and recommendations.

Resource awareness training would be completed by all operators to ensure compliance with adopted route maintenance guidelines, with relevant inventory data incorporated into the training as appropriate. The BLM will continue to implement BMPs to reduce impacts to watershed resources and control non-point source pollution. Soil loss standards will be used in monitoring and assessment of routes and areas, and will serve as the basis in developing corrective route management plans.

TRANS-FG3. Implementation Decision: Decommission and reclaim closed roads to protect sensitive resources, reduce sediment transport, and control erosion.

TRANS-FG4. Implementation Decision: Implement BMPs to reduce offsite water quality impacts from roads and trails that no longer serve their original purpose, or exceed soil loss standards.

TRANS-FG5. Land Use Plan Decision*:* Restrict administrative use of roads and trails during periods of inclement weather.

Vehicle Use Area Designation(s)

Management Zone (acres)	**Area Designation**
Serpentine ACEC (30,000)	Limited
Condon (9,700)	Limited
Cantua (14,900)	Limited
Tucker (5,900)	Limited
San Benito River (3,600)	Closed

Route Designation(s)

Management Zone	Route Designation (Miles)
Serpentine ACEC	Open = 32; Closed = 195; Administrative = 88
Condon	Open = 24.5; Closed = 0
Tucker	Open = 30*; Closed = 0
Cantua	Open = 30*; Closed = 0
San Benito River	Open = 0; Closed = 0
TOTAL:	Open = 86.5*; Closed = 195

(*) Based on approval of Travel Management Plans outlined in TRANS-E3.

4. Biological Resources – Vegetation Resources

A. Goals and Objectives

The goals for vegetation resources are to (1) restore, maintain, or improve ecological conditions, natural diversity, and associated watersheds of high value, high-risk, native plant communities and unique plant assemblages and (2) to restore degraded landscapes and plant communities.

To achieve these goals, the following resource condition objectives are established:

- Maintain or improve current ecological values and processes, productivity, and biological diversity;
- Rehabilitate areas affected by wildland fire and other surface-disturbing activities to stabilize soils and promote growth of desired plant communities;
- Prevent the introduction and proliferation of noxious and invasive weeds.

B. Management Actions

VEG-A2. Land Use Plan Decision*:* Manage the native perennial grassland communities to maintain or increase the population.

VEG-A3. Land Use Plan Decision*:* Give special consideration to the unique stands of big sagebrush and protect these to the extent practicable, especially in the San Carlos Bolsa.

VEG-A4. Land Use Plan Decision*:* Manage conifer forests for their scenic values and unique vegetation characteristics.

VEG-A5. Land Use Plan Decision*:* Prohibit commercial harvesting of conifer forests in sensitive areas (i.e. San Benito Mountain Research Natural Area).

VEG-A6. Land Use Plan Decision*:* Protect known and newly discovered occurrences of sensitive vegetation resources, including vernal pools and riparian zones, from vehicle and camping disturbances through fencing and other physical barriers.

VEG-A7. Implementation Decision: Implement brush clearing, prescribed burning, and seed or seedling introductions as appropriate for selected species.

VEG-A8. Implementation Decision: Use prescribed fire and other management techniques to provide a mosaic of vegetative communities to protect soil, watershed, and wildlife.

VEG-A9. Land Use Plan Decision*:* Maintain sustained yield of vegetation for consumptive and non-consumptive uses.

VEG-A10. Land Use Plan Decision*:* Cooperate with the University of California to continue the barrens restoration pilot program and to establish small scale soil/plant study plots to investigate plant adaptability and nutritional requirements for rehabilitation purposes.

VEG-BG1. Implementation Decision: Include mitigation measures to protect or enhance riparian areas in all activity plans.

VEG-BG2. Implementation Decision: Emphasize locally grown or adapted native seed mixes for restoration activities.

VEG-BG3. Implementation Decision: Utilize management activities that mimic natural disturbance regimes (e.g., fire) to manage and maintain the composition, mixed age classes, and native wildlife habitat of perennial grasslands, chaparral, oak woodland communities, and wetlands.

VEG-BG4. Implementation Decision: Rehabilitate vegetation emphasizing use of local genotypes of native species for revegetation materials following wildland fires and/or other surface-disturbing activities. Allow non-invasive, non-native species to be used in revegetation materials that are temporary and non-persistent.

VEG-BG5. Implementation Decision: Avoid surface disturbance to riparian vegetation except for short-term disturbances that are necessary to restore or enhance riparian conditions in the long-term.

VEG-BG6. Implementation Decision: Mitigate or relocate existing or proposed activities within 100 feet of riparian vegetation that could cause a downward trend in condition of riparian resources.

VEG-BG7. Implementation Decision: Maintain mixed-aged classes for all riparian communities.

VEG-BG8. Implementation Decision: Develop an Integrated Pest Management approach that prioritizes invasive and noxious weed eradication based on the BLM and California State lists.

VEG-BG9. Implementation Decision: Issue non-commercial permits for collecting vegetative products for Native American practices.

VEG-BG10. Implementation Decision: Initiate riparian restoration/improvement projects within systems that have been identified as not functioning or functioning at risk with a downward or static trend.

VEG-BG11. Land Use Plan Decision*:* Provide a mosaic of vegetation communities to protect soil, watershed, and wildlife; maintain sustained yield of vegetation for consumptive and non-consumptive uses.

5. Biological Resources – Fish and Wildlife

A. Goals and Objectives

The goal for fish and wildlife is to provide diverse, structured, dynamic, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.

To achieve this goal, the following resource condition objectives are established:

- Conserve habitat consistent with the *Recovery Plan for Camissonia Benitensis (FWS 2007)*.
- Conserve habitat for migratory birds and species listed on the U.S. Fish and Wildlife Service (USFWS) list of Birds of Conservation Concern.
- Maintain or enhance viable, healthy, and diverse populations of native and desired species, including special status species, where appropriate.

B. Management Actions

HAB-BF1. Land Use Plan Decision*:* Coordinate with the California Department of Fish and Game (CDFG), and the USFWS to control non-native wildlife species.

HAB-BF2. Land Use Plan Decision*:* Preserve fallen trees and snags in occupied and potential habitat for raptors. Prohibit collecting wood in areas known to provide breeding habitat.

HAB-BF3. Implementation Decision: Mitigate or relocate man-made barriers that substantially impede migration within wildlife travel corridors, as appropriate.

HAB-BF4. Implementation Decision: Maintain existing water improvements (e.g., guzzlers).

HAB-BF5. Land Use Plan Decision*:* Avoid disturbance, including road construction and recreational activities, within a 0.5-mile radius of roosting sites of owls, ospreys, eagles, buteos, accipiters, and falcons.

HAB-BF6. Land Use Plan Decision*:* Avoid disturbance, including road construction and recreation activities, within a one-mile radius around nesting sites of of owls, ospreys, eagles, buteos, accipiters, and falcons.

HAB-BF7. Land Use Plan Decision*:* Cooperate with the CDFG to reintroduce, release, and/or restore populations of native fish and wildlife species into historic and occupied ranges with suitable habitat.

6. Biological Resources – Special Status Species

A. Goals and Objectives

The goal for management of special status species is to (1) maintain populations of special status species; and (2) actively contribute to recovery so as to promote downlisting and delisting of special status species.

To achieve these goals, the following resource condition objectives are established:

- Manage listed, proposed, or candidate threatened or endangered species to comply with the provisions of the Endangered Species Act (ESA).
- Manage special status plant and BLM-recognized significant plant communities consistent with BLM policy on Special Status Species Management (BLM Manual 6840).
- Preclude the need for listing proposed, candidate, and sensitive species under the ESA.
- Improve the condition of special status species and their habitats to the point where their special status recognition is no longer warranted.

B. Management Actions

SSS-A7. Land Use Plan Decision*:* Manage public lands to protect and enhance sensitive, rare, threatened, or endangered species. Evaluate all known or potential habitat before implementing actions that may affect the habitat. Conduct consultations in accordance with Section 7 of the Endangered Species Act, if appropriate.

SSS-A8. Land Use Plan Decision*:* Manage portions of Clear Creek, Sawmill Creek, San Benito River, and San Carlos Creek for introducing the San Benito evening-primrose into suitable habitat.

SSS-A9. Implementation Decision: Monitor all populations of the San Benito evening-primrose and their protective measures for compliance relating to OHV trespass.

SSS-A11. Implementation Decision: Rehabilitate (by ripping and/or pitting) potential habitat areas for the San Benito evening primrose in Clear Creek Canyon. Seed would be collected from nearby populations and broadcast over these areas (approximately one-half acre each) subsequent to seedbed preparation. Evaluate and implement vegetation manipulations, such as brush clearing, prescribed burns and seed or seedling introductions, for San Benito evening primrose habitat areas of high and moderate potential.

SSS-A15. Implementation Decision: Monitor all unprotected populations of special status species for possible adverse impacts from vehicles and other uses and implement protective actions as warranted.

SSS-A16. Implementation Decision: Inventory suitable habitat for all sensitive plant species. Monitor any new populations of special status species documented during inventories for adverse impacts and implement protective actions as warranted.

SSS-BC2. Land Use Plan Decision*:* Prohibit collection of special status species, except for scientific research or Native American traditional use.

SSS-BC3. Land Use Plan Decision*:* Protect ponds, wetlands, or riparian areas known to support or that could potentially support California tiger salamander or yellow-legged frog to maintain natural corridors between pools/wetlands and upland habitat so that continuous native plant coverage allows adequate movement of these species.

SSS-BC4. Land Use Plan Decision*:* Avoid disturbance, including road construction and recreation activities, within a one-mile radius of nesting sites (and a 0.5 mile radius of roosting sites) of the California condor, eagles, and prairie falcons.

SSS-DEF1. Implementation Decision: Adopt the BLM's Compliance Monitoring Plan outlined in Appendix IV for existing CABE habitat and populations.

SSS-DEF2. Implementation Decision: Mitigate or relocate surface-disturbing activities proposed within occupied or potential habitat for special status species.

SSS-G2. Land Use Plan Decision*:* Limit proposed new surface-disturbing activities within occupied or potential habitat for special status species. Limit long-term disturbances in potential habitat.

SSS-G3. Implementation Decision: Conduct restoration projects in closed areas that disturb or interrupt hydrologic and/or ecological processes to support special status species and significant plant communities.

7. Air Quality

A. Goals and Objectives

The goal for air quality management is to ensure that BLM authorizations and management activities comply with the Federal Land Policy and Management Act (FLPMA) and local, State, and Federal air quality regulations, requirements, State Implementation Plans, and Regional Air Board standards and goals.

To achieve this goal, the following resource condition objectives are established:

- Manage prescribed fires to comply with established air quality standards and smoke management rules and guidelines;
- Manage energy and mineral development to avoid degradation of established air quality standards; and
- Coordinate with Regional Air Quality Control Districts on resource management activities to ensure consistency with State Implementation Plans for air basins affected by activities in the CCMA.

B. Management Actions

AIR-A1. Land Use Plan Decision*:* Comply with State and Federal air quality regulations, including but not limited to:

- National Ambient Air Quality Standards (NAAQS) primary standards for sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, ozone, and lead (40 CFR 50);
- NAAQS secondary standards (40 CFR 50); and
- The California State Implementation Plan and the California Air Pollution Control Laws (California Health and Safety Code §39606).

AIR-A5. Land Use Plan Decision*:* Comply with all provisions of the California Air Resources Board (CARB) Airborne Toxic Control Measures (ATCM) regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.

AIR-BG1. Implementation Decision: Incorporate mitigation measures in Appendix V for activities and projects on BLM lands in order to reduce airborne asbestos emissions and comply with applicable Federal, State, and local air quality regulations.

AIR-BG2. Land Use Plan Decision*:* Manage motorized vehicle travel on dirt roads to minimize air pollution from dust and exhaust by restricting vehicle types and seasons when vehicles could be used.

AIR-BG3. Land Use Plan Decision*:* Manage prescribed fire to minimize smoke and coordinate with Federal, State, and local governments in smoke-sensitive areas such as wildland-urban interface areas.

8. Soil Resources

A. Goals and Objectives

The goal for soil resources management is to manage soil on BLM lands such that functional biological and physical characteristics that are appropriate to soil type, climate, and land form are exhibited (Rangeland Health Standards and Guidelines, 2000).

To achieve this goal, the following resource condition objectives are established:

- Control erosion and sediment transport;
- Implement soil loss assessment procedures for road and trail maintenance;
- Implement BMPs for non-point source pollution control;
- Maintain vegetation cover at or above the level necessary to stabilize soils; and

B. Management Actions

SOIL-A3. Land Use Plan Decision*:* Close roads to vehicle use during periods of extreme wet weather in areas where sustained vehicle use may compromise the integrity of the road surface, to reduce rutting of roads and trails and sediment transfer, and to improve visitor safety.

SOIL-A10. Land Use Plan Decision*:* Prioritize designated 'closed' routes for restoration and reclamation to allow them return to a natural state.

SOIL-BG1. Implementation Decision: Establish remote automated weather stations (RAWS) or apply the use of other available technologies in order to monitor precipitation and soil moisture content in CCMA.

SOIL-BG2. Land Use Plan Decision*:* Require an approved erosion control strategy and topsoil segregation/restoration plan for proposals involving surface disturbance on slopes of 20 to 40 percent. No surface disturbance on slopes greater than 40 percent would be allowed unless it is determined that it would cause a greater impact to pursue other alternatives.

SOIL-BG3. Implement Best Management Practices (BMPs) related to barrens restoration/ management outlined in Appendix V.

9. Water Resources

A. Goals and Objectives

The goals for water resources management are to (1) maintain, restore, or improve water quality and quantity to sustain the designated beneficial uses on BLM lands and (2) ensure that surface and groundwater quality comply with the Clean Water Act (CWA) and with California State standards.

To achieve these goals, the following resource condition objectives are established:

- Maintain the existing quality and beneficial uses of water, protect waters where they are threatened, and restore currently degraded waters. This objective is of even higher priority in the following situations:
- Where the beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the CWA;
- Where aquatic habitat is present or has been present for Federal threatened or endangered species, candidate species, and other special status species dependent on water resources; and
- In water resource-sensitive areas such as riparian or wetland areas.
- Protect all designated beneficial uses by preventing or limiting non-point source pollution.

B. Management Actions

WAT-BG1. Implementation Decision: Implement BMPs related to watershed restoration/ management outlined in Appendix V to prevent degradation of water quality.

WAT-BG2. Land Use Plan Decision*:* Maintain existing developed water sources (i.e., spring developments and reservoirs). Develop new sources on a case-by-case basis through project-level planning.

WAT-BG3. Land Use Plan Decision*:* Maintain adjudicated water rights; inventory water sources not adjudicated or water rights sought, where applicable.

WAT-BG4. Land Use Plan Decision*:* Submit request to the California State Department of Water Resources to establish Federal reserved water rights on acquired lands to ensure water availability for multiple use management and for functioning, healthy, riparian and upland systems.

WAT-BG5. Land Use Plan Decision*:* Manage CWA 303(d)-listed impaired water bodies to meet properly functioning condition (PFC) objectives relative to beneficial uses and total maximum daily loads (TMDLs) for mercury and sediment.

WAT-BG6. Land Use Plan Decision*:* Maintain stable watershed conditions and implement passive and active restoration projects to protect beneficial uses of water and meet TMDLs for mercury and sediment.

WAT-BG7. Land Use Plan Decision*:* Work with Coordinated Resource Management Planning groups and other private landowners or non-profit organizations to prevent water bodies from reaching impairment levels that would result in listing under CWA 303(d).

WAT-BG8. Implementation Decision: Periodically monitor water quality in seasonal pools and perennial ponds containing known or suspected threatened and endangered (T & E) species. Identify water quality issues and initiate repairs, within environmental constraints.

WAT-BG9. Land Use Plan Decision*:* Manage all fluvial systems functioning at risk to achieve proper functioning condition.

10. Special Designations

A. Areas of Critical Environmental Concern /Research Natural Areas

1. Goals and Objectives

The goals for Areas of Critical Environmental Concern (ACECs) and Research Natural Areas (RNAs) are to identify and manage ACECs and RNAs to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

To achieve these goals, the following resource condition objectives are established:

- Manage the Serpentine ACEC to reduce human health risks in areas with high concentrations of asbestos fibers by limiting use that
- creates high levels of asbestos emissions,
- creates increased opportunity for human exposure to asbestos, and
- creates need for intense management presence and infrastructure in the ACEC.
- Manage the Serpentine ACEC to protect special status species associated with the serpentine soils of the New Idria Formation
- Manage the San Benito Mountain RNA for the unique forest assemblage and scientific research and educational opportunities.

2. Management Actions

ACEC-BG1. Land Use Plan Decision*:* Maintain the designation of the 30,000-acre serpentine geologic formation and area of serpentine soils high in asbestos fiber as the Serpentine Area of Critical Environmental Concern (ACEC). Maintain the 4,147-acre designation of the San Benito Mountain Research Natural Area (RNA).

ACEC-BG2. Land Use Plan Decision*:* Manage the Serpentine ACEC for public health and safety, special status species, and cultural, historic, and scenic values. Manage the San Benito Mountain RNA for its unique forest assemblage and the associated scientific research and educational values.

ACEC-BG3. Implementation Decision: Adopt the San Benito Mountain RNA Management Plan described in Appendix III.

ACEC-BG4. Implementation Decision: Develop stipulations for scientific research and collection in concert with individuals and institutions involved.

ACEC-BG5. Implementation Decision: Establish appropriate guidelines that protect special status species habitat from surface disturbing activities.

B. Wilderness Study Areas

1. Goals and Objectives

The goal for managing Wilderness Study Areas (WSAs) is to manage these areas consistently with the Wilderness Act of 1964, as applicable. More specific management direction can be found in 3 CFR 6300. BLM is required to manage WSAs consistently with Section 603 of the FLPMA and the Interim Management Policy for Lands Under Wilderness Review (H-8550-1) until Congress designates the areas as wilderness or releases them from the Section 603 FLPMA provision. If the areas are released, they would be managed consistently with the provisions within the RMP.

To achieve these goals, the following resource condition objectives are established:

- Manage existing WSAs in conformance with the Interim Management Policy for Lands Under Wilderness Review.

2. Management Actions

WILD-AG1. Land Use Plan Decision*:* Manage all designated wilderness consistent with the Wilderness Act of 1964 and Public Law 107-370-(2)(2). Manage WSAs under the Interim Management Policy (H-8550-1) until Congress designates wilderness areas or until non-suitable WSAs are released.

WILD-AG2. Land Use Plan Decision: Manage the 1,500-acre San Benito Mountain WSA consistent with the goals and objectives and the resource management actions for the Serpentine ACEC and the San Benito Mountain RNA, if the area is released from WSA status by Congress.

WILD-AG3. Implementation Decision: Conduct necessary maintenance of routes through the area to enhance overall wilderness quality by minimizing route-related impacts to the sensitive resources inside the SBMRNA/WSA. Areas along the roadways near the WSA will be rehabilitated using the best management practices outlined in Appendix V.

C. Wild and Scenic Rivers

Pursuant to *BLM Manual 8351 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management*, the BLM evaluates identified river segments for their eligibility and suitability for Wild and Scenic River designation through its RMP process. The criteria and information upon which WSR river eligibility and suitability determinations are based are included in Appendix VI. Only Congress can designate Wild and Scenic Rivers to be included in the National Wild and Scenic River System (NWSRS).

1. Management Actions

WSR-AG1. **Land Use Plan Decision*:*** None of the river and stream segments on BLM public lands in CCMA were determined to be eligible and suitable for inclusion in the Wild and Scenic River System. Therefore, BLM recommends that none of the rivers and streams identified in Appendix VI be included in the NWSRS.

D. Lands with Wilderness Characteristics

The goal for managing Lands with Wilderness Characteristics (LWCs) is to emphasize other multiple uses while applying management restrictions (conditions of use, mitigation measures) to reduce impacts to wilderness characteristics Management of LWCs is part of BLM's multiple use mandate. Lands within the CCMA were inventoried in 2011 in accordance with BLM Handbook 6310-1 Wilderness Inventory and Study Procedures, to identify public lands with wilderness characteristics such as naturalness, opportunities for solitude, primitive and unconfined recreation, and other associated qualities.

1. Management Actions

LWC-EF1. Implementation Decision: Manage the 5,070 acres of lands inventoried for wilderness characteristics in the Cantua Zone to emphasize primitive, non-motorized recreation opportunities. Design, construct, and maintain routes and trails in the area to enhance primitive recreation experience by minimizing route-related impacts to solitude, naturalness, and other special features.

11. Livestock Grazing

A. Goals and Objectives

The goals for livestock grazing management are to (1) provide for a sustainable level of livestock grazing consistent with other resource objectives, (2) identify lands and forage available for livestock grazing, and (3) achieve the standards and implement guidelines for rangeland health as outlined in the 2000 Central California Standards and Guidelines for Livestock Grazing (hereafter referred to as the Standards and Guidelines).

B. Management Actions

RANG-AE1. Land Use Plan Decision*:* Make public acres and animal unit months (AUMs) available for livestock grazing as summarized in Table 2-3.

RANG-AE2. Land Use Plan Decision*:* Ensure that levels and duration of rest or deferment after a wildfire are consistent with site characteristics, ecological site descriptions, land management objectives, short-term emergency stabilization, and rehabilitation objectives such as rehabilitating the desired plant community.

RANG-AE3. Land Use Plan Decision*:* In order to meet physiological requirements of key plant species or to meet other resource objectives, control the intensity, duration, and timing of grazing and/or provide for periodic deferment and/or rest where livestock grazing is limiting the achievement of multiple use objectives.

RANG-AE4. Implementation Decision: Conduct interdisciplinary rangeland health assessments on all grazing allotments to evaluate conformance with the Standards and Guidelines.

RANG-AE5. Implementation Decision: If new information demonstrates that livestock grazing within a particular allotment is not compatible with conservation or preservation of endangered, threatened, candidate, or special status species, these lands would become unavailable for livestock grazing.

RANG-AE6. Implementation Decision: When evaluation of rangeland health assessments determines that exclusion of livestock grazing is necessary to meet public health objectives and resource objectives (i.e., cultural or historical resources protection, geologically unstable area protection, sensitive plant or animal areas, intensive recreational use areas, etc.), these lands would become unavailable for livestock grazing.

RANG-AE7. Implementation Decision: Where possible fence spring developments to prevent trampling by livestock.

RANG-AE8. Land Use Plan Decision*:* Cancel forage allocations on grazing allotments and make lands unavailable if lands are disposed of through exchange or sale or are devoted to another purpose.

RANG-AE10. Land Use Plan Decision*:* Develop allotment management plans to bring allotments not meeting the Standards and Guidelines due to current livestock grazing management into compliance.

RANG-AE11. Land Use Plan Decision*:* Allow grazing on newly acquired land inside of allotments not in compliance with the Standards and Guidelines where current livestock grazing management is not the cause.

RANG-AE12. Land Use Plan Decision*:* Allow grazing on allotments not in compliance with the Standards and Guidelines where current livestock grazing management is determined as not being the cause of noncompliance.

Table 2-3. Livestock Grazing Summary

Allotment Number	Allotment Name	Mgmt Zone [5]	Public Acres	Public AUMs [1]	Livestock Class [2]	Period Begin Date	Period End Date
4301	Akers [4]	SBR	368	69	C	1-Mar	28-Feb
4308	Birdwell, Perry W [4]	S, CON	1,389	72	C	1-Mar	28-Feb
--	**Birdwell Addition**[3,4]	--	447	5	--	--	--
4319	Lewis Flat [4]	SBR	190	19	C	1-Mar	28-Feb
4352	Willow Spring	SBR	940	80	C	1-Mar	28-Feb
4359	Quarter Circle A-1 [3]	S, CON	3,348	155	C	1-Mar	28-Feb
4374	Joaquin Rocks [4]	CON	3,568	275	C	1-Mar	28-Feb
--	**Joaquin Rocks Addition**		**3,619**	**210**	--	--	--
4379	Upper Los Gatos Crk. [3]	S, CON	4,317	1,036	Y	1-Jan	31-May
4398	Adobe [4]	CAN	2,124	162	C	1-Mar	28-Feb
4401	Williamson	CON	1,920	126	C	15-Feb	15-Aug
4409	Bar B Ranch	T	1,957	129	Y	1-Mar	28-Feb
4410	Hernandez Ranch [3]	S, T	2,823	159	Y	1-Mar	28-Feb
4411	Ashurst Ranch [3,4]	S, T	12,246	2,104	Y	1-Dec	30-Apr

Allotment Number	Allotment Name	Mgmt Zone [5]	Public Acres	Public AUMs [1]	Livestock Class [2]	Period Begin Date	Period End Date
--	**Ashurst Ranch Addition**	--	**160**	**0**	--	--	--
4414	Diamond A [4]	CAN	7,254	1,804	Y	1-Dec	30-Apr
--	**Diamond A Addition**	--	**10,523**	**1,110**	--	--	--
4418	Goat Mountain [3,4]	S, SBR	440	32	C	1-Mar	28-Feb
14	**TOTALS**	**--**	**57,633**	**7,547**	--	--	--

[1] AUM (Animal Unit Month) = one cow + one calf.
[2] Livestock Class: C = cattle, Y = yearling.
[3] Includes public lands within HAA.
[4] Includes public lands outside of CCMA.
[5] Management Zone: S = Clear Creek Serpentine ACEC, T = Tucker, CON = Condon, CAN = Cantua, SBR = San Benito River.

12. Energy and Minerals

A. Goals and Objectives

The goal for energy and mineral resource management is to allow development of energy and mineral resources to meet the demand for energy and mineral production while protecting natural and cultural resources in the area.

To achieve this goal, the following resource condition objectives are established:

- Balance responsible mineral resource development with the protection of other resource values.
- Provide opportunities for mineral exploration and development under the mining and mineral leasing laws.
- Provide mineral materials needed for community and economic purposes.

B. Management Actions

ENERG-A1. Land Use Plan Decision*:* Consider minerals exploration, development, and production within environmental and multiple-use management constraints. Withdrawals would be initiated to affect locatable mineral segregations on specified lands.

ENERG-A3. Land Use Plan Decision*:* Consider mineral and geothermal exploration and development in other CCMA locations on a case-by-case basis.

ENERG-A4. Land Use Plan Decision*:* Allow oil and gas exploration and development within environmental constraints to protect special status species and paleontological resources.

ENERG-A5. Land Use Plan Decision*:* Make public lands available for orderly and efficient development of mineral and energy resources under principles of balanced multiple-use management.

ENERG-BC3. Land Use Plan Decision*:* Require No Surface Occupancy stipulations on all recreation and public purposes (R&PP) lease areas.

ENERG-DEF1. Land Use Plan Decision*:* Allow no mineral leasing or sales on public lands in the Serpentine ACEC. Recommend withdrawal of the entire 30,000-acre ACEC from locatable mineral entry.

ENERG-DEF2. Land Use Plan Decision*:* Allow mineral leasing or sales on public lands outside the ACEC, and stipulate that "No Surface Occupancy" is allowed on occupied special status species habitat within oil and gas lease areas.

ENERG-DEF3. Land Use Plan Decision*:* Make the Serpentine ACEC an exclusion area for renewable energy development. Make all other Zones available for wind energy development consideration, subject to the BMPs outlined in Appendix VII.

Summary of Energy and Mineral Development (Acres)

Type of Entry	Status	Proposed Action
Leasable	Available	36,500
Leasable	Unavailable	30,000
Salable	Available	36,500
Salable	Unavailable	30,000
Locatable	Open	36,500
Locatable	Closed	30,000
Renewable	Available	36,500
Renewable	Unavailable	30,000

Note: Calculations based on 63,000 acres of BLM-managed lands, plus 3,500 acres of "split-estate".

13. Cultural Resources

A. Goals and Objectives

In accordance with BLM policy (DM 8130.23), the goals for cultural resources management are to:

- Preserve and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations (per FLPMA Sec. 103(c), 201(a), 202(c); NHPA Sec. 110(a); ARPA Sec. 14(a)), and
- Seek to reduce imminent threats and resolve potential conflicts on cultural resources, from natural or human-caused deterioration, or from other resource uses (per FLPMA Sec 103(c), NHPA Sec. 106; 110(a)(2)).

The BLM's cultural resources management program relies on an integrated system of identifying and evaluating cultural resources, deciding on their appropriate use(s), and administering them according to cultural resource law and policy.

The primary objectives for this integrated management system are to:

- Respond in a legally sufficient and professional manner concerning historic preservation and cultural resource protection;
- Recognize the potential public and scientific uses of cultural resources on the public lands, and manage the lands and cultural resources so that these uses and values are not diminished but rather are maintained and enhanced.
- Ensure that proposed land uses, initiated or authorized by BLM, avoid inadvertent damage to Federal and non-Federal cultural resources.

B. Management Actions

CULT-COM1. Land Use Plan Decision*:* Protect "at-risk" archeological or other cultural resources, including prehistoric and historic sites, using the BMPs available with physical ("on-the-ground") and/or administrative methods to achieve improved site stabilization, protection, or health.

CULT-COM2. Land Use Plan Decision*:* Utilize a variety of heritage education programs that promote the public stewardship of cultural resources, including but not limited to conventional outreach efforts, and participate in the following programs:

- *California Archaeological Site Stewardship Program (CASSP) and the California Indian Site Stewardship* program, which provide training for volunteer site stewards for site monitoring, protection, and enhancement);

- *Cooperative Stewardship*, which involves the BLM and the California Office of Historic Preservation (OHP) in interpretive outreach efforts with involvement from tribes and educational institutions;

- *Professional and Avocational Societies*, in which the BLM attends meetings and conferences to enhance public outreach, education goals, and increase awareness of BLM's cultural resource management programs and to support avocational societies to advance cooperative efforts in public outreach and education; and

- *Archeological and Cultural Awareness Program (ACAP)*, wherein BLM partners with tribes and other Federal and State agencies to conduct evaluations and enhancement projects using volunteers.

CULT-COM3. Land Use Plan Decision*:* Evaluate and manage all cultural resource properties appropriately using the Use Allocation and Desired Outcome management criteria for cultural resources below:

Use Allocation	**Desired Outcome**
Scientific use	Preserved until research potential is realized
Conservation for future use	Preserved until conditions for use are met
Traditional use	Long-term preservation
Public use	Long-term preservation, on-site interpretation
Experimental use	Protected until used
Discharged from management	No use after recordation; not preserved

CULT-A4. Land Use Plan Decision*:* Before implementation of surface-disturbing projects, including range developments and vegetation manipulations, evaluate cultural resource potential and avoid adverse impacts to National Register-eligible sites when feasible.

CULT-A5. Land Use Plan Decision*:* Protect archeological sites in the White Creek Archeological District by maintaining the closed route designation for White Creek Road.

CULT-EFG1. Land Use Plan Decision*:* Promote research opportunities with academic, professional, and avocational institutions for anthropological, archeological, ethnographic, or historic use studies to improve local and regional cultural resources management.

CULT-EFG2. Land Use Plan Decision*:* Maintain access and promote traditional uses of the CCMA by the Native American and California Indian community; work in coordination with tribal communities, groups, and individuals to address issues.

14. Paleontological Resources

A. Goals and Objectives

The goal for paleontological resources are to (1) preserve, protect and manage vertebrate, noteworthy invertebrate, and plant paleontological resources in accordance with existing laws and regulations for current and future generations; (2) facilitate the appropriate scientific, educational, and recreational uses of paleontological resources such as research and interpretation; (3) accommodate permit requests for scientific research by qualified individuals or institutions; (4) ensure proposed land uses do not destroy or damage paleontological resources.

To achieve these goals, the following resource condition objectives are established:

- Locate, evaluate, manage and protect, where appropriate, paleontological resources on the public lands;
- Facilitate the appropriate scientific, educational, and recreational uses of paleontological resources, such as research and interpretation;
- Using predictive modeling, identify significant localities that may be in conflict with other resource uses;
- Ensure that proposed land uses, initiated or authorized by BLM, do not inadvertently damage or destroy important paleontological resources on public lands;
- Foster public awareness and appreciation of paleontological resources through educational outreach programs.

B. Management Actions

PALE-A6. Land Use Plan Decision*:* If natural erosion threatens the integrity of significant fossil resources, stabilize and rehabilitate these resources if feasible.

PALE-EFG1. Land Use Plan Decision*:* Establish a 300-foot buffer for project actions around all paleontological sites and localities.

15. Social and Economic Conditions

A. Goals and Objectives

The goal for social and economic conditions is to manage public lands to provide social and economic benefits to local residents, businesses, visitors, and future generations.

To achieve this goal, the following resource condition objectives are established:

- Work cooperatively with private and community groups and local tribal governments to provide for customary uses consistent with other resource objectives and to sustain or improve local economies.
- Maintain and promote the cultural, economic, ecological, and social health of communities associated with BLM public lands.

B. Management Actions

SOCEC-DG1. Land Use Plan Decision*:* Work collaboratively with local populations to emphasize a high level of natural resource protection, which contributes to tourism and attracts sustainable commodities industries.

SOCEC-DG2. Land Use Plan Decision*:* Enhance public land resources to provide for sustainable tourism, production, and industry.

SOCEC-DG3. Land Use Plan Decision*:* Emphasize sustainable economic operations while protecting the ecological, social, and cultural integrity of BLM public lands.

16. Visual Resources Management

A. Goals and Objectives

The goal for visual resource management is to manage public land actions and activities in a manner consistent with visual resource management (VRM) class objectives.

To achieve this goal, the following objective is established:

- Protect, maintain, improve, or restore visual resource values by managing all public lands in accordance with the VRM system.

B. Management Actions

VIS-A1. Land Use Plan Decision*:* VRM Class IV standards apply to the entire CCMA unless otherwise stated.

VIS-A2. Land Use Plan Decision*:* Actions in the San Benito Mountain WSA and RNA must meet VRM Class I standards.

VIS-A3. Land Use Plan Decision*:* Actions in the Condon Zone must meet VRM Class III standards.

VIS-EFG1. Land Use Plan Decision: Actions in the Serpentine ACEC must meet VRM Class II standards.

17. Fire Management

A. Goals and Objectives

The goals for fire management are to (1) establish a fire management program that is cost-efficient and commensurate with threats to life, property, public safety, and resources, (2) use fire to restore and/or sustain ecosystem health, (3) cooperate with communities at risk within the wildland-urban interface to develop plans for risk reduction, (4) cooperate with regional partners in fire and resource management across agency boundaries, and (5) reduce man-made fires, with a special emphasis on reductions in developed areas such as communities, campgrounds, and transportation corridors.
To achieve the goals for fire management, the following resource condition objectives are established:

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. Areas of Critical Environmental Concern, Research Natural Areas (RNAs), Wilderness Study Areas (WSAs), and certain other public lands in the CCMA Special Recreation Management Area (SRMA) will require modified suppression techniques to protect the known values. Modified suppression techniques are identified in the Hollister Fire Management Plan (BLM 2011).
- 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 cultural and paleontological resource sites from damage by fire and/or fire suppression actions.

Fuels Management

- Reduce the risk of fire in wildland-urban interface communities.
- Reduce the risk of catastrophic wildfire through fuels management.
- Promote greater diversity within plant communities of the HFO with the use of fire.
- Use fire as natural land management tool for the control and eradication of noxious weeds.
- Use fire as a management tool to improve the ecological condition of the area within HFO jurisdiction.
- Use prescribed burning to reduce the fuel hazard in the chaparral community and for wildlife habitat improvement and increased local water yield and watershed enhancement.

Fire Rehabilitation, Stabilization, and Restoration

- Rehabilitate burned areas to mitigate adverse effects of fire on soils, water, and 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 wildland-urban interface.
- Educate the public on fire safety and prevention measures.

- Work with the California Department of Forestry and Fire Protection (CALFIRE) to suppress all wildfires involving less than 10 acres 90 percent of the time.

B. Management Actions

FIRE-BG1. Land Use Plan Decision*:* Develop and maintain the Hollister Fire Management Plan.

FIRE-BG2. Land Use Plan Decision*:* Identify appropriate management response goals, objectives, and constraints by specific Fire Management Units (FMUs) in the Hollister Fire Management Plan (Ref. Map 6, Appendix I).

FIRE-BG3. Implementation Decision: Employ fire prevention strategies that reduce man-made fires, with special emphasis on developed areas such as communities, campgrounds, and transportation corridors.

FIRE-BG4. Implementation Decision: Develop fuels projects to mimic fire's natural role to enhance resource values.

FIRE-BG5. Land Use Plan Decision*:* Coordinate with the California Department of Forestry and Fire Protection (CALFIRE) or cooperator fire protection entities to develop appropriate management response actions, as documented in the annual operating plan, for wildland fires on or threatening BLM lands. Primary consideration and operational emphasis are placed on firefighter and public safety, minimizing the loss of life and damage to private property, minimizing environmental damage due to suppression efforts, and considering resource values and high value habitat at risk from unwanted wildfire.

FIRE-BG6. Land Use Plan Decision*:* Identify high priority wildfire risk areas (e.g., wildland-urban interface, critical habitats and cultural areas). The Hollister Fire Management Plan (FMP) displays the list of values at risk and the communities at risk within each FMU. (These lists may change as communities are removed or added each year).

FIRE-BG7. Implementation Decision: Work collaboratively with Federal, State, Fire Safe Councils, and local partners to develop cross boundary fire management strategies and prioritize cross agency fire management actions.

FIRE-BG8. Implementation Decision: Work collaboratively with communities at risk within the wildland-urban interface to develop plans for risk reduction.

FIRE-BG9. Implementation Decision: Work collaboratively with managing partners to design and implement prescribed fire and fuels management projects across agency boundaries where this interaction would improve the overall success of the project.

FIRE-BG10. Land Use Plan Decision*:* Limit the use of fire retardant drops to prevent damage to rock art sites and vernal pools and associated aquatic species. Keep retardant away from rock outcrops and waterways.

FIRE-BG11. Implementation Decision: Establish a fire effects monitoring system that inventories pre-burn species composition and resulting post-fire response, over time.

FIRE-BG12. Implementation Decision: Monitor fire/fuels treatment effects and adjust the Hollister FMP as needed.

FIRE-BG13. Implementation Decision: Implement a chaparral management program within the CCMA to use fire to improve wildlife habitat.

FIRE-BG14. Land Use Plan Decision*:* Protect the primitive nature of public lands within the San Benito Mountain WSA from any action affecting the overall "naturalness" of the area.

FIRE-BG15. Land Use Plan Decision*:* Prohibit the use of heavy mechanical equipment within the San Benito Mountain WSA. This restriction may be lifted by the Field Manager to protect human life, private property, structures, visitor safety, or sensitive or valuable resources.

FIRE-BG16. Implementation Decision: Develop local or regional "Normal Fire Year Rehabilitation Plans."

FIRE-BG17. Implementation Decision: Promote the use of native species in reseedings.

FIRE-BG18. Implementation Decision: Monitor rehabilitation efforts to facilitate future planning and implementation.

C. Target Acres for Fire Management

Management actions for prescribed fire and mechanical treatment activities on BLM-administered lands in the CCMA under the RMP are summarized below. Management actions pertain to prescribed fire and treatment activities on BLM-administered lands in the CCMA.

Average Annual/Decadal Prescribed Fire Target Acres

Fire Management Unit (FMU)	Proposed Action
San Benito Natural Area	0/0
Clear Creek Serpentine ACEC	100/1,000
Hernandez Valley	125/1,250
San Joaquin Valley South	100/1,000
San Joaquin South Continued	1000/10,000

Decadal Mechanical Treatment Target Acres

Fire Management Unit (FMU)	Proposed Action
San Benito Natural Area	0
Clear Creek Serpentine ACEC	1000
Hernandez Valley	125
San Joaquin Valley South	1,000
San Joaquin South Continued	10,000

18. Lands and Realty

A. Goals and Objectives

The goal for lands and realty management is to provide lands, interests in land, and authorizations for public and private uses while maintaining and improving resource values and public land administration.

To achieve this goal, the following resource condition objectives are established:

- Retain, consolidate, and/or acquire land or interest in land with high public resource values for effective administration and improvement of resource management;
- Make public land available for disposal that meets the disposal criteria contained in Section 203(a) of the FLPMA;
- Meet public, private, and Federal agency needs for realty-related land use authorizations and land withdrawals, including those authorizations necessary for wind, solar, biomass, and other forms of renewable energy development;
- Acquire legal public or administrative access to public land; and
- Eliminate unauthorized use of public lands.

1. Land Tenure Adjustments

A. Management Actions

LTEN-A7. Land Use Plan Decision*:* Acquire or exchange lands in accordance with the FLPMA and other applicable Federal laws and regulations to ensure more efficient management of the public lands, to reduce conflicts with other public and private landowners, and to provide more consistency and logic in land use patterns within the Hollister Field Office.

LTEN-EFG1. Land Use Plan Decision*:* Public lands in the Condon and San Benito River Zones identified on the Proposed Action Map in Appendix I would be available for disposal.

LTEN-EFG2. Land Use Plan Decision*:* Acquisition of private in-holdings with high value for multiple resources including important biological resources and recreational opportunities would be the highest priority.

LTEN-EFG3. Land Use Plan Decision*:* Consider minor boundary adjustments to facilitate management efficiency through sale, exchange, or patent (i.e., less than 50 acres).

Lands Available for Disposal (acres)

Management Zone	Proposed Action
Serpentine ACEC	0
Tucker	0
Condon	280
San Benito River	88
Total	**368**

2. Land Use Authorizations

A. Management Actions

LUSE-A2. Land Use Plan Decision*:* Designate existing utility routes as utility corridors.

LUSE-BF1. Land Use Plan Decision*:* Lands identified for retention are considered unsuitable for entry under any of the agricultural land laws because of significant multiple-use values.

LUSE-BF2. Land Use Plan Decision*:* Place special emphasis on resolution of unauthorized uses of public lands. Increase coordination with local, State and other Federal law enforcement agencies.

LUSE-BF3. **Land Use Plan Decision*:*** Maintain consistency with County General Plans and zoning within Department regulations and Bureau policy.

LUSE-BF4. Land Use Plan Decision*:* Permit commercial filming on a case-by-case basis.

LUSE-BF5. Land Use Plan Decision*:* Issue apiary permits on a case-by-case basis.

LUSE-BF6. Land Use Plan Decision*:* Honor valid existing rights and easements that have been acquired through land acquisitions. Enter rights-of-way into LR2000 to ensure proper recording.

LUSE-BF7. Land Use Plan Decision*:* Construction of new communication sites in the ACEC will only be authorized at sites with existing facilities.

LUSE-BF8. Land Use Plan Decision*:* Authorize rights-of-way to provide reasonable access for private landowners in CCMA.

LUSE-G1. Land Use Plan Decision*:* Stipulate health and safety mitigation measures for existing communication sites and rights-of-way authorizations in the Serpentine ACEC.

C. Adaptive Management

BLM acknowledges that controversy exists regarding the health risks of naturally occurring asbestos. Therefore, BLM will consider any significant new information related to plan decisions adopted in the CCMA RMP to determine whether adaptive management may be warranted throughout the life of this Plan. For example, the RMP's travel and transportation management section identifies "adaptive management criteria" that would allow the BLM to make changes to designated route systems and addresses how routes may be modified within the transportation network in the future.

If one of these criteria are met, then BLM would reassess CCMA RMP land use plan decisions associated with human health risks from exposure to airborne asbestos fibers, and potentially apply adaptive management should significant new information become available that may warrant modifications in the limits on days of recreation access and the limits on trails available for motorized use in the ACEC.

D. Administrative Review and Appeals

The land use decisions outlined in the Approved RMP are not appealable to the Interior Board of Land Appeals. All protests on the CCMA Proposed RMP and Final Environmental Impact Statement (EIS) have been resolved, and the decision of the BLM Director is the final decision of the Department of the Interior (43 CFR 1610.5-2).

The decisions outlined in Section II(B) that implement the Clear Creek Management Area Approved RMP, are appealable to the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior.

E. Appeals

Pursuant to Departmental policy, "A person may appeal a decision of the Bureau of Land Management under the procedures set forth in 43 CFR Part 4, subpart E. See, e.g., 43 CFR §§ 4.411." The relevant regulation states, at 43 CFR 4.411:

(a) A person who wishes to appeal to the Board must file in the office of the officer who made the decision (not the Board) a notice that he wishes to appeal. A person served with the decision being appealed must transmit the notice of appeal in time for it to be filed in the office where it is required to be filed within 30 days after the date of service. If a decision is published in the Federal Register, a person not served with the decision must transmit a notice of appeal in time for it to be filed within 30 days after the date of publication.

(b) The notice of appeal must give the serial number or other identification of the case and may include a statement of reasons for the appeal, a statement of standing if required by Sec. 4.412(b), and any arguments the appellant wishes to make.

(c) No extension of time will be granted for filing the notice of appeal. If a notice of appeal is filed after the grace period provided in Sec. 4.401(a), the notice of appeal will not be considered and the case will be closed by the officer from whose decision the appeal is taken. If the notice of appeal is filed during the grace period provided in Sec. 4.401(a) and the delay in filing is not waived, as provided in that section, the notice of appeal will not be considered and the appeal will be dismissed by the Board.

F. Contact Information

Pursuant to 43 CFR §§ 4.411, if an appeal is taken, a notice of appeal must be filed in the Hollister Field Office, 20 Hamilton Court, California 95023, within 30 days from the date the Notice of Availability for the Record of Decision is published in the Federal Register. Upon receipt of a notice of appeal, the Hollister Field Office will forward the decision and the accompanying administrative record to IBLA promptly. See Patrick G. Blumm, 116 IBLA 321, 334 (1990).

For more information on CCMA, please call the Hollister Field Office at (831) 630-5000.

G. Acronyms

AEHHRA asbestos exposure and human health risk assessment
ACEC area of critical environmental concern
AML abandoned mine lands
AMR appropriate management response
ARPA *Archaeological Resources Protection Act*
ATCM airborne toxic control measures
ATV all-terrain vehicle
AUM animal unit month
BLM Bureau of Land Management
BMP best management practice
CABE (*Camissonia benitensis)* San Benito evening primrose
CALFIRE California Department of Forestry and Fire Protection
CCMA Clear Creek Management Area
CDFW California Department of Fish and Wildlife (formerly Department of Fish and Game)
CEQ Council on Environmental Quality
CFR Code of Federal Regulations
CWA *Clean Water Act*
DTSC California Department of Toxic Substances Control
EIS environmental impact statement

EPA Environmental Protection Agency
ESA *Endangered Species Act*
FLPMA *Federal Land Policy and Management Act*
FMP fire management plan
FMU fire management unit
GIS geographic information system
HAZMAT hazardous materials
HFO Hollister Field Office
IMP *Interim Management Policy for Lands under Wilderness Review*
mph miles per hour
NEPA *National Environmental Policy Act*
NHPA *National Historic Preservation Act*
NOA naturally occurring asbestos
NOI notice of intent
NOx nitrogen oxides
NRHP National Register of Historic Places
NWSRS National Wild and Scenic Rivers System
OHV off-highway vehicle
ORV outstandingly remarkable value
OSHA Occupational Safety and Health Administration
PA Programmatic Agreement
PFC proper functioning condition
PM2.5 particulate matter less than 2.5 micrometers in diameter
PM10 particulate matter less than 10 micrometers in diameter
RAWS remote automated weather station
RFD reasonably foreseeable development
RMO route management objective
RMP resource management plan
RNA research natural area
ROD record of decision
SHPO State Historic Preservation Officer
SRMA special recreation management area
SSS special status species
T&E threatened and endangered
TMDL total maximum daily load
US United States
USDI U.S. Department of the Interior
USFWS U.S. Fish and Wildlife Service
UTV universal terrain vehicle
VRM visual resources management
WSA wilderness study area

H. Glossary

Acceptable Risk Range – The Environmental Protection Agency Superfund program defines the acceptable risk range for exposure to a carcinogen, like asbestos, as 10^{-4} (1 in 10,000) to 10^{-6} (1 in 1,000,000) excess lifetime cancer risk. Exposures which are calculated to cause more than 1 in 10,000 excess cancers are considered to be of concern and may require action to reduce the exposure and resulting risk.

Adaptive Management – An iterative process, designed to experimentally compare selected management actions by evaluating alternative hypotheses about the ecosystem being managed. Adaptive management consists of three parts: management actions, monitoring, and adaptation. Management actions are treated as experiments subject to modification. Monitoring is conducted to detect the effects of the management actions. Finally, management actions are refined in response to the enhanced understanding of how the ecosystem responds.

Aggregate – Any combination of sand, gravel, and crushed stone in its natural or processed state.

Allowable uses – for recreation in the CCMA RMP are defined as follows:

- Non-motorized – Non-motorized recreation includes 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 – Mechanized recreation includes cycling, mountain biking, hang gliding, and rock climbing using assistive devices.
- Motorized – Motorized recreation includes the use of off-highway vehicles (OHVs), and scenic vehicle touring.
- Shooting – Shooting, for purposes of this document, includes all non-hunting discharge of firearms, but excludes use of paintball devices.

Alluvium – Unconsolidated rock or sediment deposited by flowing water including gravel, sand, silt, clay, and various mixtures thereof.

Alternative – One of at least two proposed means of meeting planning objectives.

Animal Unit – One mature (1,000-pound) cow or the equivalent, based on an average forage consumption of 26 pounds of dry matter per day. For authorization calculation purposes, an animal unit is one cow and her calf, one horse, or five sheep or goats. Depending on the composition and weight of animals in the herd, actual forage use may vary.

Animal Unit Month (AUM) – The amount of forage needed to sustain one cow, five sheep, or five goats for 1 month.

Annual Plant – A plant that completes its life cycle within a single growing season. Also see PERENNIAL PLANT.

Appropriate Management Response (AMR) – The response to a wildland fire based on an evaluation of risks to firefighters and public safety; the circumstances under which the fire occurs, including weather and fuel conditions; natural and cultural resource management objectives; protection priorities; and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall local geographic area or national wildland fire situation.

Archaeological Resources Protection Act of 1979 (ARPA) – A federal law that prohibits the removal, disturbance, sale, receipt and interstate transportation of archaeological resources obtained illegally (without permits), from federal or Indian lands and authorizes agency permit procedures for investigations of archaeological resources on lands under the agency's control.

Archaeological Site – Any place where human-made or modified artifacts, features, or ecofacts are found.

Area of Critical Environmental Concern (ACEC) – An area of BLM-administered land where special management attention is needed to do the following: to protect and prevent irreparable damage to

important historic, cultural, or scenic values and to fish and wildlife or other natural systems or processes; or to protect life and provide safety from natural hazards.

Artifact – A discrete or portable object manufactured or modified by humans. Some common artifact categories include lithic, ceramic, organic, and metal objects.

Asbestos – Asbestos is the name given to a group of six different fibrous minerals that occur naturally in the environment These fibrous silicate minerals are mined for their useful properties such a thermal insulation, chemical and thermal stability, and high tensile strength. They do not dissolve in water or evaporate, and they are resistant to heat, fire, and chemical or biological degradation. The two general types of asbestos are amphibole and chrysotile (fibrous serpentine).

Authorized Officer – Any BLM employee who has been delegated the authority to perform defined duties.

Best Management Practice (BMP) – Practices based on current scientific information and technology that, when applied during the implementation of management actions, ensure that adverse impacts are minimized. BMPs are generally tailored to site-specific conditions, to achieve management goals for a given site.

Biological Diversity (Biodiversity) – The variety and number of plants, animals, and other organisms in a particular area or region. Biological diversity encompasses ecosystem or community diversity, species diversity, and genetic diversity. In this document, biodiversity refers to species richness defined as a number of species in a given habitat or location across habitats.

Biological Opinion – A document that includes the following: the opinion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service about the likelihood of a federal action to jeopardize the existence of a species listed as threatened or endangered, or to destroy or adversely modify designated critical habitat; a summary of the information on which the opinion is based; a detailed discussion of the effects of the federal action on listed species or designated critical habitat; Reasonable and Prudent measures needed to minimize any harmful effects; and monitoring and reporting requirement to ensure that the federal action is implemented as prescribed.

Biomass – The total amount of living plants and animals above and/or below ground in an area at a given time; plant material that can be burned as fuel.

Biota – The animal and plant life of a given region.

BLM Sensitive Species – Species designated by a BLM State Director, and usually in cooperation with the state agency responsible for managing wildlife species and state natural heritage programs, as sensitive. They are species that: (1) could become endangered in or extirpated from a state or within a significant portion of or distribution; (2) are under status review by the U.S. Fish and Wildlife Service or National Marine Fisheries Service; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution; (4) are undergoing significant current or predicted downward trends in population or density such that federally listed, proposed, candidate, or State-listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are State listed but which may be better conserved through application of BLM sensitive species status.

Browse – The part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption; the act of consuming browse.

California Department of Fish and Wildlife (CDFW) – The California state agency whose mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFW maintains native fish, wildlife, plant species, and natural communities for their intrinsic and ecological value and their benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities. CDFW is also responsible for the diversified use of fish and wildlife, including recreational, commercial, scientific, and educational uses.

Catastrophic Wildfire – Fire that burns more intensely than within the natural or historical range of variability, thereby causing unacceptable erosion, fundamental changes to the ecosystem, or loss of communities of rare or threatened species or habitat.
Chaparral – A vegetation community in regions with hot dry summers and cool moist winters and dominated by often dense and often thorny shrubs and small trees usually with small evergreen leaves. Chaparral on ultramaphic (serpentine) soils is usually less dense.
Code of Federal Regulations (CFR) – The official compilation of regulations directing Federal Government agencies.
Collaboration – A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands. Collaboration may or may not involve an agency as a cooperating agency.
Communication Site – A hilltop or favorable signal receiving and transmitting location where a collection of facilities are located. A facility consisting of a small building and tower, used for transmitting or receiving radio, television, telephone, or other electronic signals.
Component (Cultural Resources) – An association of all the artifacts from one occupation level and one time period at a site.
Composition (Species Composition) – The proportions of plant species in relation to the total in a given area. Composition may be expressed as cover, density, and weight.
Containment – The status of an action to suppress wildfire signifying that a control line has been completed around the fire and any associated spot fires and that spread of fire can reasonably be expected to stop.
Connectivity – The degree to which habitats for a species are continuous or interrupted across a spatial extent, where habitats defined as continuous are within a prescribed distance over which a species can successfully conduct key activities, and habitats defined as interrupted are outside the prescribed distance.
Cooperating Agency – An agency that helps the lead federal agency develop the environmental analysis for a proposed major action. U.S. Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA. Any North American Indian tribe or federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. Cooperating agency status is generally formalized through a memorandum of understanding between BLM and the cooperating agency.
Critical Habitat – (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accord with the Endangered Species Act, on which are found physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon determination by the Secretary of the Interior that such areas are essential for the conservation of the species.
Cultural Resource – Any definite location of past human activity that is identifiable through field survey, historical documentation, or oral evidence. This includes archaeological or architectural sites, structures, or places; and places of traditional cultural or religious importance to specified groups, whether or not represented by physical remains.
Cumulative Impacts – The effect on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.
Easement – The right to use land in a certain way granted by a landowner to a second party.
Ecofact – Bones, vegetal matter, pollen, shells, modified soils, or other archaeological finds that though not human manufactured, give important clues as to human behavior or the environmental context of such behavior.

Ecological Processes – Processes that include the water cycle (the capture, storage, and redistribution of precipitation) energy flow (conversion of sunlight to plant and animal matter) and the nutrient cycle (the cycle of nutrients, such as nitrogen and phosphorus through the physical and biotic components of the environment). Ecological processes functioning within a normal range of variation at an ecological site will support specific plant and animal communities.

Ecosystem – A dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit.

Effects – Effects and impacts in the regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. Effects include:

- Direct effects, which are caused by the action and occur at the same time and place and
- Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and are related effects on air and water and other natural systems, including ecosystems.

Endangered Species – Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range. Also see THREATENED SPECIES.

Entry – An application to acquire title to public lands.

Environmental Impact Statement (EIS) – A detailed written statement required by the National Environmental Policy Act for major Federal actions significantly affecting the quality of the human environment. An EIS addresses: (i) The environmental impact of the Proposed Action, (ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) Alternatives to the Proposed Action, (iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) Any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented.

Ephemeral Stream – A stream that flows only in direct response to precipitation, and whose channel is at all times above the water table.

Erosion – The wearing away of the land surface or soil by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). "Accelerated erosion" generally refers to erosion in excess of what is presumed or estimated to be naturally occurring levels, and which is a direct result of human activities.

Ethnographic – Related to the branch of cultural anthropology that deals with the scientific investigation of living cultures. The main ethnographic data collection technique is participant observation–living with the people being investigated with the intention of full immersion in their culture. Such research is called ethnography.

Federal Land Policy And Management Act (FLPMA) – Public Law 94-579, the act that (1) established, for the BLM, standards for managing the public lands including land use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land use planning and management, (3) established criteria for reviewing proposed wilderness areas, and (4) provided guidelines for other aspects of public land management such as grazing.

Federal Register – The Federal Government's official daily publication for rules, proposed rules, and notices of federal agencies and organizations, as well as executive orders and other presidential documents.

Fireline (Control Line) – An inclusive term for all constructed or natural barriers, and treated fire edges used to control a fire. Also called a fire trail.

Fire Management Plan – A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. The fire management plan is supplemented by operational procedures such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.
Fire Management Unit – A fire planning unit in which preparedness strategies are designed to meet watershed or resource management objectives, designated by logical fire control or containment criteria such as watershed basins, sub-basins, ridgetops, topographic features, roads, or vegetation changes.
Fire Regime – A combination of components that characterize fire in a potential natural vegetation group, including frequency, intensity, seasonality, and extent.
Fire Retardant – Any substance except plain water that by chemical or physical action reduces flammability of fuels or slows their rate of combustion.
Forage – All browse and herbage that is available and acceptable to grazing animals or that may be harvested for feed**;** the act of consuming forage.
Forb – Any broad-leafed herbaceous plant that is not a grass, sedge, or rush.
Fuel Load (in fire ecology) – The oven-dry weight of fuel per unit area, usually expressed in tons/acre.
Geographic Information System (GIS) – A computer application used to store, view, and analyze geographical information, especially maps.
Grazing Permit or Lease – A contractual agreement between BLM and another party that permits grazing of a specific number and class of livestock for a specified period on a defined rangeland. The permit allows grazing use of public land, subject to permit stipulations and annual adjustment based on current rangeland condition.
Groundwater – Subsurface water that is in the zone of saturation. The top surface of the ground water is the water table. Groundwater is the source of water for wells, seepage, and springs.
Guzzler – A device for collecting and storing precipitation for use by wildlife or livestock. A guzzler consists of an impenetrable water collecting area, a storage facility, and a trough from which animals can drink.
Habitat – A specific set of physical conditions that surround a species, group of species, or a large community. Wildlife management considers the major constituents of habitat to be food, water, cover, and living space.
Herbaceous – Of, relating to, or having the characteristics of a vascular plant that does not develop woody tissue; nonwoody vegetation such as grasses and forbs.
Highway-licensed vehicle – As used in this document, a "highway-licensed vehicle" includes any motor vehicle subject to the provisions of subdivision (a) of Section 38010 of the California Vehicle Code. Synonym = street-legal vehicle.
Infiltration – The downward entry of water into the soil or other material.
Interim Management Policy for Lands under Wilderness Review (IMP) (BLM 1995) – BLM's strategy for managing wilderness study areas following their recommendation for designation but before Congress designates them as wilderness or releases them to multiple use management.
Intermittent Stream – A stream or reach of a stream that does not flow year round and that flows only when it receives baseflow solely during wet periods or it receives groundwater discharge or protracted contributions from melting now or other erratic surface and shallow subsurface sources. See EPHEMERAL STREAM.
Invasive Species – An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.
Land Use Allocations – The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions.
Land Use Plan – A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CRF

1600, regardless of the scale at which the decisions were developed. Also see RESOURCE MANAGEMENT PLAN.

Leasable Minerals – Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Lithic Scatter– Pertaining to or composed of stone flakes created by human flint knapping that are dispersed on the ground; a type of archaeological resource.

Litter – The uppermost layer of organic debris on the soil surface, essentially the freshly fallen or slightly decomposed vegetal material.

Locatable Minerals – Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of l872 (as amended). Locatable minerals include valuable deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Location – The act of taking or appropriating a parcel of mineral land, including the posting of notices, the recording thereof when required, and marking the boundaries so they can be readily traced.

Mineral Entry – The filing of a claim on public land to obtain the right to any minerals it may contain.

Mineral Estate – The ownership of the minerals at or beneath the land's surface.

Mineral Materials – Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the Mineral Materials Act of 1947, as amended.

Mining Claims – Portions of public lands claimed for possession of locatable mineral deposits by locating and recording under established rules and pursuant to the Mining Law of 1872.

Mining Law of 1872 (General Mining Law) – The federal act that, with its amendments, formed the framework for the mining of locatable minerals on the public lands. This law declared that "valuable" mineral deposits rather than simply "mineral deposits" were to be free and open to exploration and purchase, limited individual claims to 20 acres, required $100 worth of assessment work yearly, and allowed milling or processing claims of 5 acres or less to be entered on nonmineral lands.

Multiple Use – The management of the public lands and their resources so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output".

National Ambient Air Quality Standards– The allowable concentrations of air pollutants in the ambient (public outdoor) air specified in 40 CFR 50. National ambient air quality standards are based on the air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly) and secondary standards (allowing an adequate margin of safety to protect the public welfare). Welfare is defined as including effects on soils, water, crops, vegetation, human-made materials, animals, wildlife, weather, visibility, climate, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

National Environmental Policy Act of 1969 (NEPA) – The federal law, effective January 1, 1970, that established a national policy for the environment and requires federal agencies: (1) to become aware of the environmental ramifications of their Proposed Actions, (2) to fully disclose to the public proposed federal actions and provide a mechanism for public input to federal decision making, and (3) to prepare

environmental impact statements for every major action that would significantly affect the quality of the human environment.

National Historic Preservation Act (NHPA) of 1966, as amended – A federal statute that established a federal program to further the efforts of agencies and individuals in preserving the Nation's historic and cultural foundations. The National Historic Preservation Act: (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require federal agencies to consider the effects of federally assisted activities on properties included in or eligible for the National Register of Historic Places. Also see NATIONAL REGISTER OF HISTORIC PLACES and SECTIONS 106 and 110 OF THE NATIONAL HISTORIC PRESERVATION ACT.

National Register of Historic Places (NRHP) – The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archaeological, historic, and architectural properties (i.e., districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. National Register eligible property is referred to as an historical, cultural, archaeological, or listed property. Also see NATIONAL HISTORIC PRESERVATION ACT.

National Wild And Scenic Rivers System (NWSRS) – A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historical, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: (1) recreation—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails with watersheds or shorelines essentially primitive and waters unpolluted.

Native Species – A plant or animal species that naturally occurs in an area and was not introduced by humans.

Naturally Occurring Asbestos - Naturally occurring asbestos refers to asbestos minerals that are found in the rocks or soil in an area and released into the air by routine human activities or weathering processes. Asbestos minerals belong to either the serpentine mineral group or the amphibole mineral group. The most common type of asbestos found in California is chrysotile, a serpentine mineral.

Non-Impairment of Wilderness Values Criteria – A set of criteria regulating land use to protect the wilderness values and characteristics of an area until Congress determines whether to preserve it as a wilderness. The nonimpairment criteria are as follows.

- The use, facility, or activity must be temporary. (This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation.
- When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the area's suitability for preservation as wilderness.

The only permitted exceptions to the nonimpairment criteria are the following:

- wildfire or search and rescue emergencies,
- reclamation to minimize impacts of violations and emergencies,
- uses and facilities that are considered grandfathered or valid existing rights under the Interim Management Policy for Lands under Wilderness Review,
- uses and facilities that clearly protect or enhance the land's wilderness values or are the least needed for public health and safety, and
- reclamation of pre-Federal Land Policy and Management Act impacts.

Notice of Intent (NOI) - a notice that an environmental impact statement will be prepared and considered. The notice shall briefly: (a) Describe the Proposed Action and possible alternatives. (b) Describe the agency's proposed scoping process including whether, when, and where any scoping meeting will be held. (c) State the name and address of a person within the agency who can answer questions about the Proposed Action and the environmental impact statement.

Noxious Plant (Weed) – An unwanted plant specified by federal or state laws as being undesirable and requiring control. Noxious weed refers to any plant that, when established, is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds are usually non-natives and highly invasive.

Off-Highway Vehicle (OHV) – Many different types of OHV are operated on federal lands. In general, this includes any motorized track or wheeled vehicle designed for cross-country travel over natural terrain. For the purposes of this report, an OHV is any motorized vehicle capable of, or designed for, cross-country travel immediately on or over land, not including personal watercraft, snowmobiles, or aircraft. OHVs used on federal lands include off-highway motorcycles, all-terrain vehicles, utility terrain vehicles, dune buggies, swamp buggies, jeeps, and rock crawlers. These vehicles may be used for various purposes, ranging from trail and open-area riding to hunting and accessing mining claims, hobby gem and mineral collection, or in-holdings (private or state-owned lands inside the boundaries of federal lands). OHVs exclude (1) any non-amphibious registered motorboat; (2) any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; and (3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved.

Paleontological Resources – The remains of plants and animals preserved in soils and sedimentary rock. Paleontological resources are important for understanding past environments, environmental change, and the evolution of life.

Particulate Matter – Fine liquid (other than water) or solid particles suspended in the air, consisting of dust, smoke, fumes, and compounds containing sulfur, nitrogen, and metals.

Perennial Plant – A plant species with a life-cycle that characteristically lasts more than two growing seasons and persists for several years. Also see ANNUAL PLANT.

Planning Criteria – The constraints or ground rules that guide the developing of a resource management plan. The criteria determine how the planning team develops alternatives and ultimately selects a Preferred Alternative.

Population – A group of interbreeding individuals of the same species often occupying the same geographical area

Preferred Alternative – The alternative in this EIS that BLM has initially selected because it best fulfills BLM's mission and responsibilities and offers the most acceptable resolution of the planning issues and management concerns.

Prescribed Fire (Burning) – The planned application of fire to rangeland vegetation and fuels under specified conditions of fuels, weather, and other variables to allow the fire to remain in a predetermined area to achieve such site-specific objectives as controlling certain plant species; enhancing growth, reproduction, or vigor of plant species; managing fuel loads; and managing vegetation community types.

Primitive Recreation – Recreation that occurs in a natural-appearing environment and that allows visitors to achieve solitude and isolation from human civilization. Primitive recreation may include hunting, horseback riding, wildlife viewing, nature study, photography, hiking, and backpacking.

Public Lands – Any land administered by the Secretary of the Interior through the U.S. Bureau of Land Management or by the Secretary of Agriculture through the U.S. Forest Service.

Rangeland – A type of land on which the native vegetation, climax, or natural potential consists predominately of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrublands, moist deserts, tundra, alpine communities, coastal marshes, and wet meadows.

Rangeland Health – The degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of the rangeland (land) ecosystem, are balanced and sustained. Integrity is defined as maintenance of the structure and functional attributes characteristic of a locale, including normal variability.

Rangeland Health Assessment – An estimate or judgment of the status of ecosystem structures, functions, or processes, within a specified geographic area (preferably a watershed or a group of contiguous watersheds) at a specific time. Rangeland health is assessed by gathering, synthesizing, and interpreting information, from observations or data from inventories and monitoring. An assessment characterizes the status of resource conditions so that the status can be evaluated relative to land health standards. An assessment sets the stage for an evaluation. An assessment is not a decision.

Raptors – Birds of prey, such as eagles, owls, and hawks.

Record of Decision – A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement.

Resource Management Plan (RMP) – A land use plan as described by the Federal Land Policy and Management Act. The RMP generally establishes in a written document: (1) land areas for limited, restricted or exclusive use; designations, including ACEC designations; and transfer from BLM administration; (2) allowable resource uses (either singly or in combination) and related levels of production or use to be maintained; (3) resource condition goals and objectives to be attained; (4) program constraints and general management practices needed to achieve the above items; (5) need for an area to be covered by more detailed and specific plans; (6) support actions, including such measures as resource protection, access development, realty action, and cadastral survey., as needed to achieve the above; (7) general implementation sequences, where carrying out a planned action depends on prior accomplishment of another planned action; and (8) intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision. It is not a final implementation decision on actions that require further specific plans, process steps, or decisions under specific provisions of law and regulations.

Restoration – The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

Right-of-Way (ROW) – A permit or an easement that authorizes the use of public lands for specified purposes, such as pipelines, roads, telephone lines, electric lines, communication sites, reservoirs, and the lands covered by such an easement or permit.

Riparian – Area, zone, and habitat adjacent to streams, lakes, or other natural free-flowing waters, which have a predominant influence on associated vegetation or biotic community; pertaining to or situated on or along the bank of a stream or other water body.

Riparian Area/Riparian Zone – Terrestrial areas where vegetation and microclimate conditions are products of the combined presence and influence of perennial or intermittent water, high water tables, and hydric soils. These terms are normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs, and wet meadows.

Riparian Species – Plant species occurring within the riparian zone. Obligate species require the environmental conditions within the riparian zone; facultative species tolerate the environmental conditions and therefore may also occur away from the riparian zone.

Riparian Vegetation – Plant communities in the riparian zone consisting of riparian species.

Runoff – The portion of precipitation on an area that does not infiltrate (enter the soil) but is discharged by the area.

Salable Minerals – High volume, low-value mineral resources, including common varieties of rock, clay, decorative stone, sand, and gravel.

San Andreas Fault – The geologic transform fault that runs 800 miles through California.

Scoping – An early and open process for determining the scope of issues to be addressed in an environmental impact statement and the significant issues related to a Proposed Action.

Season of use (livestock grazing) – The primary season of the year (winter, spring, summer, or fall) that livestock grazing occurs within a given area or allotment.
Section 106 of the National Historic Preservation Act – The section of the National Historic Preservation Act that requires that federal agencies having direct or indirect jurisdiction over a proposed federal, federally assisted, or federally licensed undertaking, before approving the spending of funds or issuing a license, consider the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places, and give the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Also see NATIONAL HISTORIC PRESERVATION ACT and NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 110 OF THE NATIONAL HISTORIC PRESERVATION ACT.
Section 110 of the National Historic Preservation Act – The section of the National Historic Preservation Act that concerns the managing of federally owned historic properties. Among other provisions, Section 110 requires each federal agency to establish a program to locate, inventory, protect, restore and nominate to the Secretary of the Interior Standards all properties under its control that appear to qualify for the National Register of Historic Places. Also see NATIONAL HISTORIC PRESERVATION ACT, NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.
Sedimentation – The act or process of depositing sediment suspended in water; all the processes by which particles of rock material accumulate to form sedimentary layers of soil or, over geologic time, rock.
Sediment Load – The amount of sediment, measured in dry weight or by volume that water transports through a stream cross-section in a given time. Sediment load consists of sediment suspended in water and sediment that moves by sliding, rolling, or bounding on or near the streambed.
Seeding – The planting of seeds to revegetate land after a disturbance; an area that has been revegetated by planting seeds.
Seral Stages – The development stages of ecological succession.
Soil Compaction – Compression of the soil, resulting in reduced soil pore space (the spaces between soil particles), decreased infiltration of water and air into and within the soil, decreased soil water storage, and increased surface runoff and erosion.
Soil Fertility – The status of a soil with respect to its ability to supply elements essential for plant growth without a toxic concentration of any one element.
Species – From Section 3(15) of the Federal Endangered Species Act: "The term 'species' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." A population of individuals that are more or less alike and that can breed and produce fertile offspring under natural conditions.
Species Composition – The proportions of plant species or other organisms in relation to the total on a given area. It may be expressed in terms of cover, density, or weight.
Stabilization (Cultural Resource) – Protective techniques usually applied to structures and ruins to keep them in their existing condition, prevent further deterioration, and provide structural safety without significant rebuilding. Capping mud-mortared masonry walls with concrete mortar is an example of a stabilization technique.
Standards for Rangeland Health – A description of conditions needed to sustain public land health; relates to all uses of the public land. These standards address soils, streams, water quality, riparian-wetlands, and biodiversity.
State Historic Preservation Officer (SHPO) – The state official authorized to act as a liaison to the Secretary of the Interior for implementing the National Historic Preservation Act of l966.
Substrate – Mineral and organic matter forming the bottom of a waterway or water body; the base or substance upon which an organism is growing.
Succession – The progressive replacement of plant communities on an ecological site. Early seral (successional) stages found in CCMA are normally dominated by perennial grasses and annual as well as

perennial forbs with few shrubs. During mid-seral stages, the woody species on the ecological site such as shrubs and trees make an obvious appearance, and annual forbs are dominated by perennial forbs. During late-seral stages, shrubs normally dominate plant cover on the site, but the perennial grasses still provide the most annual production on into the potential natural community.

Threatened Species – Any species defined through the Endangered Species Act (ESA) as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Also see ENDANGERED SPECIES.

Trailhead – The terminus of a (motorized or non-motorized) trail accessible by motor vehicle from public roadways.

Trespass – Any occupancy, use, or development of the public lands or their resources of the United States without authority.

Uplands – Lands at higher elevations than alluvial plains or low stream terraces; all lands outside the riparian wetland and aquatic zones.

Utility Corridor – A parcel of land, without fixed limits or boundaries, which is being used as the location for one or more utility rights-of-way.

Valid Existing Rights (mining) – Locatable mineral development rights that existed when the Federal Land Policy and Management Act (FLPMA) was enacted on October 21, 1976. Some areas are segregated from entry and location under the Mining Law to protect certain values or allow certain uses. Mining claims that existed as of the effective date of the segregation may still be valid if they can meet the test of discovery of a valuable mineral required under the Mining Law. Determining the validity of mining claims located in segregated lands requires BLM to conduct a validity examination and is called a "valid existing rights" determination.

Vascular Plants – Plants such as the ferns and seed-bearing plants with leaves, stems and roots, in which phloem tissue transports sugars from leaves to the stem and roots and xylem tissues transports water and dissolved minerals from roots to leaves.

Vernal Pools- wetlands supplied by rainwater or its drainage consisting of seasonally to semi-permanently filled depressions and typically on sites with poor drainage.

Viable Population – A wildlife or plant population that contains an adequate number of reproductive individuals to appropriately ensure the long-term existence of the species.

Viewshed – The entire area visible from a viewpoint.

Vigor – The capacity for natural growth and survival of plants and animals.

Visual Resource Management (VRM) – The inventory and planning actions to identify visual values and establish objectives for managing those values and the management actions to achieve visual management objectives.

Visual Resource Management (VRM) Classes – Categories assigned to public by scenic quality, sensitivity level, and distance zones. Each class has an objective that prescribes the amount of modification allowed in the landscape.

Water Right – A right to use, in accord with its priority, a certain portion of the waters of the state for irrigation, power, domestic use or another similar use.

Watershed – An area of land from which water drains toward a single stream. The watershed is a hydrologic unit often used as a physical-biological unit and a socioeconomic-political unit for planning and managing natural resources.

Wetlands – Areas where saturation with water is the dominant factor determining the nature of soils development and the types of plant and animal communities living in the soil and on its surface.

Wilderness – An area of undeveloped federal land retaining its primeval character and influence, without permanent improvement or human habitation, that is protected and managed so as to preserve its natural conditions and that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as

to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Study Area (WSA) – A roadless area that has been inventoried and found to be wilderness in character, has few human developments, and provides outstanding opportunities for solitude and primitive recreation, as described in Section 603 of the Federal Land Policy and Management Act of 1976 and in Section 2(c) of the Wilderness Act of l964.

Wilderness Values – Values established in the Wilderness Act, such as solitude and naturalness.

Wildland Fire – Any non-structure fire that occurs in the wild. Three distinct types of wildland fire have been defined and include wildfire and prescribed fire.

Withdrawal – An action that restricts the use of public lands by removing them from the operation of some or all of the public land or mining laws.

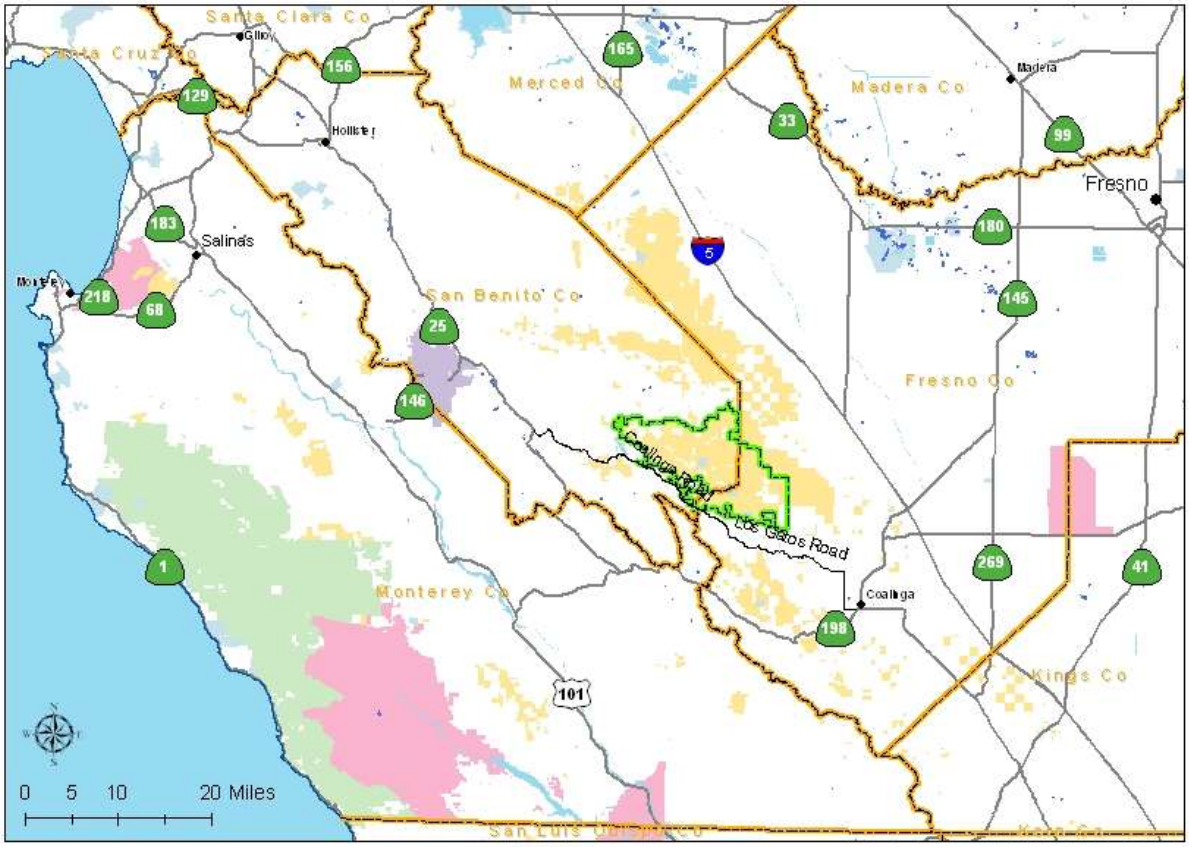
Woodland – A forest community occupied mainly by noncommercial species.

Appendix I - Maps

Map 1 Planning Area Locator Map
Map 2 Air Management Districts
Map 3 Vegetation Communities
Map 4 Special Status Species
Map 5 Soils Map
Map 6 Fire Management Units
Map 7 Special Designations
Area of Critical Environmental Concern
Research Natural Area
Wilderness Study Area
Wild & Scenic Rivers
Map 8 Visual Resource Management Classifications
Map 9 Livestock Grazing Allotments
Map 10 Oil and Gas Potential
Map 11 Wind Energy Potential

Proposed Action Map (Note: The Proposed Action Map represents the "Approved RMP" for the purpose of illustrating and documenting BLM's transportation and travel management decisions, as well as other land use and implementation decisions (e.g. land tenure adjustments, recreation, etc.).

THIS PAGE INTENTIONALLY LEFT BLANK



Map 1 Legend

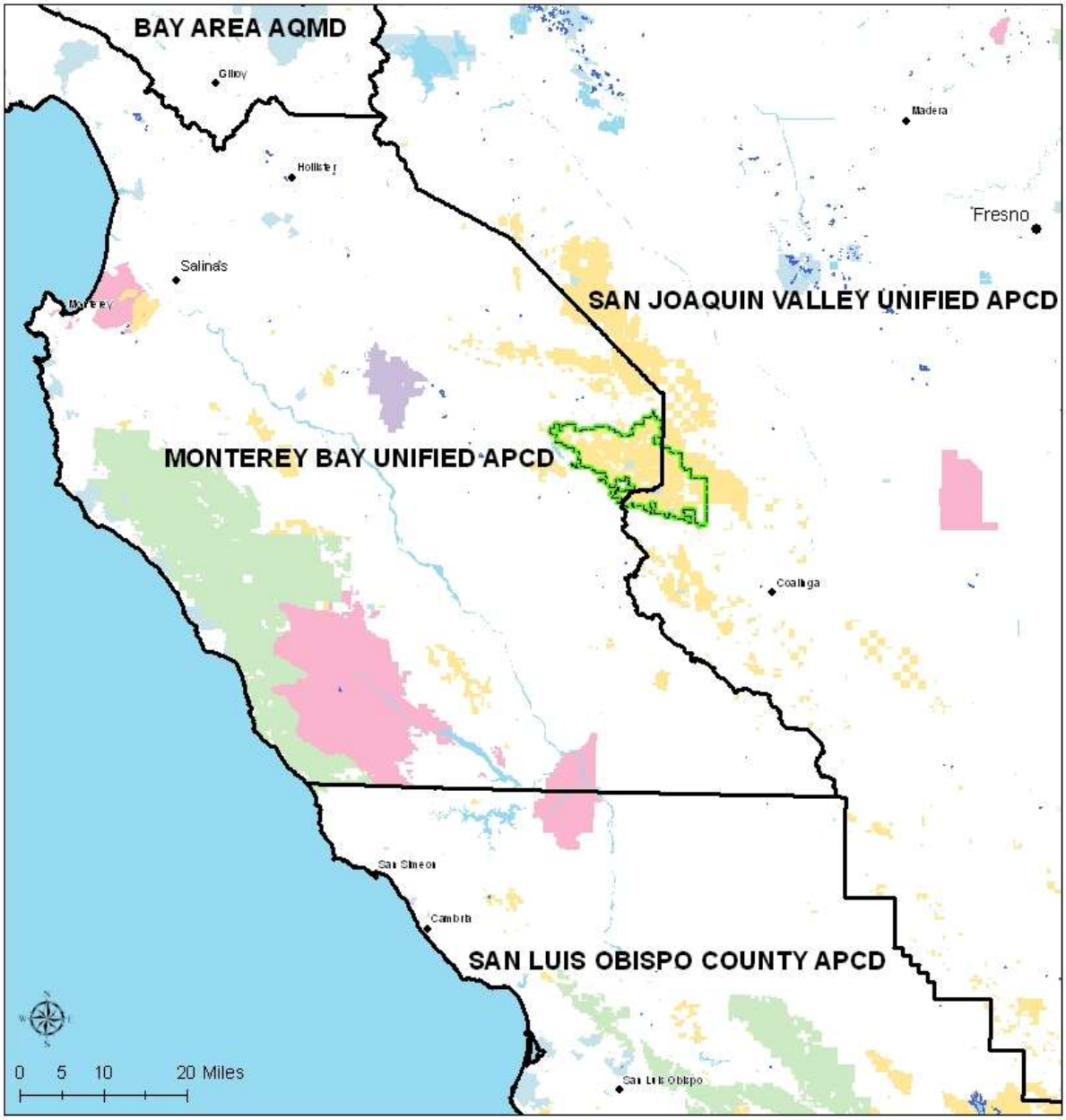
CCMA boundary

Land Status

AGENCY

- Bureau of Land Management
- US Forest Service
- National Park Service
- Military
- State

US Department of the Interior
BUREAU OF LAND MANAGEMENT
Hollister Field Office
Hollister, CA 95023
(831)630-5000
www.ca.blm.gov/hollister
Date Prepared: 12/07/2011
M:\gis\master\basic\planning\CCMA\RMP\FEIS

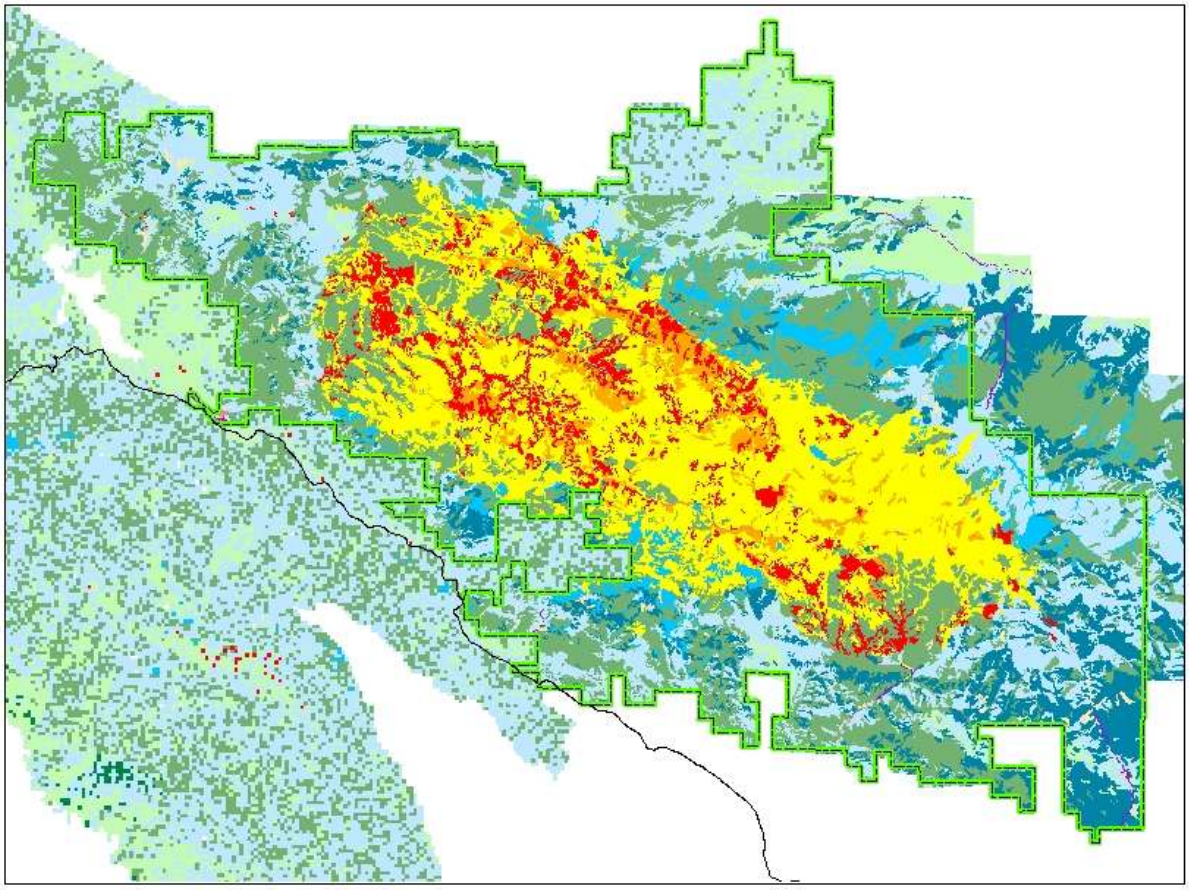


Map 2 Legend

CCMA boundary

Air District Boundary

Air Management Districts



Vegetation Communities

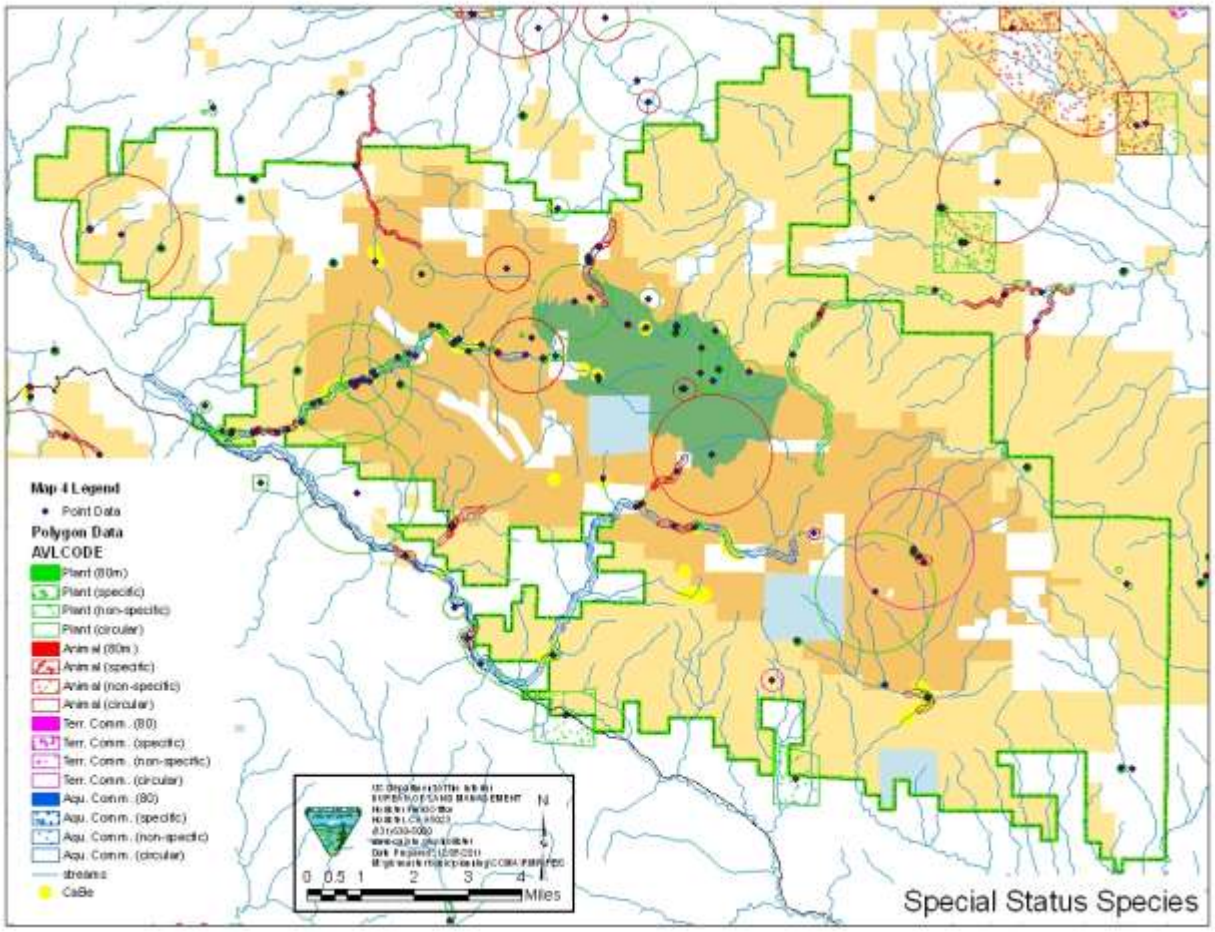
Map 3 Legend

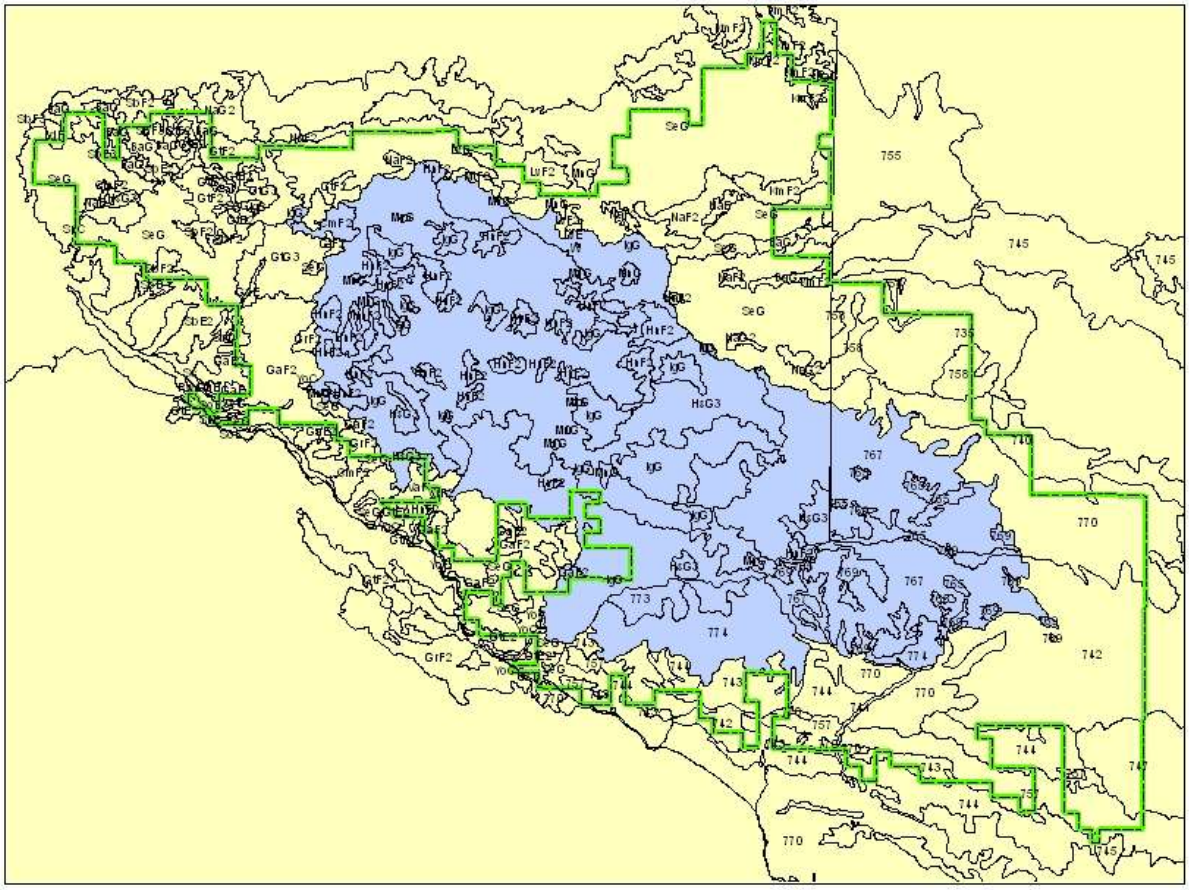
- CCMA boundary
- Serpentine willow
- Coulter pine
- Leather oak
- Serpentine barren
- Foothill pine
- Chamise-wedgeleaf ceanothus
- Mixed willow
- California annual grassland
- Mixed saltbush
- Blue oak
- Interior live oak
- California buckwheat

US Department of the Interior
BUREAU OF LAND MANAGEMENT
Hollister Field Office
Hollister, CA 95023
(831)630-5000
www.ca.blm.gov/hollister
Date Prepared: 12/08/2011
M:\gis\master\basic\planning\CCMA\RMP\FEIS

N

0 0.5 1 2 3 4
Miles


Map 4 Legend
Point Data
Polygon Data
AVLCODE
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terr. Comm. (80)
Terr. Comm. (specific)
Terr. Comm. (non-specific)
Terr. Comm. (circular)
Aqu. Comm. (80)
Aqu. Comm. (specific)
Aqu. Comm. (non-specific)
Aqu. Comm. (circular)
streams
CaBe
N
0 0.5 1 2 3 4
Miles
Special Status Species



Map 5 Legend

Soil category

non-serpentine

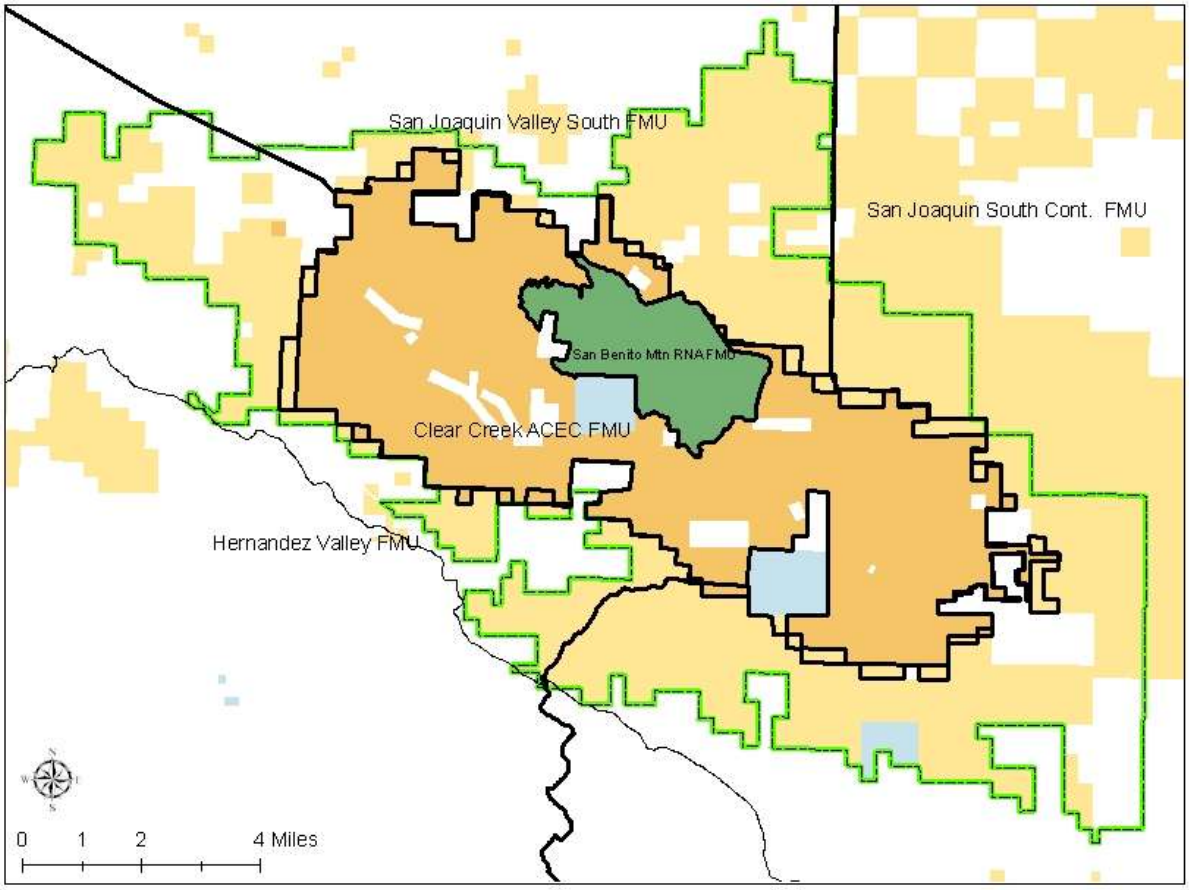
serpentine

Soils

US Department of the Interior
BUREAU OF LAND MANAGEMENT
Hollister Field Office
Hollister, CA 95023
(831)630-5000
www.ca.blm.gov/hollister
Date Prepared: 12/08/2011
M:\gis\master\basic\planning\CCMA\RMP\FEIS

N

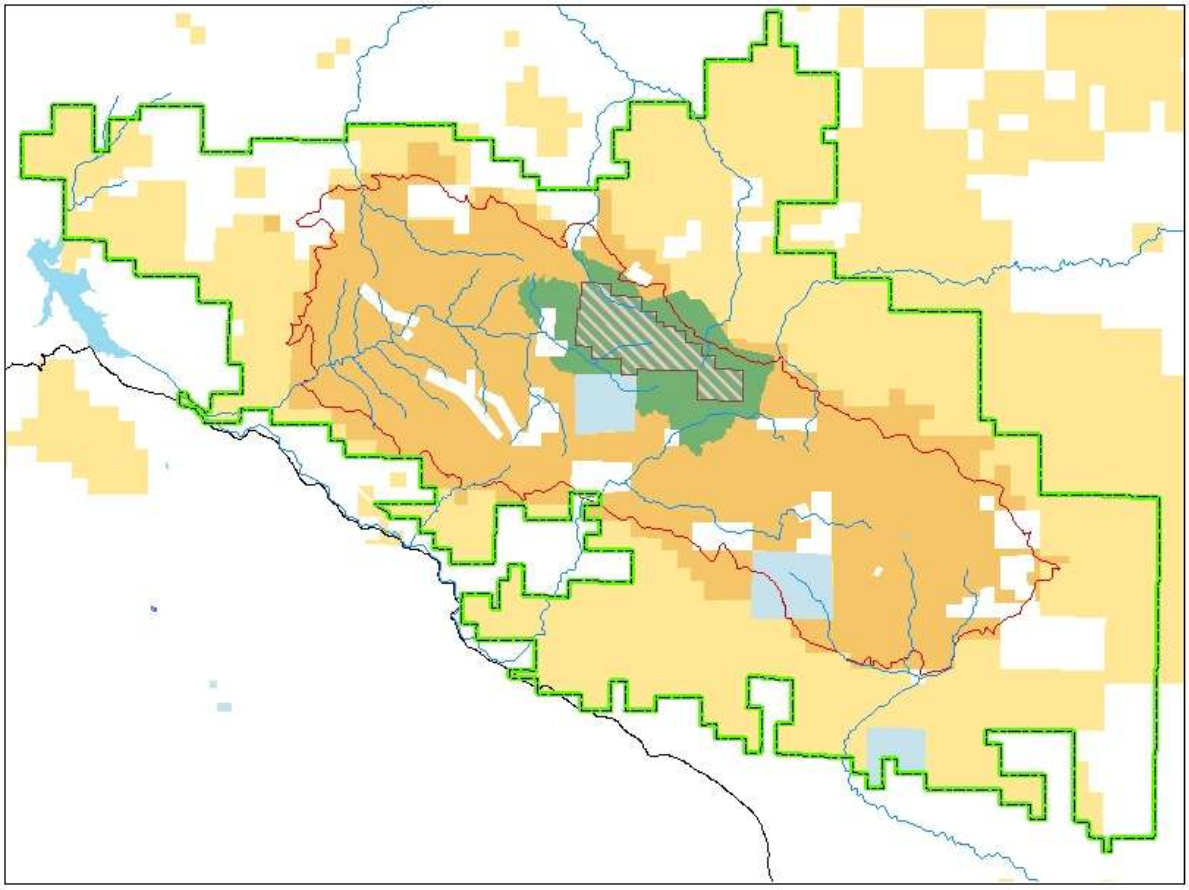
0 0.5 1 2 3 4 Miles



Fire Management Units

Map 6 Legend

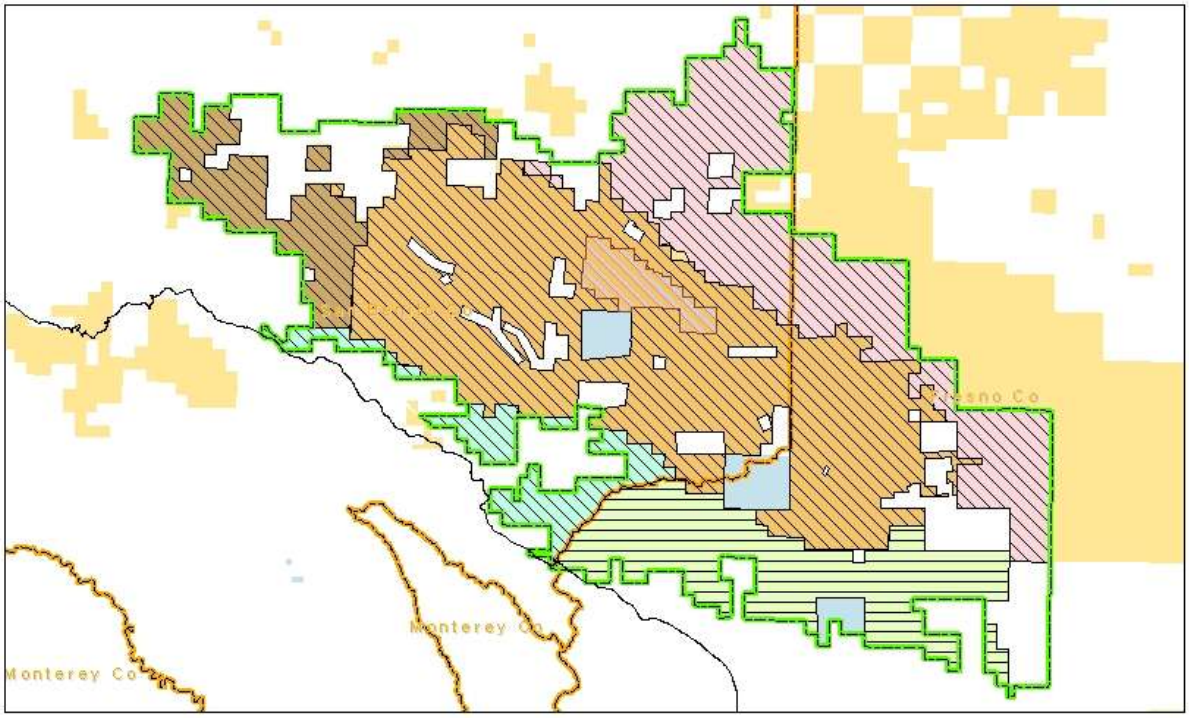
- Fire Management Unit boundaries
- CCMA boundary
- Fire Management Unit boundaries
- San Benito Mtn Research Natural Area
- Area of Environmental Concern (asbestos)



Special Designations

Map 7 Legend

- CCMA boundary
- Wild & Scenic River Inventory (APP VI)
- Hazardous Asbestos Area
- Wilderness Study Area
- San Benito Mtn Research Natural Area
- Area of Critical Environmental Concern (Asbestos)



VRM Classifications

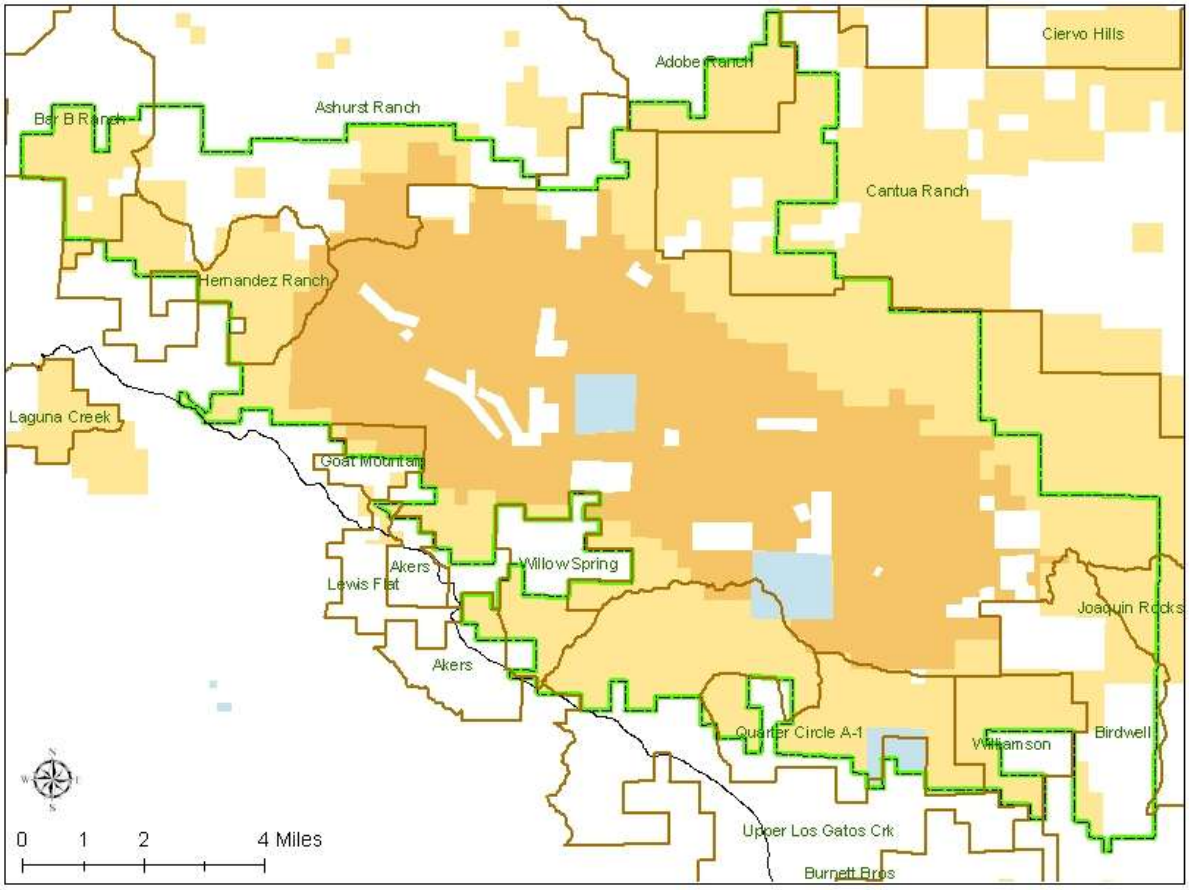
Map 8 Legend

- VRM class 1
- VRM class 3
- VRM class 4

US Department of the Interior
BUREAU OF LAND MANAGEMENT
Hollister Field Office
Hollister, CA 95023
(831)630-5000
www.ca.blm.gov/hollister
Date Prepared: 12/08/2011
M:\gis\master\basic\planning\CCMA\RMP\FEIS

N

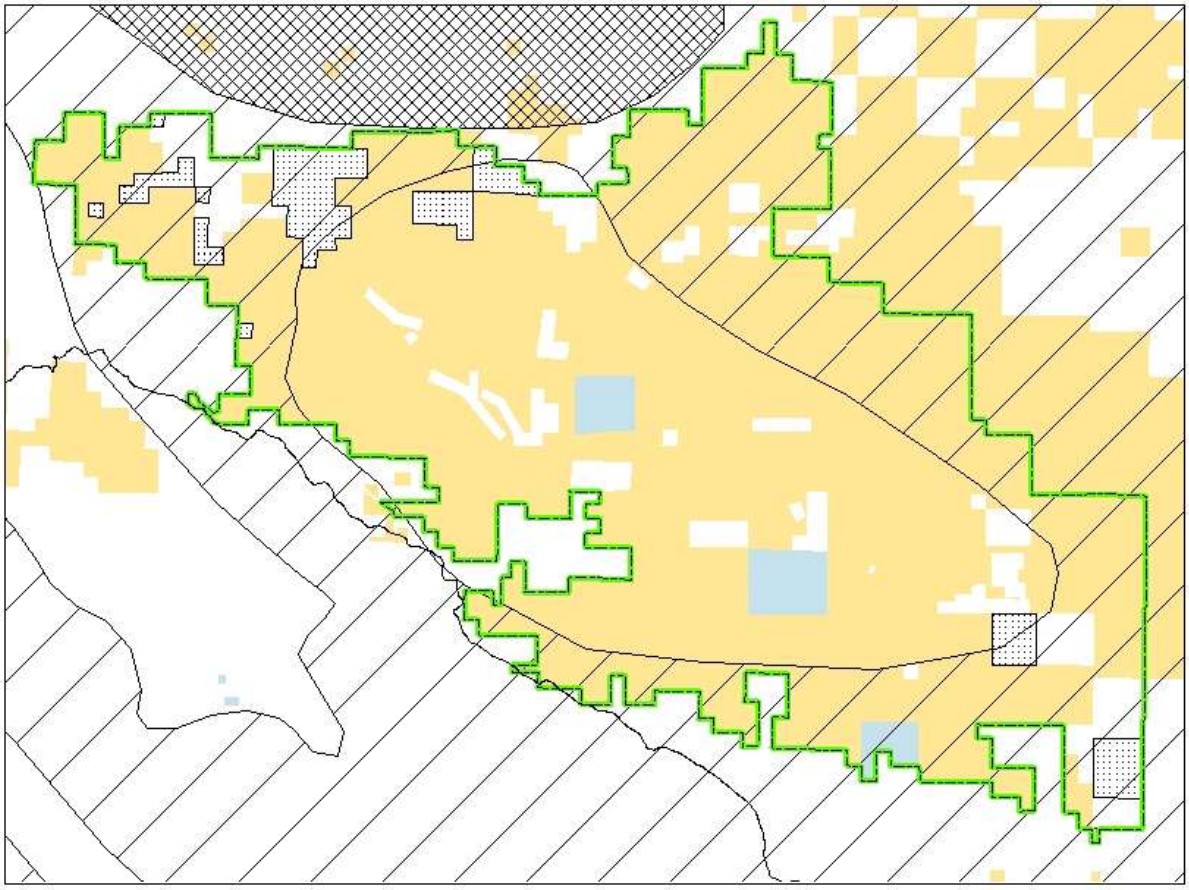
0 0.5 1 2 3 4
Miles



Livestock Grazing Allotments

Map 9 Legend

- Allotments
- CCMA boundary
- Area of Environmental Concern (asbestos)



Map 10 Legend

CCMA boundary

Oil & Gas Potential

- High
- Moderate
- None

Land Status

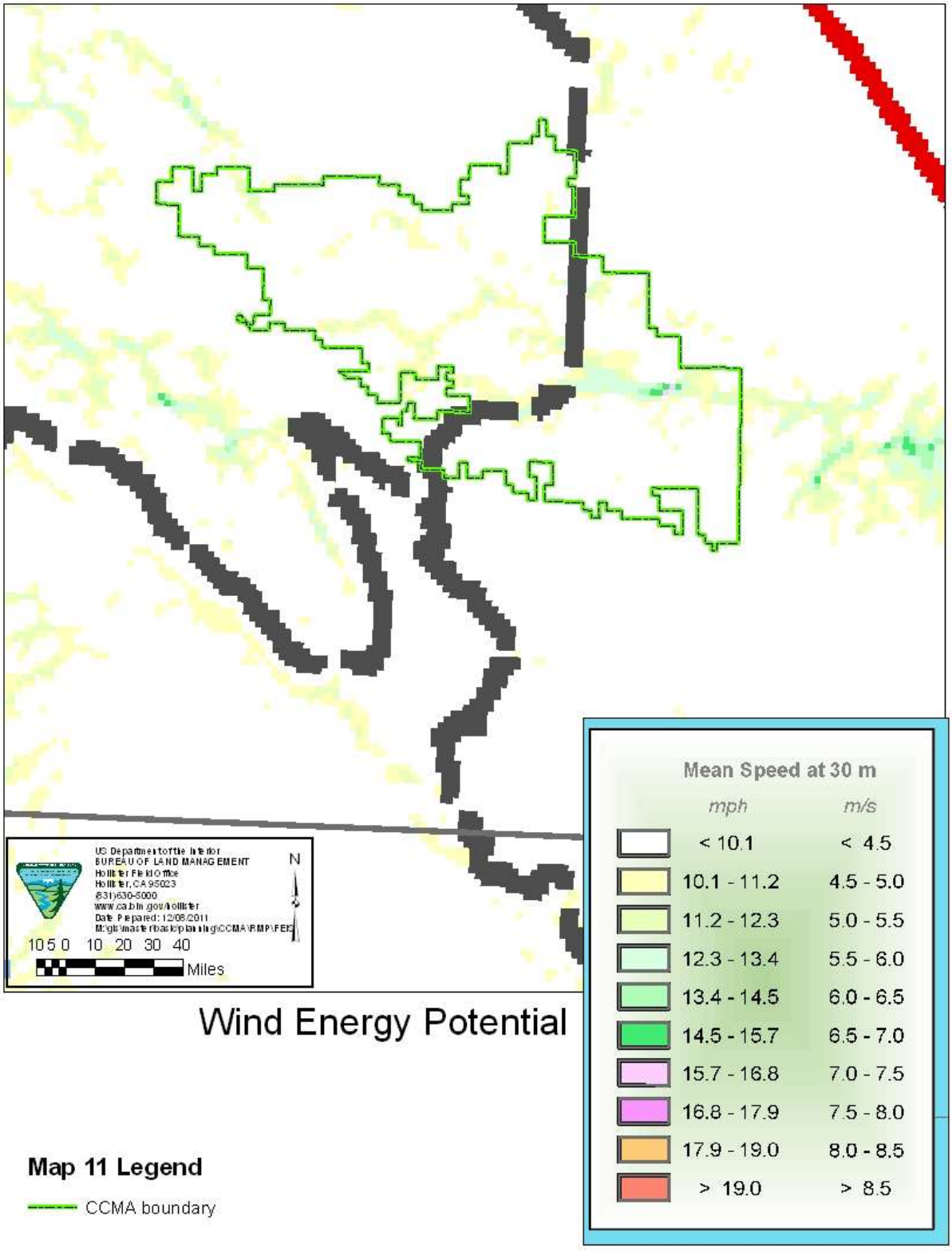
- Bureau of Land Management
- State
- split estate

Oil & Gas Potential

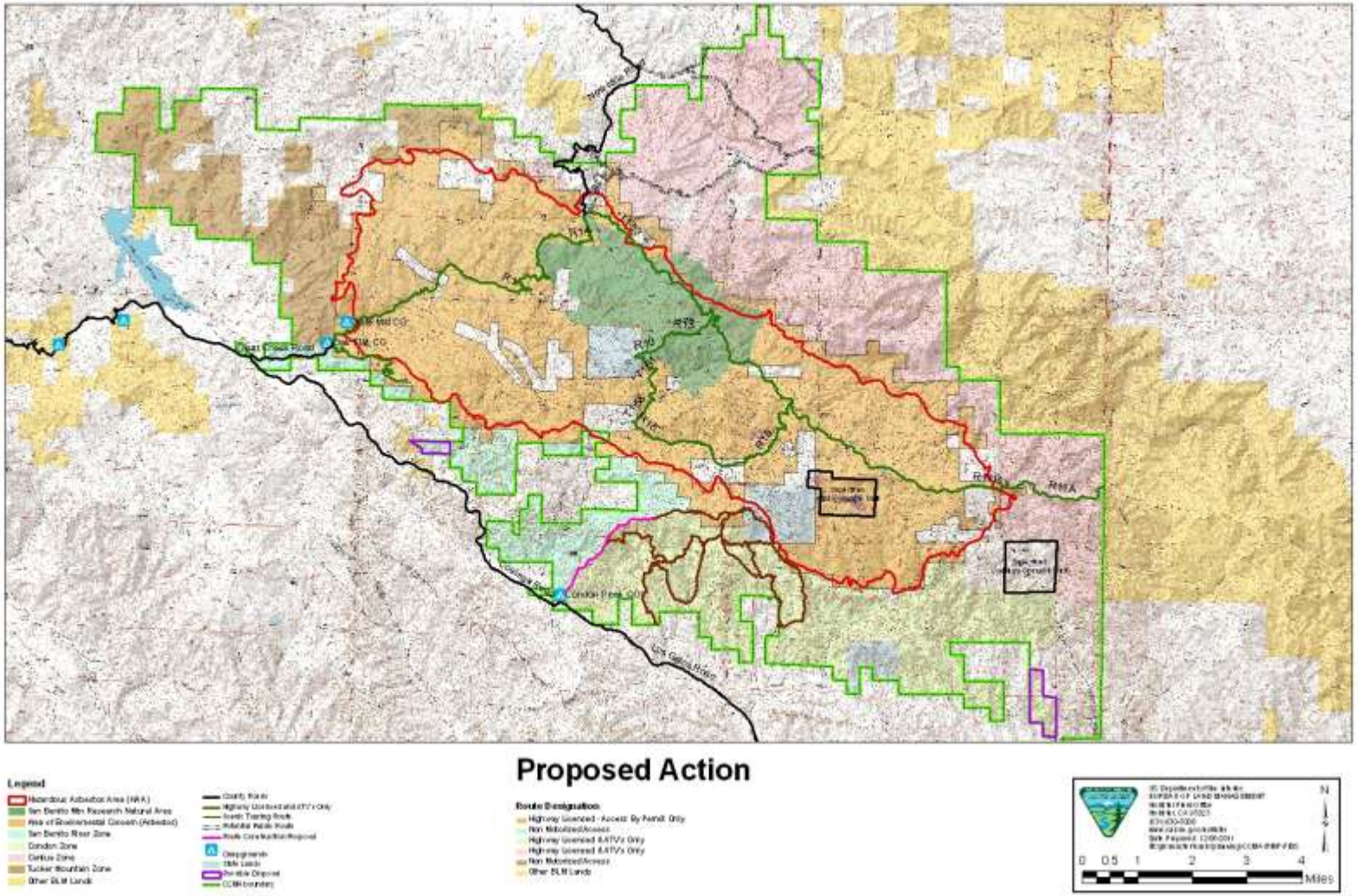
US Department of the Interior
BUREAU OF LAND MANAGEMENT
Hollister Field Office
Hollister, CA 95023
(831)630-5000
www.ca.blm.gov/hollister
Date Prepared: 12/06/2011
M:\gis\master\basic\planning\CCMA\RMP\FEIS

N

1 0.5 0 1 2 3 4
Miles



Wind Energy Potential



Note: The Proposed Action Map represents the "Approved RMP" for the purpose of illustrating and documenting BLM's transportation and travel management decisions, as well as other land use and implementation decisions (e.g. land tenure adjustments, recreation, etc.).

Appendix II – Route Designation

Vehicle use in the Planning Area is managed under the direction and authority in 43 CFR Part 8340 "Off-Road Vehicles," and Subpart 8342, "Designation of Roads and Trails." The off-highway vehicle (OHV) regulations apply to use of routes by the general public. Certain other routes may be open to private landholders, grazing operators, or other permittees to meet specific access needs and/or legal rights.

The BLM's 2006 Record of Decision for CCMA RMP Amendment and Route Designation addressed a variety of concerns related to vehicle use, roadways, and resource protection, and provided guidelines for future road improvements, maintenance activities, and management decisions. The baseline for analysis of transportation in this RMP/EIS is the designated route network that was approved in the 2006 Record of Decision for the CCMA RMP Amendment and Route Designation.

All of the designated routes under the Approved RMP were selected from routes previously designated as open in the 2006 CCMA RMP amendment. The Hollister Field Office developed the vehicle use area and route designation criteria described in this appendix to minimize conflicts with other resource values and public land uses. These designation criteria address a variety of management issues, concerns, and resource condition objectives; including the protection of resources of the public lands, the promotion of safety of the users of the public lands, and strive to minimize conflicts among the various users of the public lands.

Designation decisions are be based on a variety of data, including previous studies, field inventory data, biological, environmental, cultural, natural and recreation resources, land use, and land ownership. This process is standardized, repeatable, and can be logically followed; it assesses each route and area, and documents that assessment; and establishes a clear link between the designation decision and the rational for that decision.

In compliance with 43 CFR 8342.1, this standardized and stepwise process is designed specifically to address identified minimization criteria; whereby routes were evaluated relative to a list of criteria such as, resource sensitivity, soil loss, manageability, intended route use, and recreation opportunity. The criteria were combined into four tiers (described below), roughly corresponding to the criteria's likelihood of requiring route closure.

As a result, the routes designated open under the Approved RMP have been screened through the minimization criteria using the route designation worksheet illustrated on the following page.

A route designation table depicting the data elements for each route under the Approved RMP is included in this appendix. A map showing the designated route network under the Approved RMP is included in Appendix I.

A. Route Designation Worksheet

HOLLISTER FIELD OFFICE
CLEAR CREEK MANAGEMENT AREA
ROUTE DESIGNATION WORKSHEET

Route Number:
Route Characteristics:
Length:
Continuity:
Description:
Trail Maintenance Objective:
Topographic Map(s):

EVALUATION CRITERIA

Level	Criteria Name	Criteria Value	Determination Date	Mitigation
Tier 1	Private/state lands/mines	--	--	--
Tier 1	Sensitive species and Cultural	--	--	--
Tier 1	RNA/WSA	--	--	--
Tier 1	Barrens Interface	--	--	--
Tier 1	Riparian Areas	--	--	--
Tier 2	Erosion, Soil Loss Standard	--	--	--
Tier 3	OHV use/use spectrum	--	--	--
Tier 4	Transportation/manageability	--	--	--
Tier 4	Admin Use/ROW's	--	--	--
Tier 4	Route Proliferation/redundancy	--	--	--
Tier 4	Route Continuity	--	--	--

ROUTE DESIGNATION: (If Limited, Describe Limitation)
ROUTE DESIGNATION DATE:

- Other Proposed Actions:
- Route Specific Rationale:
- Land Use Plan Conformance:
- Decision Criteria: Includes all criteria identified in 43 CFR 8342.1 parts (a) through (d) and the Proposed Action.

B. Route Designation Criteria

The following criteria represent the data on which decisions about the authorized recreation use of routes is based. The data element dictionary (ref. Appendix II, Section C) describes the allowed responses for each criterion. The information on each route will be entered into an electronic database for analysis and query.

The criteria have been combined into four tiers, roughly corresponding to the criteria's likelihood of requiring route closure. Where possible, mitigation measures are discussed that can be used to reduce the expected motorized OHV impacts under each criterion. Mitigation, as used in the process, refers to management actions that BLM can undertake to alleviate the effects of OHV use with respect to the designation criteria.

Tier One

These factors can individually result in a closure decisions for a given route. Nevertheless, some of the detrimental characteristics identified by these criteria can be successfully mitigated, given sufficient funding, staffing, and recreation interest.

Private Land, State Lands and Mines

Private and state lands occur throughout the CCMA. To date, managed routes have been maintained to reduce erosion by the Bureau without regard to ownership unless the Bureau has specifically been asked to assist in preventing OHV and other uses. Where routes desirable for recreation traverse private land, the Bureau will seek clarification from landowners about whether or not they wish to allow for OHV use. Should a landowner request it, the Bureau will close routes that traverse non-Bureau lands by closing the route back to the nearest intersections. The Bureau will seek reciprocal rights-of-way with private landowners as appropriate to provide access on primary route connectors. Reroutes to avoid non-Bureau lands will be evaluated under a separate Environmental Analysis, given sufficient recreation interest, adequate staff and sufficient funds. Mines will be avoided by closing routes leading to or through mined areas to avoid subjecting recreation users to increased levels of hazardous materials.

Mitigation. The Bureau will seek reciprocal rights-of-way with private landowners as appropriate to provide access on primary route connectors. Possible mitigation for mined lands will be to sufficiently prevent off route travel. Complete fencing of a route, to prevent public access to hazardous mine areas can be considered mitigation. Route closure due to private/state lands can possibly be avoided by building a new portion of route.

Special Status Species and Cultural Resources

Federal laws and BLM policy require protection of sensitive resources, such as threatened and endangered species and their habitat and cultural resources. Areas that OHV recreation may adversely impact are best protected from such use by avoidance. These types of resources are best protected by not having routes bisect occupied or moderate- to high-potential habitat. Sensitive species and their habitat are also best protected by distance and adequate natural barriers. Cultural resources are similarly sensitive to OHV use impacts and can be managed in a manner analogous to sensitive plants and animals.

Mitigation. While avoidance is the preferred method to manage OHV use impacts, several strategies have also been documented to be successful in protecting sensitive resources. A combination of well-designed erosion control structures and corridor fencing has greatly reduced OHV use impacts to San Benito evening-primrose along Clear Creek Road. It is not currently practical to eliminate the county road from the trail system. It is a well-established route and OHV use impacts can generally be ameliorated by corridor fencing. Elsewhere, routes should be selected that do not bisect sensitive species habitat or cultural resources.

RNA/WSA

The management of the 4,147-acre San Benito Mountain Research Natural Area (RNA), including the Wilderness Study Area (WSA) CA-040-309 (1500ac), requires special management attention. Pursuant to 43 CFR 8342.1(d) routes shall be located in Research Natural Areas only if the authorized officer determines that off-road vehicle use in such locations would not adversely affect the values for which the area was established.

Mitigation. No additional routes will be designated in the 1500-acre WSA. Designated routes in the RNA may need to be fenced or otherwise limited to reduce potential impacts of OHV trespass off the designated open route.

Riparian Areas

Riparian areas provide habitat for several sensitive species and generally enhance water quality in the watershed. Therefore, riparian areas are to be avoided and impacts from OHV use minimized to the extent practicable. Historically, a number of trails used streams as the primary route of travel and resulted in impacts to sensitive resources. Routes crossing streams can also impair resources, so the number of such crossings should be minimized. Sediment modeling conducted by PTI Environmental Services identified a number of sub-watersheds within the Clear Creek watershed that are projected to contribute particularly high levels of sediment into Clear Creek. It is especially important that these sub-watersheds be evaluated for opportunities to reduce sediment delivery into an active drainage.

Mitigation. Impacts to riparian zones can be minimized by reducing the number of stream crossings, changing their location and/or orientation of the crossing to the stream, or by changing the actual crossing by appropriate hardening or utilizing bridges. In using these mitigation measures, it is important to design stream crossings that maintain an adequate flow rate so as to discourage yellow-legged frogs from attaching egg masses at these high use areas.

Tier Two

Criteria within this tier can also result in closure of a route. However, given sufficient recreation interest and available funds, actions can be taken to ameliorate most potential negative effects.

Erosion and Soil Loss Standards

Routes can cause erosion within the route tread, and through concentrated runoff, to off-tread locations. The data for this criterion is gathered following guidance found in the California State Parks 2008 Soil Conservation Standard and Guidelines. Besides requirements for signing, route design, and soil sustainability, the standards also require corrective actions within specified timeframes.

Mitigation. Many of the implementation strategies are designed to reduce route use impacts, direct and indirect. Most maintenance and corrective actions are relatively inexpensive and can be accomplished in

a timely manner with existing staff. Some corrective actions will need to be carefully justified by comparing costs with benefits. Other problem areas can be avoided by constructing reroutes.

Tier Three

The criteria within this tier describe the level of recreation interest of a given route, and whether it contributes to the recreation opportunity and diversity of recreation experience within the entire CCMA.

OHV Use/Recreation Spectrum

Route selection will consider linking visitor desires with recreation opportunities. Nearly all routes have some recreation value. Nevertheless, it is important that the open route network contributes to achieving the CCMA resource condition objectives. Routes should be selected that provide a wide spectrum of recreation use throughout the CCMA. Consideration will be given to the level of recreation interest, providing a diversity of trail types and experiences, and allowing for a variety of recreation activities.

Tier Four

This tier describes criteria focused on basic issues of route management, including maintenance, conflicting uses, official and administrative use, existing rights-of-way, and contribution to the overall route network. Consideration may be given, weighing of the costs of managing routes versus the recreation benefits of those routes.

Route Management Objective (RMO)

While the trail maintenance objective will not trigger a decision on whether to open or close a route, the objective does impact the cost (personnel and equipment) of keeping a route open. Similarly, the manageability of a route does not necessarily affect the resource impacts of its use, assuming the route is adequately managed. However, routes that are difficult to manage/maintain will be costly and given current budget constraints may need to be closed for this reason alone. Changing a route's management objective may sufficiently reduce the cost of its maintenance to allow for OHV use.

Mitigation. The primary way to mitigate the effect of this criteria on route closure are to reduce costs of maintenance, through either improved efficiency or use of volunteers, or by reducing the level of required maintenance by changing the route designation.

Administrative Use/Rights of Way

This criterion considers a limited set of routes for official government use and other authorized uses to provide vehicular access to private landowners, permitees, and other valid existing rights-holders. These routes differ from closed routes in that they will be regularly maintained and will not be considered for reclamation. Use of administrative routes may require a FLPMA right-of-way for private landowners, scientific research permits for accredited individuals and organizations, or special recreation permits from the Hollister Field Office that are separate from the general access permit for vehicle use on designated open routes in the ACEC.

Mitigation. Permits for use of administrative routes will allow BLM to authorize motorized access to key areas of interest for non-motorized recreation.

Proliferation and Redundancy

As it applies to this criterion, route proliferation pertains to whether the individual route may contribute to unauthorized use and the creation of new routes, or whether unauthorized use itself created the route. Determining whether or not a route is redundant requires considering several factors, including, RMO/trail type, proximity to sensitive resources, resource and user conflicts, proliferation, and contribution to route network.

Mitigation. Route proliferation can be reduced in some situations by barrier construction. It may also be possible to reroute portions of routes to incorporate existing natural or human-made barriers.

Route Continuity

A variety of recreation uses need to be accommodated on the designated route network, possibly creating safety concerns or potential user conflicts. Certain dead end routes and spur routes may be desirable with appropriate limitations on the use or types of vehicles.

Mitigation. BLM may install signs to let users know the route has limited OHV use, or is a dead end.

C. Data Element Dictionary

Tier 1

1. Private/state lands/mines

Code	Definition
11000	All BLM.
11010	Some private, use o.k.
11020	Some state, use o.k.
11030	Some mine, use o.k.
11040	Some private and state, use o.k.
11050	Some private and mine, use o.k.
11060	Some state and mine, use o.k.
11070	Some private, state and mine, use o.k.
11119	Some private, use NOT o.k.
11129	Some state, use NOT o.k.
11139	Some mine, use NOT o.k.
11149	Some private and state, use NOT o.k.
11159	Some private and mine, use NOT o.k.
11169	Some state and mine, use NOT o.k.
11179	Some private, state and mine, use NOT o.k.
11111	Some private, use UNKNOWN.
11121	Some state, use UNKNOWN.
11131	Some mine, use UNKNOWN.
11141	Some private and state, use UNKNOWN.
11151	Some private and mine, use UNKNOWN.
11161	Some state and mine, use UNKNOWN.
11171	Some private, state and mine, use UNKNOWN.
11212	Some private, POTENTIAL MITIGATION
11222	Some state, POTENTIAL MITIGATION.
11232	Some mine, POTENTIAL MITIGATION.
11242	Some private and state, POTENTIAL MITIGATION.
11252	Some private and mine, POTENTIAL MITIGATION.
11262	Some state and mine, POTENTIAL MITIGATION.
11272	Some private, state and mine, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

2. Sensitive species and Cultural

Code	Definition
12000	No known conflicts.
12010	Plants nearby, use o.k.
12020	Animals nearby, use o.k.
12030	Cultural nearby, use o.k.
12040	Plants and animals nearby, use o.k.
12050	Plants and cultural nearby, use o.k.
12060	Animals and cultural nearby, use o.k.

Code	Definition
12070	Plants, animals and cultural nearby, use o.k.
12119	Plants nearby, use NOT o.k.
12129	Animals nearby, use NOT o.k.
12139	Cultural nearby, use NOT o.k.
12149	Plants and animals nearby, use NOT o.k.
12159	Plants and cultural nearby, use NOT o.k.
12169	Animals and cultural nearby, use NOT o.k.
12179	Plants, animals and cultural nearby, use NOT o.k.
12212	Plants nearby, POTENTIAL MITIGATION.
12222	Animals nearby, POTENTIAL MITIGATION.
12232	Cultural nearby, POTENTIAL MITIGATION.
12242	Plants and animals nearby, POTENTIAL MITIGATION.
12252	Plants and cultural nearby, POTENTIAL MITIGATION.
12262	Animals and cultural nearby, POTENTIAL MITIGATION.
12272	Plants, animals and cultural nearby, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

3. RNA/WSA

Code	Definition
13000	No known conflicts.
13010	RNA nearby, use o.k.
13020	WSA nearby, use o.k.
13030	RNA and WSA nearby, use o.k.
13119	RNA nearby, use NOT o.k.
13129	WSA nearby, use NOT o.k.
13139	RNA and WSA nearby, use NOT o.k.
13212	RNA nearby, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

4. Barrens Interface

Code	Definition
14000	No known conflicts.
14010	Barren nearby, use o.k.
14119	Barren nearby, use NOT o.k.
14212	Barren nearby, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

5. Riparian Areas

Code	Definition
15000	No known conflicts.
15010	Riparian nearby, use o.k.
15119	Riparian nearby, use NOT o.k.
15212	Riparian nearby, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

Tier 2

6. Erosion, Soil Loss Standard

Code	Definition
16000	No known conflicts (Green)
16010	Yellow, use o.k.
16020	Red, use o.k.
16119	Red, use NOT o.k.
16212	Red, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

Tier 3

7. OHV use/use spectrum

Code	Definition
17000	No known conflicts – contributes to use spectrum.
17119	Does NOT contribute to use spectrum.
17010	Recreation Conflicts – Limited Use o.k.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

Tier 4

8. Route Management Objective (RMO)

Code	Definition
18000	No known conflicts – manageable given current RMO and funding/staffing levels.
18119	Not manageable due to physical conditions, use NOT o.k.
18212	Not manageable due to physical conditions, POTENTIAL MITIGATION (reroute)
18222	Not manageable due to RMO, POTENTIAL MITIGATION.
18232	Not manageable due to funding/staffing, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

9. Admin Use/ROW's

Code	Definition
19000	No known conflicts
19119	Traverses private, no public access, use NOT o.k.
19129	Unprotected facility, use NOT o.k.
19212	Private route, POTENTIAL MITIGATION.
19222	Unprotected facility, POTENTIAL MITIGATION.
19139	Other Conflicts (specify below), use NOT o.k.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

10. Route Proliferation/redundancy

Code	Definition
110000	No known conflicts
110119	Presently excessive route proliferation, use NOT o.k.
110129	Route is redundant, use NOT o.k.
110212	Route proliferation, POTENTIAL MITIGATION.
110222	Route redundant, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

11. Route Continuity

Code	Definition
111000	No known conflicts, promotes OHV continuity/connectivity.
111010	Dead end route, all use o.k.
111020	Dead end route, Limited Use o.k.
111119	Dead end route, OHV use NOT o.k.
111212	Dead end route, POTENTIAL MITIGATION.
9999	NO DATA AVAILABLE
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

D. CCMA RMP: ROUTE DESIGNATION TABLE

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
R001	9.4	IMPR	OPEN*	11010	12212	13010	14212	15010	16010	17000	18000	19000	110000	111000
R010B**	0.93	IMPR	OPEN*	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
R011A	1.9	IMPR	OPEN*	11010	12212	13212	14212	15212	16010	17000	18000	19000	110000	111000
R011B	9.5	IMPR	OPEN*	11010	12212	13212	14212	15212	16010	17000	18000	19000	110000	111000
R011C	2.6	IMPR	CLOSED/ADMIN	11010	12212	13212	14212	15212	16119	17119	18222	19000	110129	111000
R011D	.15	IMPR	OPEN*	11010	12212	13212	14212	15212	16010	17000	18000	19000	110000	111000
R013	1.1	IMPR	OPEN*	11000	12000	13010	14000	15000	16010	17000	18000	19000	110000	111000
R014	1.3	IMPR	OPEN*	11030	12000	13000	14212	15000	16010	17000	18000	19000	110000	111000
R015A	2.7	IMPR	OPEN*	11010	12000	13000	14212	15000	16010	17000	18000	19000	110000	111000
R015B	2.1	IMPR	OPEN*	11010	12212	13000	14212	15212	16000	17000	18000	19000	110000	111000
R017	1.8	IMPR	OPEN*	11020	12232	13000	14000	15212	16212	17010	18000	19000	110000	111000
R018	2.8	IMPR	OPEN*	11020	12010	13000	14000	15000	16010	17010	18000	19000	110000	111020
T103	1.4	IMPR	OPEN*	11000	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T104A	1.1	IMPR	OPEN*	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T104B	3.4	JEEP	CLOSED/ADMIN	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T151B-Segment	1.8	IMPR	OPEN*	11142	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T153 **	3.0	IMPR	OPEN*	11252	12212	13212	14212	15000	16010	17000	18000	19000	110000	111000
T158A	0.5	IMPR	OPEN*	11000	12212	13212	14212	15212	16212	17010	18000	19000	110000	111000
T171A	2.3	JEEP	OPEN*	11000	12030	13000	14000	15000	16010	17000	18000	19000	110000	111000
T171B	2.2	JEEP	OPEN*	11000	12030	13000	14000	15000	16010	17000	18000	19000	110000	111000
T219	1.1	JEEP	OPEN*	11000	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T220	3.6	JEEP	OPEN*	11000	12000	13000	14000	15212	16010	17000	18000	19222	110000	111000
T221	0.7	JEEP	OPEN*	11000	12000	13000	14000	15212	16010	17000	18000	19222	110000	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
R002	6.9	4WD	CLOSED/ADMIN	11050	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
R003	0.3	4WD	CLOSED/ADMIN	11000	12212	13000	14212	15000	16010	17119	18222	19000	110129	111000
R004	1.0	4WD	CLOSED/ADMIN	11010	12000	13000	14212	15000	16000	17119	18222	19000	110129	111000
R005	5.8	4WD	CLOSED/ADMIN	11020	12000	13000	14212	15212	16000	17119	18222	19000	110129	111000
R006	1.0	4WD	CLOSED/ADMIN	11000	12000	13000	14010	15212	16212	17119	18222	19000	110129	111000
R007A	2.1	JEEP	CLOSED/ADMIN	11000	12000	13000	14212	15010	16212	17119	18222	19000	110129	111010
R007B	1.8	JEEP	CLOSED/ADMIN	11000	12000	13000	14212	15010	16212	17119	18222	19000	110129	111000
R008A	1.5	4WD	CLOSED/ADMIN	11000	12212	13000	14212	15212	16212	17119	18222	19000	110129	111000
R008B	2.0	4WD	CLOSED/ADMIN	11010	12212	13000	14212	15212	16119	17119	18222	19000	110129	111000
R009	0.9	IMPR	CLOSED/ADMIN	11010	12000	13000	14212	15000	16212	17119	18222	19000	110129	111000
R010A	1.6	JEEP	CLOSED/ADMIN	11020	12212	13212	14212	15000	16010	17119	18222	19000	110129	111000
R010C	2.7	JEEP	CLOSED/ADMIN	11000	12149	13119	14000	15000	16000	17119	18222	19000	110129	111000
R012	0.4	4WD	CLOSED/ADMIN	11000	12000	13212	14000	15000	16000	17119	18222	19000	110129	111000
R016	2.5	JEEP	CLOSED/ADMIN	11070	9999	13000	14000	15000	16010	17119	18222	19000	110129	111010
R019A	6.8	IMPR	CLOSED/ADMIN	11139	12119	13000	14000	15000	16010	17119	18222	19000	110129	111000
R019B	1.4	IMPR	CLOSED/ADMIN	11139	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
R019C	0.2	IMPR	CLOSED/ADMIN	11010	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
R019F	0.4	IMPR	CLOSED/ADMIN	11010	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T101	1.5	STT	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T105	1.0	JEEP	CLOSED	11000	12212	13000	14000	15000	16010	17119	18222	19000	110129	111000
T106	0.9	ATV	CLOSED	11000	12212	13000	14000	15212	16010	17119	18222	19000	110129	111000
T107	1.55	JEEP	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T108	1.0	ATV	CLOSED	11000	12000	13000	14000	15212	16010	17119	18222	19000	110129	111000
T109	0.7	STT	CLOSED	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T111	0.9	JEEP	CLOSED	11000	12000	13000	14010	15000	16010	17119	18222	19000	110129	111000
T112	0.5	ATV	CLOSED	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T113	1.5	ATV	CLOSED	11010	12212	13000	14212	15010	16212	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
T114	1.2	STT	CLOSED	11000	12010	13000	14212	15000	16010	17119	18222	19000	110129	111000
T115	2.1	JEEP	CLOSED	11010	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T116	2.6	STT	CLOSED	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T117	1.3	STT	CLOSED	11010	12000	13000	14212	15212	16212	17119	18222	19000	110129	111000
T119	1.2	ATV	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T120	1.7	JEEP	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T121	0.4	ATV	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T122	0.5	STT	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T123	0.3	STT	CLOSED	11000	12212	13000	14000	15212	16000	17119	18222	19000	110129	111000
T124A	1.5	STT	CLOSED	11000	12000	13000	14212	15000	16000	17119	18222	19000	110129	111000
T125	4.9	ATV	CLOSED/ADMIN	11050	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T127	0.4	STT	CLOSED	11010	12212	13000	14212	15000	16010	17119	18222	19000	110129	111000
T128	1.9	ATV	CLOSED/ADMIN	11010	12212	13000	14000	15000	16010	17119	18222	19000	110129	111000
T129	0.8	STT	CLOSED	11000	12000	13000	14212	15000	16212	17119	18222	19000	110129	111000
T132	1.2	JEEP	CLOSED	11010	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T133	0.3	JEEP	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T134	1.1	JEEP	CLOSED	11000	12212	13000	14212	15212	16010	17119	18222	19000	110129	111000
T135	1.1	STT	CLOSED	11000	12212	13000	14212	15212	16010	17119	18222	19000	110129	111000
T137	2.7	STT	CLOSED	11010	12000	13000	14212	15212	16010	17119	18222	19000	110129	111000
T138	0.7	STT	CLOSED	11000	12000	13000	14212	15000	16010	17119	18222	19000	110129	111000
T139	0.8	JEEP	CLOSED	11000	12212	13000	14000	15000	16010	17119	18222	19000	110129	111000
T140	0.8	JEEP	CLOSED/ADMIN	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T141	1.0	JEEP	CLOSED/ADMIN	11030	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T142	0.7	STT	CLOSED	11000	12000	13000	14212	15000	16010	17119	18222	19000	110129	111000
T143	1.3	JEEP	CLOSED/ADMIN	11000	12000	13000	14212	15000	16010	17119	18222	19000	110129	111000
T147	1.0	JEEP	CLOSED/ADMIN	11000	12212	13000	14212	15000	16010	17119	18222	19000	110129	111000
T148	1.5	JEEP	CLOSED	11020	12000	13000	14212	15000	16000	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
T149A	0.3	JEEP	CLOSED	11020	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T150	1.2	JEEP	CLOSED	11020	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T151	5.1	4WD	CLOSED/ADMIN	11142	12212	13000	14212	15212	16010	17119	18222	19000	110129	111000
T158B	1.9	4WD	CLOSED/ADMIN**	11010	12212	13212	14212	15212	16212	17010	18000	19000	110000	111000
T159	3.5	JEEP	CLOSED/ADMIN	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T162	0.6	STT	CLOSED	11000	12000	13212	14000	15212	16010	17119	18222	19000	110129	111000
T163	1.5	STT	CLOSED	11000	12000	13000	14212	15000	16212	17119	18222	19000	110129	111000
T164	1.6	STT	CLOSED	11000	12000	13000	14000	15212	16010	17119	18222	19000	110129	111000
T165	1.0	STT	CLOSED	11000	12000	13000	14212	15000	16010	17119	18222	19000	110129	111000
T166	5.0	STT	CLOSED	11010	12000	13000	14000	15212	16010	17119	18222	19000	110129	111000
T167	0.8	STT	CLOSED	11000	12000	13000	14212	15000	16212	17119	18222	19000	110129	111000
T168	1.1	JEEP	CLOSED	11010	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T169	1.2	ATV	CLOSED/ADMIN	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T170	0.4	Paved	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T175	0.9	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T176	1.1	ATV	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T178	2.0	ATV	CLOSED/ADMIN	11000	12010	13000	14212	15212	16000	17119	18222	19000	110129	111000
T179	0.1	JEEP	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T181	3.2	STT	CLOSED/ADMIN	11000	12010	13000	14000	15212	16212	17119	18222	19000	110129	111000
T182	0.7	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T183	1.3	STT	CLOSED/ADMIN	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T184	6.0	STT	CLOSED/ADMIN	11000	12212	13000	14212	15212	16212	17119	18222	19000	110129	111000
T185	0.6	STT	CLOSED	11000	12212	13000	14000	15000	16010	17119	18222	19000	110129	111000
T189A	0.9	JEEP	CLOSED/ADMIN	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T189B	0.6	JEEP	CLOSED/ADMIN	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T189C	3.2	ATV	CLOSED/ADMIN	11000	12212	13000	14212	15000	16212	17119	18222	19000	110129	111000
T191	2.1	STT	CLOSED	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
T192	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T193	2.8	STT	CLOSED	11000	12000	13212	14212	15000	16000	17119	18222	19000	110129	111000
T194	2.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T195	.8	STT	CLOSED	11010	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T196	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T197	0.5	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T198	2.4	STT	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T199	0.6	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T200	0.6	STT	CLOSED	11000	12000	13000	14000	15212	16212	17119	18222	19000	110129	111000
T201	0.5	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T202	0.6	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T203	1.5	STT	CLOSED	11010	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T204	0.8	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T205	0.8	STT	CLOSED	11010	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T206	1.4	STT	CLOSED/ADMIN	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T206	1.3	JEEP	CLOSED/ADMIN	11232	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T207	0.4	STT	CLOSED	11020	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T208	2.3	STT	CLOSED	11010	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T209	2.0	ATV	CLOSED	11000	12000	13000	14000	15000	16010	17119	18222	19000	110129	111000
T210	1.6	STT	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T211	1.2	STT	CLOSED	11000	12000	13000	14000	15212	16212	17119	18222	19000	110129	111000
T213	1.5	ATV	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T214	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T215	1.1	ATV	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T216	2.3	ATV	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T216	3.8	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T218	1.5	STT	CLOSED	11000	12212	13000	14000	15212	16010	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
T222	0.8	STT	CLOSED	11020	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T223	0.70	STT	CLOSED	11020	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T224	1.7	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T225	1.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T226	1.6	STT	CLOSED	11000	12212	13000	14000	15000	16000	17119	18222	19000	110129	111000
T227	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T228	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T229	0.7	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T230	0.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T231	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T232	0.3	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T233	0.3	4WD	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T234	0.7	ATV	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T235	1.5	STT	CLOSED	11000	12000	13000	14000	15000	16212	17119	18222	19000	110129	111000
T236	1.0	STT	CLOSED	11000	12000	13000	14000	15212	16000	17119	18222	19000	110129	111000
T237	1.8	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T238	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T239	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T241	0.6	STT	CLOSED	11010	12212	13000	14000	15000	16000	17119	18222	19000	110129	111000
T243	1.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T244	0.5	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T245	0.7	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T246	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T247	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T248	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T249	0.23	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T250	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
T251	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T252	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T253	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T254	0.4	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T255	0.38	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T256	0.43	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T257	0.25	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T258	0.36	JEEP	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T259	0.39	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T260	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T261	0.87	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T262	0.11	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T263	0.61	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T264	0.66	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
T265	0.24	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR017	0.1	JEEP	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR070	0.21	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR111	0..32	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR200	0.29	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR208	0.84	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR241	0.29	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR245	0.08	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR326	0.25	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR327	0..31	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR385	0.08	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR396	0.14	STT	CLOSED	--	--	--	--	--	16000	17119	18222	--	110129	--
OR438	0.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
OR439	0.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR485	0.19	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR488	0.38	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR516	0.22	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR565	0.2	STT	CLOSED	--	--	--	--	--	16000	17119	18222	--	110129	--
OR 610	0.2	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 611	0.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 612	0.1	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 613	0.02	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 614	0.1	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 615	0.1	ATV	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 616	0.03	ATV	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 617	0.01	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 619	0.07	IMPR	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 635	0.27	JEEP	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 642	0.39	STT	CLOSED	11000	12212	13000	14000	15000	16010	17119	18222	19000	110129	111000
OR 707	0.14	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 714	0.65	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 715	0.33	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 716	0.10	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 743	0.18	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 751	0.06	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 752	0.10	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 755	0.24	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 759	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 784	0.97	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 786	0.3	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Route Number	Route Length Miles	Route RMO	Route Designation	Route Evaluation Criteria 1,2										
				Tier 1				2		3	Tier 4			
				1	2	3	4	5	6	7	8	9	10	11
OR 788	0.1	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111119
OR 794	0.20	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 795	0.40	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 810	0.32	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 825	0.22	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 826	0.18	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 827	0.44	STT	CLOSED	11000	12000	13000	14000	15000	16002	17119	18222	19000	110129	111000
OR 830	0.14	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 831	0.59	STT	CLOSED	11000	12000	13000	14000	15000	16002	17119	18222	19000	110129	111000
OR 836	0.14	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 839	0.10	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 844	0.2	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000
OR 865	0.15	STT	CLOSED	11000	12000	13000	14000	15000	16000	17119	18222	19000	110129	111000

Route Evaluation Criteria: 1, Private/state lands/mines; 2, Sensitive Species and Cultural; 3, RNA/WSA; 4, Barrens Interface; 5, Riparian Areas; 6, Erosion, Soil Loss Standard; 7, OHV use/use spectrum; 8, RMO; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity.

*** Designated routes are "OPEN" subject to the "LIMITED" area vehicle use restrictions.**

**** Indicates route/segment to be combined with another route for new naming (i.e. T153 will become R11 since R011C is to be designated closed).**

Appendix III - San Benito Mountain Research Natural Area Management Plan

The San Benito Mountain Research Natural Area (SBMRNA), located within the Clear Creek Management Area (CCMA), was designated by the BLM in 1999 to encourage research and provide protection of the unique conifer forest and vegetation communities on and around San Benito Mountain (BLM 1999). The boundaries of the existing SBMRNA were subsequently expanded as identified in the Clear Creek Management Area Resource Management Plan Amendment and Route Designation Record of Decision (BLM 2006). This Research Natural Area Management Plan guides management of the SBMRNA and identifies management goals and objectives that will permit natural processes to continue without interference.

1.1 Introduction

The Bureau of Land Management establishes and maintains Research Natural Areas (RNAs) for the primary purpose of research and education. RNAs have one or more of the following characteristics (43 CFR 8223 – Research Natural Areas):

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

Dr. James R. Griffin made the original recommendation to establish the San Benito Mountain Natural Area in 1970, declaring that "…it would in no way duplicate any North Coast Range serpentine natural area and would be a highly desirable contrast with them." The San Benito Mountain Research Natural Area (SBMRNA) has outstanding features including geology, soils, ecology, and threatened plant species.

Ultramafic areas are distributed throughout California, primarily in the Sierra Nevada, Klamath Mountains, and Coast Ranges. Ultramafic rock (henceforth referred to as "serpentine") is an igneous rock with very low silica content (less than 45%), generally >18% magnesium oxide, high iron oxide, low potassium, and composed of usually greater than 90% mafic minerals (dark colored, high magnesium and iron content) (Brooks 1987; Alexander et al. 2007). Ultramafic rock types include peridotite and serpentinite (hydrothermally altered). The New Idria serpentine mass (synonymous with the BLM designation "Serpentine ACEC") is outstanding as a geologic feature among the serpentine areas of California. It is the largest serpentine area in the South Coast Range at approximately 30,000 acres in size. The New Idria serpentine mass was formed from peridotite (harzburgite or dunite) which has been completely mineralogically-altered, sheared, and crushed to yield a nearly incoherent mass of serpentinite (Coleman 1957, 1986, 1996; Mumpton and Thompson 1975; Van Baalen 1995). Metamorphism within the New Idria serpentine mass has generated several rare serpentinite-associated minerals which the area is globally famous for, including fresnoite, joaquinite, neptunite, and benitoite (Louderback 1907, 1909, Bradley 1909; Pabst 1951; Coleman 1957, 1986; Laird and Albee 1972). The New Idria serpentine mass also contains many economically-important minerals including cinnabar (mercury sulfide), chromite (iron-chromium oxide), and chrysotile asbestos, which have all been commercially mined during the past 150 years (Coleman 1957, 1986, 1996; Eckel and Meyers 1946; Matthews 1961; Merritt 1962). Cinnabar was extensively mined adjacent to the SBMRNA (Aurora Mine; San Carlos peak mine pit) when New Idria was active. Due to its unique geology and mineral suites, the New Idria serpentine mass is a popular mineral collection locality and geological research study site.

The extremely sheared and pulverized serpentinite bedrock of the New Idria serpentine mass weathers to produce soils with adverse chemistry including nutrient deficiency (nitrogen, phosphorus, potassium, calcium) and heavy metal toxicity (magnesium, nickel) (Kruckeberg 1984; Alexander et al. 2007; Arroues 2006; Reinsch and Arroues 2010). The pulverized nature of the bedrock, in combination with the extreme adverse soil conditions have resulted in large areas of natural, moonscape barrens completely devoid of vegetation. Areas with greater stability and more

soil development support unique vegetation types including serpentine willow/riparian, serpentine chaparral, and mixed conifer forest. The San Benito Mountain mixed conifer forest is the only forest in the world that includes Jeffrey (*Pinus jeffreyi*), Coulter (*Pinus coulteri*), and foothill (*Pinus sabiniana*) pines, and incense cedar (*Calocedrus decurrens*) at the same location (Griffin 1974). The presence of Jeffrey and Coulter pines in such close proximity has resulted in Jeffrey x Coulter pine hybrids (Zobel 1951a, 1951b; Libby 1958; Griffin 1974; Ledig 2000). The area comprising the SBMRNA was clear cut when New Idria was active to supply mine support timbers (particularly incense cedar) and cord wood to fuel the retorts at New Idria (Sloane 1914; Griffin 1974). Very few old growth trees remain in the SBMRNA. Chaparral was also extensively cut to supply cord wood for the retorts. Most of the vegetation has since recovered and represents secondary forest (Griffin 1974).

1.2 Planning

1.2.1 Management Goals

The following management goals will contribute to preserving the values for which the SBMRNA was established:

- To protect the globally unique San Benito Mountain mixed conifer forest ecosystem, special status species, and the adjacent ecotones in their natural state for science research and educational purposes. The San Benito Mountain mixed conifer forest contains conifer tree species that occurs nowhere else together in the world (Griffin 1974; Evans et al. 2006). This forest also contains many serpentine endemic herb and shrub species.

- To define and create an environment for research designed (1) to investigate and better understand the geology, biology, ecology, and archaeology, and (2) to build an information base for guiding management of this and other serpentine ecosystems on BLM lands.

- To allow uses inside the SBMRNA compatible with the primary purpose of the Research Natural Area for scientific research and education.

1.2.2 Management Objectives

Management objectives result in actions that the BLM and the public evaluate as measures of success in attaining the management goals. Because new information will become a part of adaptive management of the SBMRNA and nearby ecosystems, the management objectives may evolve over to time to meet legal requirements and public expectations.

The following list includes management objectives that will contribute to permitting natural processes to continue within the SBMRNA:

- Include and maintain within management constraints, the core area of the San Benito Mountain forest and a buffer with the transitional chaparral/woodland habitats that border the Forest for the purpose of conservation.
- Establish SBMRNA boundaries on the basis of watershed or other natural features. The BLM policy for its Research Natural Areas is to "Permit natural processes to continue without interference." and to "Determine the boundaries for all vegetation series representatives. In order to preserve the greatest diversity possible, the boundaries will include a variety of elevation, slope, and aspect features, and should follow natural boundaries."
- Protect known suboccurrences and potential habitat of San Benito evening primrose and provide conditions within the SBMRNA in support of the Recovery Plan that conforms to the Biological Opinion for the San Benito evening primrose issued by the U.S. Fish and Wildlife Service (FWS 2005).
- Protect existing suboccurrences and habitat of all other known BLM sensitive species that occur within the SBMRNA boundaries.
- Protect all cultural resources and encourage public partnerships for research and educational use of the SBMRNA.
- Consult with Native Americans from local tribes for management consistent with traditional Native American culture and for full tribal participation in planning, research and environmental education.

- Facilitate quality research overseen by a knowledgeable committee selected from: universities and colleges; other private research institutions; the Native American community; federal and State of California government research and regulatory agencies; and public interest groups and advisory committees. The committee will identify research needs and guide proposed research. Establishment and function of the committee shall meet the provisions established by the Federal Advisory Committee Act (FACA).
- Foster other uses of the SBMRNA that are compatible with its primary purpose. Provide for continued authorized uses such as rights-of-way and easements that are compatible with management values for the SBMRNA.
- Implement the CCMA Resource Management Plan and Record of Decision as they specifically apply to the SBMRNA for the protection and improvement of soil, air, water, and biological resources.
- Develop a Fire Management Plan for the SBMRNA so that the FMO is aware of the sensitive species habitat locations and vehicle access routes.
- Develop a barren area monitoring and restoration plan that will enable BLM staff to understand factors that influence erosion rates on serpentine barrens in order to reduce erosion, sediment transport, and restore vegetation buffers.
- Develop a natural resource research program to determine characteristics of the unique ecosystem that are important and what the management response will be to changes in these characteristics.

1.3 Natural Resource Inventory

A comprehensive inventory of the natural resources of SBMRNA is necessary to understand what resources are present there and to effectively manage those resources. Natural resources of the SBMRNA that have had little to no inventory to date include lichen species, invertebrate species, and bat species.

1.3.1 Air

The SBMRNA is located within the North Central Coast air basin. Airborne chrysotile asbestos originating from the New Idria serpentine mass portion of the SBMRNA has the potential to adversely affect human health (EPA 2008). Chrysotile asbestos is classified as a hazardous air pollutant under the Clean Air Act Amendments of 1990.

1.3.2 Water

The SBMRNA includes four major perennial streams including San Carlos Creek, Clear Creek (headwaters), Sawmill Creek, and Cantua Creek. The streams are important habitat for riparian zone plant and animal species of CCMA, some of which are rare and federally-listed. All four streams originate from the New Idria serpentine mass. Rocks and soils of the New Idria serpentine mass contain chrysotile asbestos as well as high concentrations of heavy metals including nickel, chromium, cobalt, and mercury (Dynamac Corporation 1998; EPA 2008). Streams of the SBMRNA may transport chrysotile asbestos and mercury in sediment loads, adversely impacting wildlife and humans. Clear Creek is classified as an impaired watershed due to high levels of mercury.

1.3.3 Geology and Soils

The SBMRNA includes the northeastern portion of New Idria serpentine mass and includes a flanking portion of the Franciscan formation (sedimentary rock). The geology of CCMA, including the SBMRNA, has been mapped by Eckel and Meyers (1946), Coleman (1961), and Van Baalen (1995). The BLM has since mapped (2010 and 2011) serpentine masses (tectonic) and serpentine landslides in a high level of detail.

Large areas of the New Idria serpentine mass (particularly the barrens) are generally mapped as Henneke soil series and Igneous rock land in the San Benito county soil survey (Isgrig 1969). The USDA Natural Resource Conservation Service (NRCS) recently completed a detailed soil survey for the CCMA in San Benito county in 2011 to resolve soil series polygon mapping discrepancies across the San Benito - Fresno county line and to more accurately describe soils of the New Idria serpentine mass (Reinsch and Arroues 2010). The survey resulted in the

description of five soil series derived from serpentine including Duckworth, Cascara, Flomack, Delmexico, and Idriapeak. Additionally two new soil series derived from nonserpentine (sedimentary) rock were described including Sancarlos and Borreguero.

1.3.4 Lichen Species

Lichens are present on rocks, shrubs, and trees within the SBMRNA. Globally, information about lichens present on serpentine rocks and soil is scarce. Some studies have found lichen species that appear to be unique or endemic to serpentine substrates (Sirois et al. 1988; Harris et al. 2007). A baseline lichen survey was conducted of serpentine and nonserpentine rocks in the CCMA in 2011 (Rajakaruna et al. in press). There were ten collection sites (5 serpentine, 5 nonserpentine) total distributed throughout the northern CCMA. Three collection localities were in close proximity to the SBMRNA: New Idria reservoir (serpentinite; immediately north of the SBMRNA), San Benito Mountain peak (serpentinite; within SBMRNA), and San Carlos peak (shale; immediately north of the SBMRNA). Of the 119 saxicolous lichen species collected, six including *Buellia aethalea*, *Buellia ocellata*, *Caloplaca oblongula*, *Rhizocarpon suarinum*, *Thelocarpon laureri*, and *Trapelia obtegens*, are reported new to California. Additionally, an apparently previously undescribed *Solenopsora* sp. is being genetically sequenced to confirm its taxonomic status. The rest of the species encountered are relatively frequent in the lichen flora of southern and central California, except *Aspicilia praecrenata*, a lichen considered to be extirpated from the South Coast Range. Although 60 of the lichen species sampled from the 10 collection suites were present only on serpentine rocks, it is unclear if any of the species may be regarded as unique or endemic to serpentine. Further studies (more extensive collection throughout the CCMA and other nearby serpentine areas) are needed to determine if any serpentine endemic lichen species are present.

1.3.5 Plant Species and Habitats

The diversity of rare vascular plants is one of the most remarkable features of the CCMA. Rare plant species that are known to occur or may occur within the SBMRNA include the federally-listed threatened San Benito evening primrose (*Camissonia benitensis*); CNPS list 1B rayless layia (*Layia discoidea*), talus fritillary (*Fritillaria falcata*), San Benito fritillary (*Fritillaria viridea*), Mariposa cryptantha (*Cryptantha mariposae*), Mt. Diablo phacelia (*Phacelia phacelioides*); and CNPS list 4 Guirado's goldenrod (*Solidago guiradonis*), serpentine leptosiphon (*Leptosiphon ambiguus*), San Benito monardella (*Monardella antonina* ssp. *benitensis*), Hernandez bluecurls (*Trichostemma rubisepalum*), Andrew's bedstraw (*Galium andrewsii* ssp. *gatense*), Brewer's blarkia (*Clarkia breweri*), sulphur flower buckwheat (*Eriogonum umbellatum* var. *bahiiforme*), one-sided monkeyflower (*Mimulus fremontii*), and Santa Clara thorn mint (*Acanthomintha lanceolata*).

Inventories of plant species in the SBMRNA will serve as a baseline for GIS analyses describing the ranges of habitat characteristics in which rare plants currently exist, previously existed, or might exist under BLM management. These inventories will also serve as a baseline for tracking and mapping non-native invasive plants of concern to the BLM and to the California Department of Agriculture.

Existing information sources from herbarium holdings, expert knowledge, and inventory results will describe:

- historically known sites
- historically known sites outside the CCMA, but useful to define critical habitat features inside the CCMA
- delineation of first approximations of suitable habitat for each rare species
- plant searches for suitable and occupied habitats
- refinement of criteria used to delineate suitable and occupied habitats
- identification of habitat locations that have a high probability to sustain populations without directed BLM management or with species-specific directed management.

1.3.6 Vegetation

Detailed vegetation classification and mapping has been completed for the SBMRNA and the entire CCMA (Evans et al. 2006).

1.3.6.1 San Benito Mountain Mixed Conifer Forest

Currently, the USDA Forest Service, Pacific Northwest Research Station Forest Inventory and Analysis (FI&A) Program has permanent plots, systematically selected throughout the Pacific Coast States. To understand changes in the San Benito Mountain mixed conifer forest, the BLM may review data collected over the span of several decades by the Forest Service.

Small isolated populations of conifer tree species in the Central California Coast Region are important globally as genetic resources. Jeffrey pine, Coulter pine, and incense cedar from San Benito Mountain resemble island-like distributions analogous to that of Monterey pine in the Central Coast Region. As such, they resemble unique genetic sources. Ledig (2000) has found that the unique hybrids between Coulter pine and Jeffrey pine from San Benito Mountain, first described by Zobel (1951a, 1951b), may have altered the genetic structure of Coulter pines through introgression.

1.3.7 Invertebrate Species

Little information exists about the diversity or uniqueness of arthropod species present on serpentine soils or in streams within the SBMRNA and the entire CCMA. Serpentine endemic insect species have been found at several serpentine areas in California (Harrison and Shapiro 1988; Gervais and Shapiro 1999; Schwartz and Wall 2001; Boyd 2009). The isolated San Benito Mountain mixed conifer forest within the New Idria serpentine mass represents a forest island within a geologic island, providing conditions conducive to specialized adaptation and speciation.

1.3.8 Vertebrate Species

Amphibians and Reptiles

Perennial creeks including San Carlos Creek, Clear Creek, and Sawmill Creek are known to harbor BLM sensitive foothill yellow-legged frog (*Rana boylii*) and two-striped garter snake (*Thamnophis hammondii*). Uplands in the SBMRNA are habitat for California horned lizard (*Phrynosoma blainvillii*).

Birds

San Benito Mountain is an important migratory stop for many rare and infrequently seen bird species. The high elevation San Benito Mountain mixed conifer forest provides habitat islands for several bird species found nowhere else in the Central Coast Range (Johnson and Cicero 1985). Rare migratory birds that stop at San Benito Mountain include olive-sided flycatcher (*Contopus cooperi*), loggerhead shrike (*Lanis ludovicianus*), yellow-breasted chat (*Ichteria virens*), and grasshopper sparrow (*Ammodramus savannarum*). Other uncommon bird species include mountain quail (*Oreortyx pictus*), gray flycatcher (*Empidonax wrightii*), Hammond's flycatcher (*E. hammondii*), California thrasher (*Toxostoma redivivum*), rufous-crowned sparrow (*Aimophila ruficeps*), Bell's sage sparrow (*Amphispiza belli* spp. *belli*), and black-chinned sparrow (*Spizella atrogularis*).

Mammals

Presently, no data are available about bats resident in the SBMRNA or in the rest of the CCMA. BLM lands elsewhere in California with a history of mining have frequently become important habitats for bats. Abandoned mines host bats, mostly as single-species colonies, and perhaps only seasonally as maternity dens, migration rest stops, hibernation sites, and colonial roosts during the day. Many bat species are BLM California species of management concern. BLM sensitive bats that may be present within the SBMRNA include western mastiff-bat (*Eumops perotis californicus*), Townsend's western big-eared bat (*Corynorhinus townsendi townsendi*), pallid bat (*Antrozus pallidus*), Yuma myotis (*Myotis yumanensis*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanoides),* and small-footed myotis (*Myotis ciliolabrum*).

1.4 Natural Resource Monitoring

Natural resource monitoring is essential to determine how ecological processes and species change over time. Monitoring results can be used to interpret effects of human activities.

1.4.1 Air

Wind erosion and aerial suspension of chrysotile asbestos presents a human health risk. Sampling and modeling of human health risk for asbestos under natural conditions has been conducted at the CCMA by research groups and the EPA (PTI Environmental Services 1992; EPA 2008). The BLM has an ongoing air sampling program for monitoring human exposure to chrysotile asbestos at the CCMA. BLM employees are required to conduct air monitoring for personal exposure to chrysotile asbestos whenever they work within the Serpentine ACEC (New Idria serpentine mass). Some air monitoring samples are collected within the SBMRNA.

1.4.2 Water

Serpentine rocks and soils of the SBMRNA and CCMA contain high concentrations of heavy metals including nickel, chromium, cobalt, and mercury (Kruckeberg 1984; Alexander et al. 2007; Arroues 2006; Reinsch and Arroues 2010). Clear Creek is classified as an impaired watershed due to high levels of mercury. Trends in heavy metal cycling in aquatic ecosystems are important to the overall health of the ecosystem. Concentrations of heavy metals often display a seasonal pattern in watersheds. In order to manage watersheds to reduce environmental pollutants, it is important to know what environmental pollutants exist and what their concentrations and seasonal patterns are. The US Geological Survey monitors water from Clear Creek at a gauging station near Oak Flat Campground.

In addition to heavy metals, erosion and liquid-suspended transport of chrysotile asbestos to water sources also presents a human health risk. Water transport of asbestos to the California Aqueduct from the CCMA was detected in 1980 (EPA 1991). The asbestos was believed to have originated from the Atlas Mine and was transported by water in White Creek to Los Gatos Creek and finally into the aqueduct. The EPA responded with remediation of the Atlas Mine in order to prevent further introduction of asbestos into the aqueduct. Large quantities of chrysotile asbestos are transported by water out of CCMA into streams and rivers annually.

Water quality is best monitored by establishing permanent measurement (gauging) stations. Currently, there is no formal program by the BLM to monitor water flow, sediment load, or water quality of streams within the SBMRNA or elsewhere in the CCMA.

1.4.3 Geology and Soils

Organic matter accumulation is an important factor in serpentine soil development and fertility (Alexander et al. 2007). Pioneer plant species such as buckbrush (*Ceanothus cuneatus*), manzanita (*Arctostaphylos glauca*, *A. pungens*), and pines (*Pinus sabiniana*, *P. coulteri*, and *P. jeffreyi*) can establish on barren serpentine soils and produce large amounts of leaf litter which decomposes and becomes incorporated into the soil. Increases in soil organic matter improve soil conditions for the establishment of secondary plant species such as leather oak (*Quercus durata*), silktassel (*Garrya congdonii*), toyon (*Heteromeles arbutifolia*), and many grass and forb species to become established within the serpentine plant community.

Little is known about organic matter cycling and accumulation on the serpentine soils of the SBMRNA. An understanding of organic matter cycling is important in understanding how vegetation becomes established on serpentine soils. Organic matter accumulation is best monitored by establishing permanent study plots.

Soil erosion is of great concern to BLM managers due to the high proportion of natural serpentine barrens within the SBMRNA and CCMA. Implementing standardized hydrological monitoring for sediment flows and for water quality will provide objective and comparable measures of the success of ecosystem management in the SBMRNA

to minimize sediment flows and erosion. Long-term monitoring results can provide watershed-scale models of water and sediment flow, as well as changes to stream channel morphology. Water and sediment flows and stream morphology are critical factors in the formation and degradation of rare plant habitat such as the stream terraces frequently occupied by San Benito evening primrose.

Soil erosion can be quantified in two ways including soil depth loss as measured by staff gauge grid established upon the area of interest, or collection (basin or silt fence) of the sediment eroded from a particular area, downhill of that area. Sediment collection is the easiest method. One easy way to measure soil erosion is to establish silt fences at key sites of overland erosion (Robichaud and Brown 2002).

Currently, there is no formal program by the BLM to monitor soil development or erosion within the SBMRNA or elsewhere in the CCMA.

1.4.4 Lichen Species

Lichens are a sensitive indicator of environmental pollutants. Lichen health can be measured by total cover on rock or woody plant surfaces. Lichen colony growth on surfaces can be tracked by measuring its diameter.

Currently, there is no formal program by the BLM to monitor lichen species within the SBMRNA or elsewhere in the CCMA.

1.4.5 Plant Species and Habitats

Federally-listed plant species – San Benito evening primrose

Federally-listed threatened San Benito evening primrose has been monitored by the BLM since 1979. Complete monitoring details for San Benito evening primrose can be found in the San Benito evening primrose (*Camissonia benitensis*) Compliance Monitoring and Adaptive Management Plan (Appendix IV). Monitoring includes plant counts and documentation of habitat condition. A monitoring report is submitted to the Ventura FWS annually.

San Benito evening primrose is currently monitored by the BLM within the SBMRNA and throughout the CCMA.

Other rare plant species

Rare CNPS List 1B species including rayless layia, talus fritillary, and San Benito fritillary are currently monitored within the SBMRNA and throughout the CCMA. Monitoring by the BLM includes plant counts and documentation of habitat condition.

1.4.6 Vegetation

Vegetation is casually monitored by the BLM within SBMRNA and throughout the CCMA to evaluate human impacts and prevent non-allowable human uses (logging/woodcutting; off route vehicle travel).

1.4.7 Invertebrate Species

Monitoring of any BLM sensitive invertebrate species populations discovered within SBMRNA and the CCMA may be conducted following inventory.

1.4.8 Vertebrate Species

Amphibians and Reptiles

Foothill yellow-legged frog (*Rana boylii*) is a BLM sensitive species. Although foothill yellow-legged frog is declining over its entire range, populations in CCMA appear to be self-sustaining. The BLM developed a

monitoring protocol for foothill yellow-legged frog in 2001 and monitoring is conducted annually throughout the CCMA.

Birds

Populations of passerine birds in chaparral and forest are of particular concern because these habitats are increasingly rare and fragmented. The high-elevation San Benito Mountain mixed conifer forest provides habitat islands for several bird species found nowhere else in the Central Coast Range (Johnson and Cicero 1985). Changes in the populations of rare bird species that nest in the conifer forest may be an indicator that habitat conditions are changing.

Breeding bird surveys have been conducted annually by the BLM within the SBMRNA and the CCMA since 1995. Species monitored include olive-sided flycatcher (*Contopus cooperi*), loggerhead shrike (*Lanis ludovicianus*), yellow-breasted chat (*Ichteria virens*), grasshopper sparrow (*Ammodramus savannarum*), mountain quail (*Oreortyx pictus*), gray flycatcher (*Empidonax wrightii*), Hammond's flycatcher (*E. hammondii*), California thrasher (*Toxostoma redivivum*), rufous-crowned sparrow (*Aimophila ruficeps*), Bell's sage sparrow (*Amphispiza belli* spp. *belli*), and black-chinned sparrow (*Spizella atrogularis*).

Mammals

Monitoring of any BLM sensitive bat species populations discovered in the SBMRNA and the CCMA may be conducted following inventory.

1.5 Natural Resource Research

Science supports sustainable resource management of the SBMRNA and CCMA, and provides the objective information upon which BLM managers make choices for the benefit of the public. The BLM does not presume to have sufficient funding to support research of all natural resource types within the SBMRNA. Researchers interested in studying natural resources of the SBMRNA come from diverse disciplines and interest groups and from diverse government agencies, research institutions, universities in California and other states, and in several instances, internationally. The following research topics of interest may be undertaken within the SBMRNA:

1.5.1 Air

- Effects of chrysotile asbestos on the health of BLM employees and recreation visitors
- Modeling air quality impacts under alternate management scenarios, with special reference to the transport of air-borne asbestos, mercury, nitrogen- and sulfur-based gases, and ozone

1.5.2 Water

- Influence of the extremely sheared (pulverized) New Idria serpentine mass on local hydrology. Curiously, Clear Creek maintains high flow rates year-round, even during drought years
- Heavy metal and chrysotile asbestos transport and cycling in local streams and rivers

1.5.3 Geology and Soils

- Mineralogy (rare/unique minerals), geology (ultramafic), and tectonics (New Idria thrust fault)
- Why are the serpentine barrens so barren? Explore factors including geology (pulverized, unstable geology), adverse soil characteristics, and interaction with vegetation and human land use
- Rate of soil formation and soil erosion under different vegetation types and subject to different types and levels of human activities
- Model soil erosion under alternate management scenarios, with reference to the frequency and severity of naturally occurring and human-facilitated erosion

- Organic matter accumulation and nutrient cycling

1.5.4 Lichen Species

- Lichen adaptations to adverse physical and chemical conditions imposed by serpentine substrates

1.5.5 Plant Species and Habitats

- Plant adaptations to adverse physical and chemical conditions imposed by serpentine soils including macronutrient deficiency (nitrogen, phosphorus, potassium, calcium); macronutrient toxicity (magnesium); micronutrient deficiency (molybdenum); micronutrient toxicity (nickel), and other heavy metal toxicity (cobalt, chromium, mercury)
- Recovery of rare and federally-listed plant species. Research topic focus including optimal habitat parameters (soil, vegetation), soil seed bank, seed germination, seedling survival, fecundity, breeding system and pollination, demography, animal interactions, competitive interactions, population introductions, human impacts, population viability analysis
- Invasion by non-native plant species - Ecosystem resistance and management response for control on serpentine and nonserpentine soils

1.5.6 Vegetation

- Comparison of vegetation type on serpentine and adjacent nonserpentine soils across the geologic boundary. Influence of soil characteristics
- Conifer seed collection and ex situ tree breeding
- Dendrochronology – demography, historic climate and fire history interpretation
- Packrat nest (midden; rock outcrops) and pollen core (Spanish Lake) sampling – historic climate interpretation
- Model the development of forest vegetation on San Benito Mountain and changes under different scenarios of climate change and local human impacts
- Reforestation practices to restore logged and burned forests on serpentine soils
- Revegetation of serpentine barrens and other drastically disturbed serpentine substrates such as asbestos mine tailings
- Human history and land use (pre- and post-European settlement)

1.5.7 Invertebrate Species

- Invertebrate adaptations to adverse physical and chemical conditions imposed by serpentine substrates
- Influence of heavy metals in streams on aquatic invertebrate species
- Influence of insects (bark beetles) on the Sam Benito Mountain mixed conifer forest

1.5.8 Vertebrate Species

- Influence of heavy metals in streams on aquatic vertebrate species
- Invasion by non-native animal species - Ecosystem resistance and management response for control on serpentine and nonserpentine soils

1.5.9 Partnerships

Funding for science at BLM to improve land management has not been a fiscal priority in the Federal budget. BLM cannot depend on internal funding to initiate or support many of the research topics. Without investment, tasks for inventories, monitoring protocols, and field research in the SBMRNA would proceed slowly.

The BLM Hollister Field Office staff may contribute their time and other in-kind services to scientists and researchers who wish to conduct research. The Field Office staff can continue to foster a setting of engaged inquiry with scientists and researchers at the many government agencies and universities located in the counties that surround CCMA.

One important step to facilitating environmental studies in the CCMA has been assistance agreements and memoranda of understanding between the BLM California State Office and the University of California and California State University systems, established in 2003. At present, the BLM works with the California state natural resource agencies and other federal agencies to collaborate on joint watershed planning. The BLM also currently works with researchers from the University of California and California State University systems on studies of federally-listed plant species recovery, serpentine plant tolerance and evolution and serpentine barrens revegetation. Such efforts improve lines of communications between BLM employees and interested scientists from regulatory and research agencies and universities.

The following institutions listed below are active in research that is occurring directly in the CCMA or bearing directly on the management issues of the CCMA. The BLM commits itself to working to promote the research work of these institutions in the CCMA and to expanding the roster of institutions involved. By promoting science in the CCMA, BLM promotes improvement of its own management to remain responsive to social and environmental needs for sustainable and robust ecosystems.

Educational Institutions
University of California System: Berkeley, Davis, Santa Cruz, Merced
California State University System: San Francisco, San Jose, Stanislaus
Stanford University
University of Utah

California State Agencies
Department of Fish and Wildlife
Department of Forestry and Fire Protection (CALFIRE)
Department of Parks and Recreation, Off-Highway Vehicle Recreation Division
Department of Water Resources (Water Resources Board)

US Federal Agencies
Environmental Protection Agency
National Science Foundation
US Department of Agriculture, Forest Service, Pacific Northwest Research Station, Forestry Inventory and Analysis Program
US Department of Agriculture, Forest Service, Pacific Southwest Research Station, Institute of Forest Genetics
US Department of Agriculture, Natural Resource Conservation Service
US Department of Energy
US Department of the Interior, Geological Survey, Western Ecological Studies Center

Governmental Organizations Outside of the United States
Canadian Geological Survey

Non-Governmental Non-Profit Agencies
California Native Plant Society
California Federation of Mineralogical Societies
PRBO Conservation Science (a.k.a Point Blue Conservation Science)

1.6 Fire Management

Fire objectives will closely approximate the historical and natural fire regime. Any fire that occurs in the SBMRNA will be followed by monitoring until the area once again approximates its former condition.

1.6.1 Characteristics

This Fire Management Unit (FMU) ranges in elevation from 2000 to over 5000 feet. The highest peak in the FMU is San Benito Mountain at 5,241 feet. The FMU contains nonserpentine chaparral, serpentine barrens, serpentine chaparral, and mixed conifer forest. The FMU contains several rare plant species including San Benito evening primrose, rayless layia, talus fritillary, and San Benito fritillary.

1.6.2 Fire History

Fire history for the SBMRNA may be characterized as one of minimal to infrequent fires, as a result of low fuel loads on the low-productivity serpentine soils and barren landscape. Fire ignition is primarily caused by lightning, but the potential for fires caused by humans also exists. Serpentine and nonserpentine chaparral poses potential for extreme fire behavior. Fire use and prescribed fire have been used in the past to maintain and promote uneven-aged brush fields to natural conditions.

1.6.3 Fire Management Objectives

1. Manage the habitat for threatened and endangered plant and animal species to maintain viable populations in their natural ecosystems.
2. Promote natural conditions within SBMRNA plant communities.
3. Restore and maintain structure, species composition, and processes of native ecological communities and existing ecosystems.
4. Maintain air quality to meet or exceed applicable federal and state standards and regulations.
5. Use fire to restore and/or sustain ecosystem health based on sound scientific principles and information, balanced with other societal goals, including public health and safety, and air quality.

Management Emphasis – T&E Plants and BLM Sensitive Plants:

1. Protect and improve potential habitat for special status plant species and the San Benito Mountain mixed conifer forest.
2. Provide a mosaic of plant community seral stages.
3. Improve native plant community diversity and structure.

Suppression Objectives:

1. Natural fires should be allowed to burn if they meet fire objectives. Fire retardants and scarification for fire lines or breaks should be avoided. A resource advisor from the Hollister Field Office must be notified before any retardant drops are planned from aircraft.
2. Fire will be managed for the protection of sensitive resource values, including the San Benito Mountain mixed conifer forest.
3. Use existing roads and natural barriers as the preferred method for containment and control of wildfire in the FMU.
4. The Monterey Air Board must be notified when any earth disturbance activities occur to conform to the Air Toxic Control Measures (ATCM).
5. The potential for the BLM to inherit the wildfire after the first 24 hours of suppression may be possible if objectives are not being met in accordance with the RMP and FMP.

Fire Use and Prescribed Fire Objectives:

1. Prescribed fire may be used to sustain desired characteristics. Specific seasonal timing, patch size, yearly total and rotational time for chaparral type fuel is to be coordinated with resource personnel.
2. Fuels treatment may be considered as needed by a site-specific plan. Allow the use of prescribed fire to promote natural conditions.

3. Use prescribed fire, wildland fires, and mechanical and chemical treatments to protect and maintain rare, threatened, and endangered plants and habitat, prevent the spread of invasive plants, and benefit chaparral components important to wildlife.
4. Construct hand line and natural fuel breaks and control lines for firing only when necessary, to preserve natural fire regimes.
5. Protect and enhance the San Benito Mountain mixed conifer forest within the SBMRNA.
6. All local and state air quality objectives will be met prior to ignition of prescribed fires.

Post Fire Rehabilitation and/or Restoration Objectives:

1. Immediately initiate post-fire rehabilitation and restoration to stabilize rare, threatened, and/or endangered plant habitat.
2. Prevent soil erosion and flooding by constructing water bars and installing erosion control (straw bales, straw rolls) on fire lines and fuel breaks.
3. Reseed with a diversity of locally-collected native plant seed in appropriate sites for species, if needed.
4. Monitor for and control invasive plant species.

Fire Management Strategies:

1. Use of Appropriate Management Response (AMR) to manage all fires for management objectives and based on current conditions and fire location.
2. Prevent wildland fires from spreading to private land and the communication site on San Benito Mountain.
3. Use natural barriers for containment.
4. Restore and Rehabilitate fire suppression lines created during fire suppression efforts in a timely manner to prevent erosion and stabilize sensitive habitat.
5. Implement the full range of wildland fire fuels management practices, provided they will contribute to historical and natural fire patterns.

BLM's appropriate management response will address areas where plant communities are at high risk due to current conditions or other ecological constraints. Appropriate management response strategies will address critical habitat for wildlife, T&E species, areas of soil instability, and preservation of cultural resources. Use appropriate management response to prevent wildland fires from spreading to private and other agency lands outside the SBMRNA. Once the decadal burn target of 300 acres has been reached from either planned or unplanned ignitions, a review of objectives and strategies will lead to new suppression criteria on all wildland fires.

The appropriate management response is to prevent wildland fires from spreading to private land and to the repeater tower on San Benito Mountain. Suppression is coordinated between BLM and CALFIRE. The FMU is within Local Responsibility Area where the State provides direct protection under contract with the agency. Due to the presence of naturally-occurring asbestos in the FMU, however, CALFIRE will not enter the SBMRNA. Instead, CALFIRE will assume a support function outside of the FMU, to prevent further spread of wildfire. If resources are needed for suppression within the FMU, local red carded firefighters with hazardous asbestos health and safety training and other required training can enter the asbestos area. Additional resources will also need the proper training if extended fire suppression is required. Aerial application and the use of natural barriers is the choice for containment within the FMU. This FMU has very limited accessibility by land.

1.7 Allowable Uses

Uses inconsistent with the preservation of the values for which the SBMRNA was designated will be discouraged. Recreation and access must conform to management actions identified in the Approved RMP and be consistent with SBMRNA management objectives. Activities involving organized events or commercial activities will need written authorization.

All uses will be in accordance with 43 CFR 8223.1

- No person shall use, occupy, construct, or maintain facilities in a research natural area except as permitted by law, other Federal regulations, or authorized under provisions of 43 CFR 8223.
- No person shall use, occupy, construct, or maintain facilities in a manner inconsistent with the purpose of the research natural area.
- Scientists and educators shall use the area in a manner that is non-destructive and consistent with the purpose of the research natural area.

1.8 References

Alexander EB, Coleman RG, Keeler-Wolf T, and SP Harrison. 2007. Serpentine geoecology of western North America. Oxford University Press, New York, New York. 512 pp.
Arroues KD. 2006. Soil survey of Fresno county, California, western part. United States Department of Agriculture, Natural Resource Conservation Service, Washington, DC, USA. 1144 pp.
Boyd RS. 2009 High-nickel insects and nickel hyperaccumulator plants: A review. Insect Science 16:19-31.
Bradley WM. 1909. On the analysis of the mineral neptunite from San Benito county, California. American Journal of Science 28:15-16.
Brooks RR. 1987. Serpentine and its vegetation. Dioscorides Press, Portland, Oregon. 454 pp.
Bureau of Land Management (BLM). 1999. Clear Creek Management Area Plan Amendment and Final Environmental Impact Statement (FEIS). Hollister Field Office. Hollister, California, USA.
Bureau of Land Management (BLM). 2006. Clear Creek Management Area Resource Management Plan Amendment and Route Designation. Hollister Field Office. Hollister, California, USA.
Coleman RG. 1957. Mineralogy and petrology of the New Idria District, California. PhD thesis. Stanford University, Palo Alto, California, USA. 160 pp.
Coleman RG. 1961. Jadeite deposits of the Clear Creek area, New Idria District, San Benito County, California. Journal of Petrology 2:209-247.
Coleman RG. 1986. Field trip guide book to New Idria Area, California. 14th General Meeting of the International Mineralogical Association, July 1986. 36 pp.
Coleman RG. 1996. New Idria serpentinite: A land management dilemma. Environmental and Engineering Geoscience 2:9-22.
Dynamac Corporation Environmental Services. 1998. Geomorphic field evaluation of serpentinite soil barrens, Clear Creek Management Area. Dynamac Corporation Environmental Services, Rockville, Maryland, USA. 81 pp.
Eckel EB and WB Myers. 1946. Quicksilver deposits of the New Idria district, San Benito and Fresno Counties, California. California Journal of Mines and Geology 42:81-124.
Evans J, Klein A, Taylor J, Keeler-Wolf T, and D Hickson. 2006. Vegetation classification, descriptions, and mapping of the Clear Creek Management Area, Joaquin Ridge, and the environs in San Benito and western Fresno counties, California. California Native Plant Society and California Department of Fish and Game, Sacramento, California. 273 pp.
Gervais BR and AM Shapiro. 1999. Distribution of edaphic-endemic butterflies in the Sierra Nevada of California. Global Ecology and Biogeography 8:151-162.
Griffin JR. 1974. A strange pine and cedar forest in San Benito county. Fremontia 2:11-15.
Harris TB, Olday FC, and N Rajakaruna. 2007. Lichens of Pine Hill, a peridotite outcrop in eastern North America. Rhodora 109:430-447.
Harrison S and AM Shapiro. 1988. Butterflies of northern California serpentines. Fremontia 15:17-20.
Isgrig D. 1969. Soil survey, San Benito county, California. United States Department of Agriculture, Soil Conservation Service. 200 pp.
Johnson NK and C Cicero. 1985. The breeding avifauna of San Benito Mountain, California: Evidence for change over one-half century. Western Birds 16:1-23.
Kruckeberg AR. 1984. California serpentines: Flora, vegetation, geology, soils, and management problems. University of California Press, Berkeley, California, USA. 180 pp.
Laird J and AL Albee. 1972. Chemical composition and physical, optical, and structural properties of benitoite, neptunite, and joaquinite. American Mineralogist 57:85-102.
Ledig FT. 2000. Founder effects and the genetic structure of Coulter pine. Journal of Heredity 91:307-315.

Libby WJ. 1958. The backcross hybrid Jeffrey x (Jeffrey x Coulter) pine. Journal of Forestry 56:840-842.
Louderback GD 1907 Benitoite, a new California gem mineral. University of California Publication, Bulletin of the Department of Geology 5:149-153.
Louderback GD 1909 Benitoite, its paragenesis and mode of occurrence. University of California Publication, Bulletin of the Department of Geology 5:331-380.
Matthews RA. 1961. Geology of the Butler Estate Chromite Mine. California Division of Mines and Geology. Special Report 71. 20 pp.
Merritt PC. 1962. California asbestos goes to market. Mining Engineering 14:57-60.
Mumpton FA and CS Thompson. 1975. Mineralogy and origin of the Coalinga asbestos deposit. Clays and Clay Minerals 23:131-143.
Pabst A. 1951. Minerals of the serpentine area in San Benito county. California Rocks & Minerals 26:478-485.
PTI Environmental Services. 1992. Human health risk assessment for the Clear Creek Watershed, San Benito River Basin, Central California, prepared for the U.S. Department of the Interior, Bureau of Land Management under contract C871-08.
Rajakaruna N, Knudsen K, Fryday AM, O'Dell RE, Pope N, Olday FC, and S Woolhouse (in press) Influence of rock type on saxicolous lichen communities of the New Idria serpentinite mass, San Benito County, California, USA. The Lichenologist.
Reinsch T and K Arroues. 2010. Chemical characteristics of serpentinitic soils of Clear Creek Management Area, California. Poster. ASA, CSSA, and SSSA 2010 International Annual Meetings. Oct. 31 – Nov. 4. Long Beach, California, USA.
Robichaud PR and RE Brown. 2002. Silt fences: An economical technique for measuring hillslope erosion. General Technical Report RMRS-GTR-94. USDA Forest Service, Rock Mountain Research Station, Ft. Collins, Colorado, USA. 24 pp.
Schwartz MD and MA Wall. 2001. *Melanotrichus boydi*, a new species of plant bug (Heteroptera: Miridae: Orthotylini) monophagic on the nickel hyperaccumulator *Streptanthus polygaloides* (Brassicaceae). Pan-Pacific Entomologist 77:39-44.
Sirois L, Lutzoni F, and MM Grandtner. 1988. The lichens of the Mount Albert serpentine and amphibolite plateau, Gaspé peninsula, Quebec. Canadian Journal of Botany 66:851-862.
Sloane NH. 1914. Resources and plan of operation of Monterey National Forest. United States Department of Agriculture. 381 pp.
United States Environmental Protection Agency (EPA). 2008. Clear Creek Management Area Asbestos Exposure and Human Health Risk Assessment. San Francisco, California, USA.
United States Environmental Protection Agency (EPA). 1991. Record of decision for the Atlas Mine Area Operable Unit of the Atlas Asbestos Mine Superfund Site. San Francisco, California, USA.
United States Fish and Wildlife Service (FWS). 2005. Biological Opinion for the Clear Creek Management Area Resource Management Plan Amendment and Final Environmental Impact Statement, San Benito and Fresno Counties, California (1-8-05-F-20). September 2, 2005.
Van Baalen MR. 1995. The New Idria serpentinite. PhD dissertation. Harvard University, Cambridge, Massachusetts, USA. 482 pp.
Zobel BJ. 1951a. The natural hybrid between Coulter and Jeffrey pines. PhD. Dissertation. University of California, Berkeley, California, USA. 114 pp.
Zobel BJ. 1951b. The natural hybrid between Coulter and Jeffrey pines. Evolution 5:405-413.

Appendix IV - *Camissonia benitensis* Compliance Monitoring & Adaptive Management Plan

1.0 Introduction

San Benito evening primrose (*Camissonia benitensis*) is a federally-listed Threatened plant species which occurs on Bureau of Land Management (BLM) public lands in the Clear Creek Management Area (CCMA). The Endangered Species Act requires that all Federal agencies ensure that management actions do not jeopardize the continued existence of any threatened or endangered species.

San Benito evening primrose is a strict serpentine (ultramafic rock) endemic found on serpentine alluvial stream terraces and on the margins of tectonic serpentine masses and serpentine landslides (serpentine geologic transition zone) in southern San Benito county, western Fresno county, and eastern Monterey county, California (BLM 2010). Only 10 suboccurrences of San Benito evening primrose were known at the time of federal listing in 1985 (USFWS 1985; **Figure IV-1**). The primary threat to the species identified at listing was Off-Highway Vehicle (OHV) impacts. Additional identified threats included other recreational activities (camping and rockhounding/mineral prospecting), road construction and maintenance, and gravel mining. Most of the suboccurrences known at the time of listing were located in the vicinity of heavily-impacted OHV areas (staging areas) on serpentine alluvial stream terraces in Clear Creek Canyon within Clear Creek Management Area (CCMA; Kiguchi 1985). Serpentine alluvial stream terraces were believed to be the only habitat type for the species. By 2009, all serpentine alluvial stream terrace habitat in the Clear Creek Management Area had been exhaustively surveyed for San Benito evening primrose, resulting in a total of 64 known natural suboccurrences (BLM 2009; **Figure IV-1**). Five of the 64 suboccurrences were (re)introductions made in 1990 and 1991 (Taylor 1993). Additionally, another six suboccurrences were introduced (new introductions) in 2008 for a total of 70 suboccurrences (BLM 2009). Many miles of fence and pipe barriers had been constructed to prevent OHV impacts to San Benito evening primrose and an OHV route designation (BLM 2006) further reduced OHV impacts.

The discovery that San Benito evening primrose also grows on serpentine geologic transition zone habitat (edges of tectonic serpentine masses and serpentine landslides; uplands) in 2010, followed by intensive survey of that habitat type on both BLM and private land resulted in the discovery of another 295 natural suboccurrences for a total of 361 suboccurrences known by 2011 (5x increase from 2009; BLM 2010; **Figure IV-1)**. New suboccurrence finds on private lands doubled the known species range (**Figure IV-2**). Of the 361 total suboccurrences known, 196 suboccurrences are located within CCMA and 165 suboccurrences are located outside of CCMA (**Table IV-1**). Most of the newly discovered suboccurrences do not appear to have experienced any significant historic or recent human impacts, as a result of their location (largely outside of most areas intensively used by OHVs) and landscape position (often steep and brushy areas).

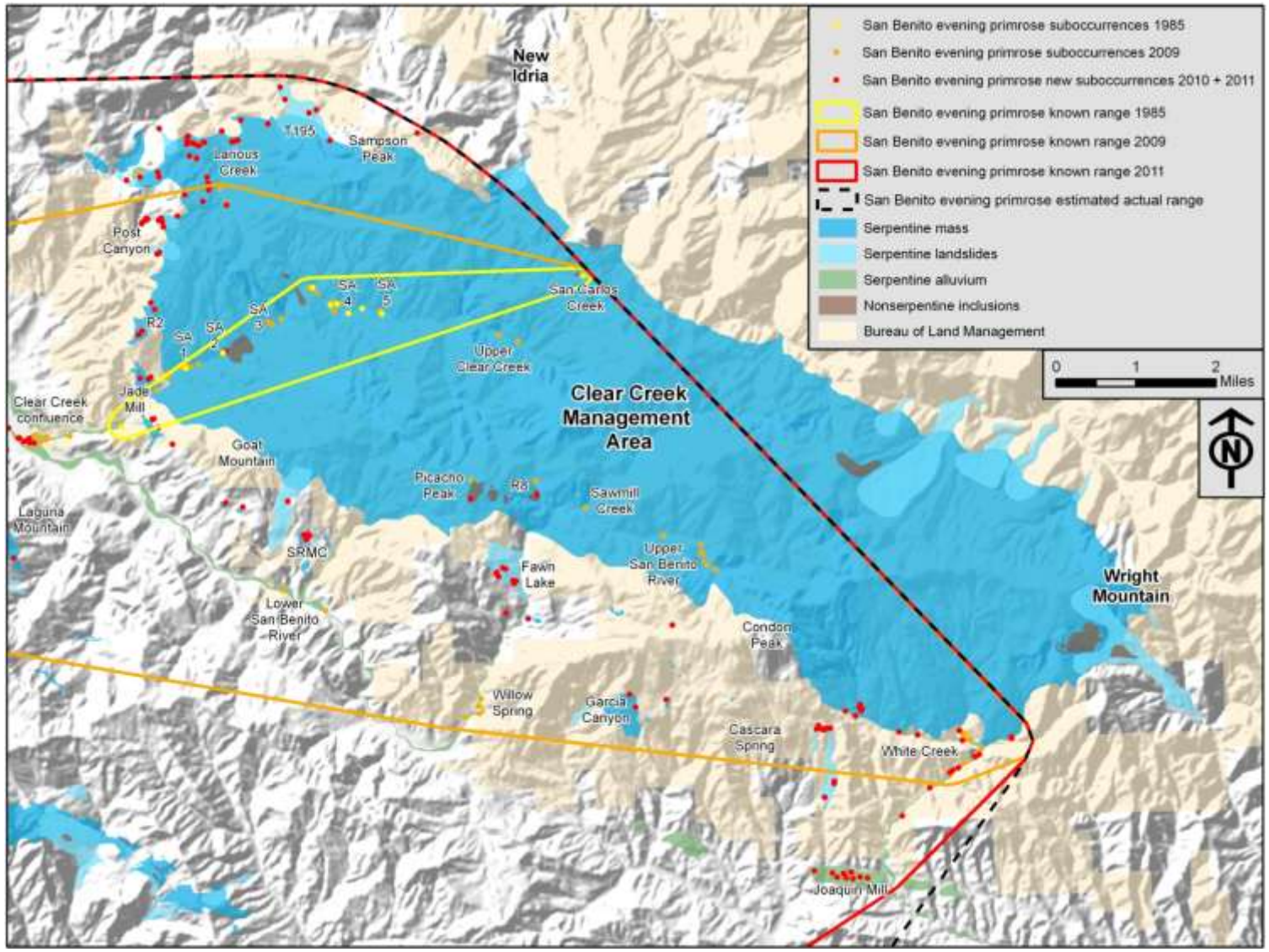


Figure IV-1 Suboccurrences of San Benito evening primrose within and in the vicinity of Clear Creek Management Area.

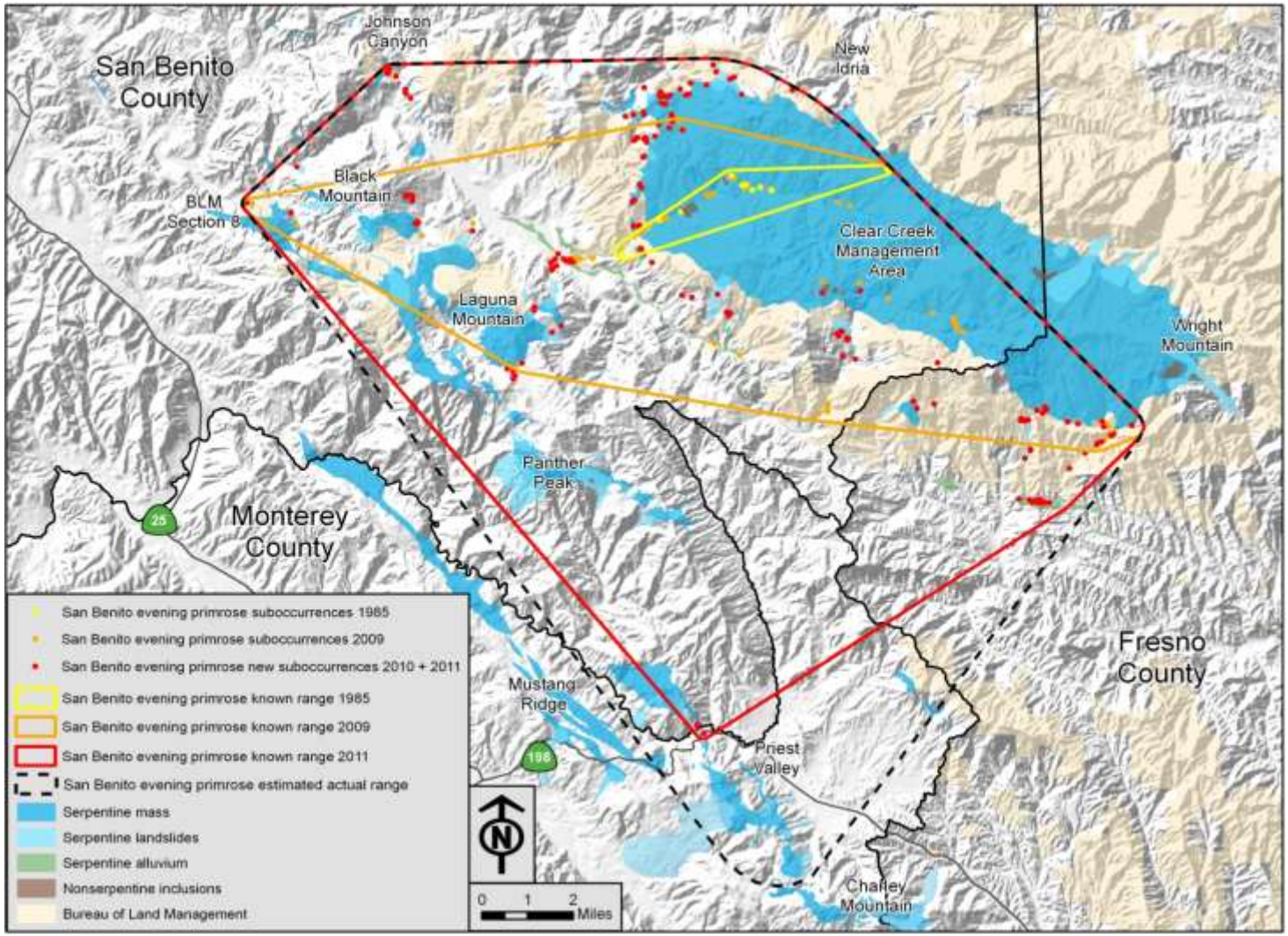


Figure IV-2 Previously known ranges, current known range, and estimated actual range of San Benito evening primrose. Estimated actual range is based upon field surveys of potential habitat.

Table IV-1 Number of currently known San Benito evening primrose suboccurrences, habitat type, location, and land ownership.

	Habitat type					Location				Land ownership	
	Alluvial terrace	Geologic transition	Terrace & transition	Rock outcrop Serpentine	Rock outcrop Shale	CCMA Inside	CCMA Outside	Serpentine ACEC Inside	Serpentine ACEC Outside	BLM	Private
# suboccurrences	36	276	42	2	5	196	165	135	226	157	204

The San Benito evening primrose Compliance Monitoring and Adaptive Management Plan will improve the BLM's ability to manage CCMA in a manner that promotes the long-term conservation of San Benito evening primrose and makes efficient use of staffing and funding. This document outlines specific actions and refines the protocol to be used in monitoring San Benito evening primrose occupied and potential habitat areas within CCMA. This monitoring program documents disturbance to San Benito evening primrose habitat by tracking the type and intensity of threats to the species and its habitat to assess the status of the species over time and determine if adaptive management is needed.

This monitoring program builds upon existing BLM documents and strategies that have established protocol for compliance monitoring and FWS Biological Opinions for San Benito evening primrose within CCMA (BLM 1997a, 1997b, 2003, 2005, 2006; USFWS 1997, 2005).

2.0 Definitions

2.1 Population Terminology

Population: Traditionally, a plant population has been defined as a group of individuals of the same species occupying an area of habitat small enough to permit interbreeding among all members of the group (Barbour et al. 1998; Silvertown and Charlesworth 2001). This can be referred to as the biological population definition. Due to the difficulty in circumscribing a biological population, biologists have more recently departed from the traditional biological population definition and now define a population without the criteria of interbreeding. This definition of a population is particularly applicable to San Benito evening primrose since the species is almost exclusively self-pollinating (Taylor 1990). California Natural Diversity Database dispensed of the term "population" and now uses the term "occurrence" instead (as defined below). The terms "occurrence" and "suboccurrence", therefore, are used to describe groups of populations and a single population, respectively, of San Benito evening primrose. Occurrence: Equivalent to a group of populations. An occurrence is comprised of more than one suboccurrence of San Benito evening primrose that are all located within ¼ mile of each other.

Suboccurrence: Equivalent to a single population. A suboccurrence is a group of San Benito evening primrose plants that occur within a specific localized area differing noticeably in habitat characteristics (slope, aspect) from any other group of San Benito evening primrose plants within the same occurrence. There are currently 361 known suboccurrences of San Benito evening primrose of which, 196 are located within CCMA. 186 of the 196 known suboccurrences within CCMA were monitored in 2011. Only 92 of the 196 suboccurrences within CCMA are assigned a number designating occurrence-suboccurrence relationship to other suboccurrences. The other 104 suboccurrences discovered in CCMA in 2010 and 2011 are known only by global positioning satellite (GPS) coordinates of their locations.

2.2 Habitat Terminology

Serpentine alluvial stream terrace: Alluvial terrace created by the deposition of primarily serpentine sediment, adjacent to a stream or river channel (**Figure IV-3**). Serpentine alluvial stream terraces are topographically limited to low points (valleys) as a result of their depositional setting. San Benito evening primrose typically grows on older serpentine alluvial stream terraces where there is no longer active sediment deposition or significant erosion (stable).

Figure IV-3. Serpentine alluvial stream terrace. Serpentine alluvium eroded from the New Idria serpentine mass (visible in upper right corner) was carried by White Creek (visible at far right) and deposited on the stream bank as a terrace. San Benito evening primrose grows on the serpentine alluvial stream terrace.

Serpentine geologic transition zone: Geologic boundary between serpentine and non-serpentine rocks (sedimentary or non-ultramafic, metamorphic). The boundary may exist 1) between tectonic serpentine masses and non-serpentine rocks (**Figure IV-4**), 2) between serpentine landslides originating from tectonic serpentine masses and non-serpentine rocks, or 3) between ancient (>10,000 year old) serpentine alluvial deposits (elevated on hillslopes) and non-serpentine rocks. There is no topographic position limit for serpentine geologic transition zone. It can occur in valleys, on hillslopes, or high on ridges. Vegetation type often dramatically changes at the geologic transition zone from dense chaparral to sparse chaparral or blue oak woodland. San Benito evening primrose grows on serpentine soils in open gaps of woody vegetation at the edges of tectonic serpentine masses and serpentine landslides in the serpentine geologic transition zone.

Figure IV-4. Serpentine geologic transition zone. Serpentine (blue, barren substrate) interfaces with non-serpentine rocks (supporting dense annual grassland and blue oak woodland). San Benito evening primrose grows on the barren serpentine substrate.

Occupied habitat: The area occupied by a suboccurrence. 92 suboccurrences of San Benito evening primrose are assigned a suboccurrence number with the extent of occupied habitat digitally mapped in geographic information systems (GIS). The other 104 suboccurrences have not been assigned a number and are only known only by GPS coordinates of their locations with the extent of occupied habitat mapped in GIS.

Potential habitat: Localized areas of serpentine alluvial stream terraces and serpentine geologic transition zone judged to have habitat conditions conducive to supporting San Benito evening primrose. Most potential habitat of San Benito evening primrose within CCMA and other areas within its known range has been mapped in GIS. Areas of potential habitat are generally, but not always, adjacent to occupied habitat. Conditions conducive to supporting San Benito evening primrose have been determined from observations of habitat conditions present where the species has been found. Conducive habitat conditions include: 1) serpentine soil on stream terraces (serpentine alluvial stream terrace habitat) or at the edges of tectonic serpentine masses and serpentine landslides (serpentine geologic transition zone habitat), 2) woody vegetation with open gaps, 3) presence of other common indicator companion herbaceous species to San Benito evening primrose, and 4) low density of invasive annual herbaceous plant species (Taylor 1990; USFWS 2006; BLM 2010). San Benito evening primrose has been found on two other distinct habitat types including serpentine rock outcrops (2 suboccurrences) and shale outcrops/barrens (5 suboccurrences) within- or close proximity to the New Idria serpentine mass (BLM 2010). The rock outcrops have habitat conditions similar to geologic transition zone habitat, but it is unclear what additional specific habitat conditions on rock outcrops dictate whether they are conducive to supporting San Benito evening primrose. Due to this uncertainty, no potential habitat has been mapped for serpentine rock outcrops or shale rock outcrops/barrens.

2.3 Noncompliance Terminology

Baseline: Baseline conditions noted the previous monitoring visit. The habitat conditions documented during the previous monitoring visit are the baseline for the following monitoring visit.

Non-compliance: Motorized and non-motorized trespass and unauthorized use in occupied and/or potential habitat.

Incident: A non-compliant incident is unauthorized human disturbance (impact) to habitat that is observed and is a change from the previous monitoring visit. Each visit is relative to the baseline condition from the previous monitoring visit.

Disturbance: Disturbance (impacts) to San Benito evening primrose occupied and/or potential habitat resulting from human activities. Disturbances can directly impact San Benito evening primrose by damaging plants or degrading their habitat. Motorized disturbance sources (**Table IV-2**) include, but are not limited to: automobiles (full-sized vehicle), all-terrain vehicles (ATVs; quads; four wheelers), utility vehicles (UTVs; side by sides), motorcycles (primarily dirt bikes), and tractors (tracked vehicles; caterpillars). OHV disturbances are the most common human disturbance to San Benito evening primrose at CCMA and the primary threat for which the species was listed (USFWS 1985). Non-motorized disturbance sources (**Table IV-3**) include, but are not limited to: bicycles (primarily mountain bikes) and other non-motorized vehicles, camping, rockhounding/mineral prospecting, logging/wood cutting, concentrated human foot traffic (trailing), concentrated livestock traffic (trailing), and waste (garbage) dumping. The primary habitat disturbances (immediate impacts) from single incidents of motorized and non-motorized activities are soil surface disturbance (tracks), soil subsurface disturbance (in the case of activities involving digging), and vegetation damage and/or removal. Multiple incidents of these disturbances (depending on type, intensity, and degree of localization), can result in greater chronic (long-term) habitat impacts including soil compaction, soil erosion, and areas denuded of vegetation.

Table IV-2. Motorized disturbance sources and primary habitat impacts.

Impact↓ Disturbance source→	Automobile	ATV/UTV	Motorcycle	Tractor
Soil surface (tracks)	X	X	X	X
Soil subsurface (digging)				X
Vegetation (damage/removal)	X	X	X	X

Table IV-3. Non-motorized disturbance sources and primary habitat impacts.

Disturbance source→ / Impact↓	Bicycles & other non-motorized vehicles	Camping	Rock hounding/ mineral prospecting	Logging/wood cutting	Concentrated human foot traffic (trail)	Concentrated livestock traffic (trail)	Waste dumping
Soil surface (tracks)	X	X	X	X	X	X	X*
Soil subsurface (digging)			X				
Vegetation (damage/removal)	X	X	X	X	X	X	

*material surface occupancy and/or chemical contamination

It should be noted that not all human disturbances are regarded as adverse to San Benito evening primrose. There is strong evidence that some light to moderate level of human disturbance is beneficial to San Benito evening primrose (BLM 2009). Several San Benito evening primrose suboccurrences coincide with several prehistoric (Native American) and historic (European settler) human habitation sites on serpentine alluvial stream terraces (BLM 2009). Human habitation at those sites has been judged to have been beneficial to San Benito evening primrose through the removal of woody vegetation (reduction of plant competition) and increase in soil fertility (increased organic matter content). In addition to modifying vegetation and soils to promote San Benito evening primrose, humans may have also played a role in the dispersal of the species. The seeds of San Benito evening primrose are as small as grains of sand and may be dispersed in mud stuck to humans, livestock, and vehicles. Livestock grazing may be beneficial to San Benito evening primrose by removing competing vegetation. Wildfire is beneficial to San Benito evening

primrose by removing competing vegetation (BLM 2009). Prescribed fire used by the BLM to control invasive yellow starthistle (*Centaurea solstitialis*) at the confluence of Clear Creek and San Benito River has resulted in the (re)colonization of San Benito evening primrose in that area.

3.0 Habitat and Compliance Monitoring Program

The monitoring year for San Benito evening primrose begins June 1 and ends June 1 the following year. Minimum habitat and compliance monitoring frequency will occur annually (coincident with plant counts). Monitoring frequency may be increased in response to increased visitor use and/or increased incidence of non-compliance.

3.1 Plant Counts

Plant counts will be conducted annually April – May (peak flowering). San Benito evening primrose can have large variation (up to four orders of magnitude) in the number of plants from year to year. San Benito evening primrose plants will be directly counted for each suboccurrence monitored where suboccurrences are 1000 plants in size or less. For suboccurrences 1000 plants in size or greater, if plant density is fairly even, the count for a small area can be extrapolated to the entire suboccurrence. If the distribution and density are uneven, estimates can be made based upon random plots.

3.2 Habitat Condition and Compliance Monitoring

San Benito evening primrose occupied and potential habitat monitoring will include documentation of significant human disturbances (impacts) as listed in **Table IV-2** and **IV-3**. Documentation of disturbances will include the following:

- Suboccurrence impacted (identify by suboccurrence number or GPS coordinate) and whether the disturbance occurred within occupied and/or potential habitat.
- Type (source) of disturbance.
- Intensity of disturbance. Description of the extent of the disturbance (number of tracks/trails; estimated area of disturbed soil and/or vegetation).
- Photodocumentation of the disturbance.

The BLM will respond to incidents of non-compliance with a hierarchical approach. Signs and barriers will be used in situations of low to moderate levels of noncompliance. Area closures may be enacted in situations of high levels of non-compliance (heavy, repeated impacts to numerous suboccurrences). Area closures will be determined in consultation with Ventura FWS. Any enacted closures within CCMA will be conducted in accordance with The Endangered Species Act of 1973, 43 CFR 8341.2, and 43 CFR 8341.1.

Endangered Species Act of 1973
(d) Protective Regulations.- Whenever any species is listed as a threatened species pursuant to subsection (c) of this section, the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species. The Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2) in the case of plants, with respect to endangered species; except that with respect to the taking of resident species of fish or wildlife, such, regulations shall apply in any State which has entered into a cooperative agreement pursuant to section 6(c) of this Act only to the extent that such regulations have also been adopted by such State.

43 CFR 8341.2 Special Rules
(a) Notwithstanding the consultation provisions in Sec. 8342.2(a), where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the authorized officer shall immediately close the areas affected to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. Such closures will not prevent designation in accordance with procedures in subpart 8342 of this part, but these

lands shall not be opened to the type(s) of off-road vehicle to which it was closed unless the authorized officer determines that the adverse effects have been eliminated and measures implemented to prevent recurrence.

(b) Each State director is authorized to close portions of the public lands to use by off-road vehicles, except those areas or trails which are suitable and specifically designated as open to such use pursuant to subpart 8342 of this part.

43 CFR 8364.1 Closure and Restrictions
(a) To protect persons, property, and public lands and resources, the authorized officer may issue an order to close or restrict use of designated public lands.
(b) Each order shall:
(1) Identify the public lands, roads, trails or waterways that are closed to entry or restricted as to use;
(2) Specify the uses that are restricted;
(3) Specify the period of time during which the closure or restriction shall apply;
(4) Identify those persons who are exempt from the closure or restrictions;
(5) Be posted in the local Bureau of Land Management Office having jurisdiction over the lands to which the order applies;
(6) Be posted at places near and/or within the area to which the closure or restriction applies, in such manner and location as is reasonable to bring prohibitions to the attention of users;
(7) Include a statement on the reasons for the closure; and
(c) In issuing orders pursuant to this section, the authorized officer shall publish them in the Federal Register.
(d) Any person who fails to comply with a closure or restriction order issued under this subpart may be subject to the penalties provided in Sec. 8360.0–7 of this title.

3.3 Reporting

Monitoring reports will be generated annually and submitted to the Ventura FWS. The report will summarize ongoing management to protect San Benito evening primrose suboccurrences and potential habitat on BLM land within CCMA.

Reports will include the following:

- Suboccurrence monitoring data including plant counts
- Inventory results of surveyed habitat
- Habitat restoration summary
- Recovery research summary
- Compliance monitoring record
- Description and photos of non-compliance incidents
- Recommendations for changes in management to reduce non-compliance and promote recovery of the species

4.0 Adaptive Management

The following measures can be implemented to increase protection of San Benito evening primrose habitat from unauthorized activities if compliance monitoring indicates that existing protection is insufficient to control impacts to habitat. The protection measures should be applied with respect to the specific unauthorized activity and the location where the unauthorized activity is occurring. The measures should be applied in a stepwise process.

1. **Site Monitoring** - Increase frequency of monitoring at specific suboccurrences experiencing chronic non-compliance.
2. **Signing** - Increase signing. Sign for educational and law enforcement purposes (i.e. Vegetation Study Area and Closed Area) unless vandalism is a risk.

3. **Fencing** - Continued non-compliance will determine if barrier installation (fence or pipe) is necessary. Wire fencing provides an effective, lower cost option to exclude unauthorized human activities from protected areas. This type of barrier, however, is often more susceptible to vandalism (fence cutting and damage from OHVs) than robust, steel pipe barriers.
4. **Pipe barrier** – Pipe barrier is constructed from welded segments of 2.5" diameter steel pipe. Pipe barrier installation is substantially more expensive to install than wire fencing, but its robust construction provides greater protection of sensitive areas, particularly from motorized vehicles which are capable of damaging wire fences.
5. **Closures** - Close trails, sub-watersheds, entire watersheds and larger areas, or the entire CCMA when monitoring shows continued non-compliance in San Benito evening primrose occupied and potential habitat on BLM managed lands. Closures at the sub-watershed and larger areas will be determined in consultation with the FWS to determine appropriate adaptive management actions.

5.0 Annual review with the U.S. Fish and Wildlife Service

The BLM will confer with the Ventura FWS on an annual basis to review monitoring data and what measures the BLM has taken to remedy any problems that were identified. The conference can initially be via e-mail and phone, though either party reserves the right to request an in-person meeting. If substantial disagreement arises between the agencies regarding appropriate management response to issues related to protection and conservation of San Benito evening primrose, the FWS may request that formal consultation be reinitiated.

6.0 References

Barbour MG, Burk JH, Pitts WD, Gilliam FS and MW Schwartz. 1998. Terrestrial plant ecology. 3rd edition. Benjamin-Cummings Publishing Company, Menlo Park, California, USA. 688 pp.

Bureau of Land Management. 1997a. Baseline 1996 annual report for the San Benito evening primrose (*Camissonia benitensis*) - inventory and compliance monitoring program. Prepared for the U.S. Fish and Wildlife Service, Ventura, California.

Bureau of Land Management. 1997b. Draft compliance monitoring on potential habitat polygons for San Benito evening primrose.

Bureau of Land Management. 2003. Interim Protection Strategy. The Interim Protection Strategy (IPS) was developed by the BLM and FWS as an adaptive management response to increased OHV non-compliance at CCMA. This revised Compliance Monitoring Plan (CMP) included with the Services' Biological Opinion on the Clear Creek Management Area Plan Amendment (2005) replaced the IPS and served as a component of the long-term protection plan for San Benito evening primrose.

Bureau of Land Management. 2005. OHV Compliance Monitoring for *Camissonia benitensis* within the Clear Creek Management Area - October 2005. This document was developed to update guidance on how to carry out the compliance monitoring program.

Bureau of Land Management. 2006. Clear Creek Management Area Resource Management Plan Amendment and Route Designation. Bureau of Land Management, Hollister, California, USA.

Bureau of Land Management. 2009. Annual Summary Report for the 2008 – 2009 Season
Monitoring and Status of *Camissonia benitensis* and Implementation of the 2006 Record of Decision. Bureau of Land Management, Hollister, California, USA. 50 pp.

Bureau of Land Management. 2010. Annual Summary Report for the 2009 – 2010 Season
Monitoring and Status of *Camissonia benitensis* and Implementation of the 2006 Record of Decision. Bureau of Land Management, Hollister, California, USA. 32 pp.

Kiguchi LM. 1985. Sensitive plant survey: Clear Creek Recreation Area. San Benito Mountain Natural Area. 8 pp.
Silvertown JW and D Charlesworth. 2001. Introduction to plant population biology. Wiley-Blackwell, Oxford, England, UK. 360 pp.
Taylor DW. 1990. Ecology and life history of the San Benito evening primrose. Biosystems Analysis, Inc., Santa Cruz, California, USA. 80 pp. + Appendix.
Taylor DW. 1993. Ecology and life history of the San Benito evening primrose (*Camissonia benitensis*). 1992 Final supplemental report. Biosystems Analysis, Inc., Santa Cruz, California, USA. 20 pp.

U.S. Fish and Wildlife Service. 1985. Endangered and threatened wildlife and plants; final rule. Federal Register 50:5755-5759, February 12, 1985.

U.S. Fish and Wildlife Service. 1997. Biological Opinion of the Clear Creek Management Area/Resource Management Plan Amendment and Final Environmental Impact Statement and the Proposed Administrative Site Development Plan, San Benito and Fresno Counties, California (1-8-96-F-20) (USDI SERVICE, 1997) and management of *Camissonia benitensis.*

U.S. Fish and Wildlife Service. 2005. Biological Opinion of the Clear Creek Management Area/Resource Management Plan Amendment and Final Environmental Impact Statement, San Benito and Fresno Counties (1-8-05-F-20).

U.S. Fish and Wildlife Service. 2006. Recovery Plan for *Camissonia benitensis* (San Benito Evening-Primrose). U.S. Fish and Wildlife Service, Sacramento, California, USA. ix + 97 pp.

Appendix V - Best Management Practices

The following management practices were compiled from various sources listed in the reference section. These practices are listed as methods for correcting problems related to CCMA travel management and watershed issues associated with dust suppression, hazardous materials releases, and soil loss and erosion. Many of these management practices are specific measures which will need additional study to determine how or if they effectively apply to the specific conditions in the Clear Creek Management Area.

All of these management practices would need to be monitored and evaluated to determine their overall effectiveness and protection of human health and the environment. These management practices have been grouped into the following, broad categories: watershed restoration/management, barrens restoration/management, transportation and roads, abandoned mine lands (AML) and mining activities, and recreation facilities.

A. Watershed Management & Restoration

BLM'S watershed management goals related to soil loss are based on limiting sediment production from roads, trails, and disturbed areas (hill climbs, mining areas), avoiding vegetation and stream channel disturbance, and minimizing mass movement of soil into stream channels (from steep slopes and mining areas).

The following is a list of Management Practices (MP) that have been implemented and will continue to be implemented, practices that will be further developed, and management practices that will need further evaluation and planning prior to implementation. Continued implementation of management actions related to controlling erosion and sediment yield to minimize impacts to watershed resources are generally within the capability and budget constraints of the BLM. In all cases, MPs will be identified that best address resource condition objectives and will be phased in over a period of time.

MP-1: Protection of Unstable Areas

Objective: To provide for protection of unstable areas and thereby avoid triggering mass movements of the soil mantle and resultant erosion and sedimentation.

Explanation: This management practice will help protect unstable areas by reducing or stabilizing their high erosion rates. Unstable slopes will be protected by use of fences and barriers to eliminate or channel vehicle use away from these areas, and by use of gully plugs, water diversions, etc. as needed.

MP-2: Streamside Management Zone Designation

Objective: To designate a zone along streams where prescriptions are made that will minimize the adverse effects of nearby land disturbance activities including roads, by: (1) acting as an effective filter for sediment generated by erosion from road fills and dust drift; (2) maintaining shade riparian habitat (aquatic and terrestrial), and channel stabilizing effects; (3) keeping the floodplain surface in a resistant, undisturbed condition to limit erosion by flood flows.

Explanation: Activities near streams need to be carefully designed and managed. At designated roads and stream crossings, fill and side cast material must be kept at a distance from nearby streams to minimize their impact on the critical riparian zone and on the stream itself. Factors such as stream class

channel aspect, channel stability, side-slope steepness, and slope stability are considered in determining the constraints of activities and width of stream side management zones. It is vital to stabilize till slopes before the stream side management zone is saturated with sediment. The streamside management zone is not a zone of exclusion, but a zone of closely managed activity. It is a zone which acts as an effective filter and absorptive zone for sediment, maintains shade, protects aquatic and terrestrial riparian habitats, protects channel and stream banks, and promotes flood plain stability.

MP-3: Restrict Development within the Floodplain

Objective: To avoid, where possible, the long and short-term adverse impacts to water quality associated with the occupancy and modification of floodplains.

Explanation: A floodplain analysis and evaluation will be made when sites within floodplains are being considered for structures or developments. Environmental quality, ecological effects, and individual safety and health are considered. Flood frequencies, watershed conditions, climatic and environmental factors associated with past flood events, flood flow quantities and specific flood boundaries are all evaluated.

MP-4: Specifying Riprap Composition

Objective: To minimize sediment production associated with the installation and utilization of riprap materials.

Explanation: Riprap is commonly used to armor stream banks, stream crossings, and drainage ways from the erosive forces of flowing water. Riprap must be sized and installed in such a way that it effectively resists erosive water velocities. Stone used for riprap should be free from weakly structured rock, organic material and materials of insufficient size, all of which are not resistant to stream flow and would only serve as sediment sources. Outlets of drainage facilities in erodible soils commonly require riprap for energy dissipation. The Corps of Engineers and Federal Highway Administration procedures are commonly used for designing riprap structures.

MP-5: Re-vegetation of Surface Disturbed Areas

Objective: To protect water quality by minimizing soil erosion through the stabilizing influence of vegetation.

Explanation: This is a corrective practice to stabilize the soil surface of a disturbed area. The vegetation selected will be a mix of species best suited to meet the management objectives of the area, be it wildlife, recreation, watershed, or fuels management. Endemic species (grass or browse shrubs) may be used between recently planted trees where appropriate for aesthetics, erosion prevention or wildlife needs. The factors evaluated are soil fertility, slope, aspect, soil water holding capacity, climatic variables, and suitable species selection. Re-vegetation of some disturbed areas in serpentine soils may not be feasible.

MP-6: Watershed Restoration

Objective: To improve water quality and soil stability.

Explanation: Watershed restoration is a corrective measure to: (1) repair degraded watershed conditions and restore the hydrologic balance with a vegetative cover that will maintain or improve soil stability, reduce surface runoff, increase infiltration, and reduce flood occurrence and flood damages; (2)

conserve the basic soil resource; (3) maintain and improve water availability; and (4) enhance economic, social, and scenic benefits of the watershed. Factors considered are: predicted change in water quality, downstream values, on-site productivity, threat to life and property, direct and indirect economic returns, and social and scenic benefits. Examples of watershed restoration measures are gabion structures, back filling gullies with rock, and constructing water diversions.

MP-7: Erosion Control Structure Maintenance

Objective: To ensure that constructed erosion control structures are stabilized and working.

Explanation: Erosion control structures are only effective when they are in good repair and stable condition. Once the erosion control structures are constructed and seeded where practicable, there is a possibility that they may not become adequately vegetated or stabilized or they may become damaged from subsequent activities. It is necessary to provide follow-up inspections and structural maintenance in order to avoid these problems and insure adequate erosion control.

MP-8: Abandoned Road and Trail Restoration and Reclamation

Objective: To improve water quality and soil stability.

Explanation: Route restoration is a corrective measure to: (1) repair degraded route conditions and restore the hydrologic balance with a vegetative cover that will maintain or improve soil stability, reduce surface runoff, increase infiltration, and reduce flood occurrence and flood damages; (2) conserve the basic soil resource; (3) maintain and improve water availability; and (4) enhance economic, social, and scenic benefits of the watershed. Factors considered are: predicted change in water quality, downstream values, on-site productivity, threat to life and property, direct and indirect economic returns, and social and scenic benefits. Examples of route restoration measures are soil de-compaction, vertical and horizontal mulching, transplanting and re-seeding vegetation, re-establishing natural drainage features and utilization of temporary water management features.

B. Barren Areas Management & Restoration

The purpose of this section is to present sediment and erosion control BMPs that are potentially applicable for serpentine barrens in CCMA. Due to the variable topography, sub-climates, soil types, and vegetation), these BMPs will be implemented, as feasible, based on budgetary and technical constraints. BLM will identify the most effective BMPs and designs in order to maintain or restore other serpentine barrens with similar features in the Clear Creek Management Area.

MP-9: Silt Fences

Objective: A silt fence consists of a geotextile fabric attached to supporting poles, which is used to intercept, reduce velocity, and filter surface runoff.

Explanation: Silt fences are effective in areas where sheet flow occurs for example, at lower end of active play areas, particularly at the interface between a play area and a vegetation buffer; base of slopes; and along streams. Silt fences provide retention of runoff sediments, decrease runoff flow velocity and energy, protect downslope vegetation from sedimentation and wash-out, and provide visual indication of play area lower boundary. Installation does not require construction equipment or skilled labor and is low cost.

MP-10: Erosion Control Blankets

Objective: Erosion control blankets are mats made of synthetic or natural material, or a combination of the two, which are stapled to the soil on steep slopes to control erosion and promote the establishment of vegetation.

Explanation: The use of erosion control blankets is limited to narrow strips adjacent to the lateral boundaries of vegetated areas located downgradient of active OHV use areas. In order for the blankets to be effective, the soil over which they are installed should be of sufficient quality to support vegetation growth. The soil surface must be relatively smooth, without rock, deep depressions, or debris. The blankets may be seeded to improve the vegetation establishment process. This MP may be combined with the use of silt fences, which are described earlier in this section. A silt fence may be installed upgradient of a vegetated area and extended laterally to protect the erosion protection blanket strips. Benefits and advantages of erosion control blankets include: effective protection of soils on highly erodible slopes: they absorb and hold moisture near the soil surface; promote vegetation establishment; may be installed on steep slopes; and they do not require construction equipment or skilled labor.

MP-11: Rock Backfilling of Gullies

Objective: Filling gullies with loose angular rock prevents further deterioration from water erosion.

Explanation: This practice is used primarily in naturally incised drainage channels that concentrate flow and significantly contribute to sediment generation and transport. This method may be combined with the check dam application where lower, more accessible sections of a gully may be backfilled with rock and the check dams would be constructed at higher sections of the gully. Benefits of rock backfilling include: a decrease in runoff flow velocity and energy; retention of runoff sediment which, over time, may clog the void spaces and "heal" the gully; and maintenance can be minimal with proper construction.

MP-12: Check Dams

Objective: Check dams decrease runoff flow velocity and energy and provide retention and settling of runoff sediments.

Explanation: Check dams are small structures made of logs, stone, or silt fence that are constructed across a gully or ephemeral stream in order to lower the speed, retain sediments, and diminish the erosion potential of concentrated flows. Installation does not require construction equipment or skilled labor and is low cost.

MP-13: Interceptor Dyke and Swale

Objective: Interceptor dykes and swales are used to decrease runoff flow energy, protect downslope vegetation from sedimentation and wash-out, and provide visual indication of play area lower boundary.

Explanation: Dykes are ridges of compacted soil and swales are excavated depressions. A dyke is constructed adjacent and downslope of the swale from materials excavated for the construction of the swale. In most cases the swale is stabilized with riprap. Dyke and swale systems intercept overland flow and convert it into concentrated flow with lower, non-erosive velocity. The diverted flow is discharged to a suitable outlet. Dykes differ from silt fences in that it intercepts and diverts all runoff from upload areas, whereas, silt fences allow runoff to filter though the fence and reach lower areas.

MP-14: Sediment Basins

Objective: Sediment basins provide retention of runoff sediments up to 60 to 70%, decrease runoff flow velocity and energy, and protect downslope vegetation from sedimentation and wash-out.

Explanation: A sediment basin is a pond created by constructing a dam across a drainage way, and is designed to detain runoff in order to allow suspended sediments to settle. The pond is provided with a riser connected to a discharge pipe, which ends downgradient of the dam. The pipe is placed perpendicular to and at the base of the water flow. In the pond, water accumulated until its level exceeds the height of the riser and the excess water discharges though the pipe to the downgradient outlet. The basin volume below the top of the riser is the sediment storage zone. The dam should be constructed of materials less permeable than gravel and clean sand. Local materials such as silty sand, clayey sand, and silt, are acceptable if they are free of debris. The storage volume may be increased by evacuation the area in from of the dam, and excavated materials may be used for the construction of the dam. The structure is provided with an emergency spillway to prevent water from flowing over the dam in flood conditions. The ratio between the basin length and width should be between 2:1 and 9:1.

MP-15: Rock Filter

Objective: Rock filters provide retention of runoff sediments, decrease runoff flow velocity and energy, and create physical boundaries for OHV's.

Explanation: A rock filter consists of a berm of crushed rock (size 1.5 to 3 inches), wrapped in poultry wire (one inch diameter hexagonal mesh, galvanized 20 gauge), and placed parallel to topographic contour lines on a horizontal surface at the toe of a slope. The purpose of the rock filter is to intercept sediment laden runoff from disturbed areas of the site, reduce flow velocity, promote sedimentation, and release the water as sheet flow. Rock filters are low cost and require low maintenance.

MP-16: Gabion Mattresses

Objective: To provide retention of runoff sediments, decrease runoff flow velocity and energy, and create a physical boundary for OHV's.

Explanation: A gabion mattress is a wire-mesh box filled with crushed rock. Typical mattress dimensions are: Height – six to nine inches; length – nine to twelve feet; and width – six feet. The purpose of gabion mattresses similar to that of the filter rock in which sediment laden runoff is intercepted from disturbed areas of the site, flow velocity is reduced sedimentation is promoted, and water is released as sheet flow. The main differences between mattresses and filter rock are: gabion mattresses may be placed on the slope before and after the slope break at the toe; gabion mattresses are more resilient; and mattresses are wider, resulting in better sediment trapping efficiency.

C. Transportation & Roads

MP-17: Dust Mitigation Measures

Objective: Reduction of Chrysotile Emissions on Unpaved Roads and Trails

Explanation: Airborne chrysotile dust would attempt to be controlled through various mitigating treatments. Treatments would potentially range from base rock, frequent application of water, Lignosulfonate, Calcium chloride, petroleum products, liquid copolymers and synthetic organic soil binding fluid. A variety of suppliers are available. Efficacy would need to be established through field

testing. Reapplication and maintenance schedules would be established through testing using manufacturers' recommendation as baseline. Fugitive airborne dust and sloughing may increase application to subjective intervals.

MP-18: Stream Course Protection

Objective: (1) To protect the natural flow of streams, (2) to provide unobstructed passage of storm flows, (3) to reduce sediment and other pollutants from entering streams, and (4) to restore the natural course of any stream as soon as practicable if the stream is diverted as a result of management activities.

Explanation: The following points are fundamental to protecting streams and stream courses:

a. Vehicles should not operate within stream side management zones except where trails and roads cross the stream channel.

b. Water bars and other erosion control structures will be located so as to prevent water and sediment from being channeled into stream courses and to dissipate concentrated flows.

c. Material resulting from temporary road and ORV trail stream course crossing should be removed and stream banks restored and protected to the extent practicable.

MP-19: Road Stream Crossings

Objective: To ensure that roads do not unduly damage streams or disturb channels.

Explanation: Culverts or other means are necessary on roads (temporary, semi-permanent, or permanent) at all locations where it is necessary to cross designated streams. Alternate means of crossing stream courses may include: rock fills, hardened fords (using such features as rocked approaches) and low water crossings. Most (if not all) crossings of perennial streams should be approved by an inter-disciplinary team. Such facilities should be designed to provide for unobstructed flows and to minimize damages to stream courses. The number of crossings should be kept to the minimum needs for access. Channel crossings should be as perpendicular to stream courses as possible. Stream bank excavation should be kept to the minimum needed for use of the crossings, and entry and exit ramps may need to be rocked. Fords and turnpike crossings hardened with washed rock or landing mats are sometimes an acceptable alternative depending upon hydrological considerations.

MP-20: Road Slope Design

Objective: To reduce sedimentation by: (1) minimizing erosion from road slopes, and (2) minimizing the chances for slope failures along roads.

Explanation: No stabilization project can entirely prevent erosion from cut and fill slopes, but no road construction should be planned without considering stabilization needs. The first planning requirement is for an adequate soil and geologic investigation, to provide data necessary for proper cut and fill design consideration such as:

1) The proper cut and full slopes for the material;
2) The handling of surface and subsurface drainage;
3) Necessary compaction standards and surfacing needs.

A prerequisite for stabilization is to provide basic mechanical stability of the soils, using data from soils and geologic investigations to develop requirements for proper slope angles, compaction, and adequate drainage.

MP-21: Road Slope Stabilization

Objective: To improve road cut and fill slope stabilization by applying mechanical and vegetative measures.

Explanation: Few slopes are sufficiently rocky to be naturally stable without needing additional measures. In most cases mechanical, and/or vegetative measures are required. Mechanical measures include but are not limited to: erosion nets, terraces, wattling, side drains, sub-surface dewater devices, blankets, fute mats, riprap, mulch, tackifier pavement, soil seals, and gunnite. Vegetative measures include the seeding of endemic herbaceous species (grass, legumes, or browse species) or the planting of endemic brush or trees. Vegetative measures may include: fertilization, mulching (or even watering) to insure success. A combination of endemic vegetative species often produces a better result than a more simplistic treatment, e.g., grass seeding alone. (See also MP – 5).

MP-22: Dispersion of Subsurface Drainage from Cut and Fill Slopes.

Objective: To minimize the possibilities of cut or fill slope failure and the subsequent production of sediment.

Explanation: Roadways may drastically change the surface drainage characteristics of a slope. Since the angle and height of cut and fill slopes increase the risk of instability, it is often necessary to provide subsurface drainage to avoid moisture saturation necessary because of slopes, soil, aspect, and precipitation. Methods that should be used:

1) Pipe under drains
2) Horizontal drains
3) Stabilization trenches

Dispersion of collected water should be accomplished in an area capable of withstanding increased flows. On erosive soils, energy dissipaters need to be placed below pipe carrying large volumes of runoff water.

MP-23: Control of Road Drainage

Objective: (1) To minimize the erosive effects of water concentrated by road drainage features; (2) to disperse runoff from disturbances within the road clearing limits; (3) to lessen the sediment load from road areas; (4) to minimize erosion of the road prism by runoff from road surfaces and from uphill areas.

Explanation: A number of measures can be used (alone or in combination) to control the detrimental effects of road drainage. Methods used to reduce erosion may include such things as properly spaced cross drains or water bars, dips, drop basins, energy dissipaters, aprons, downspouts, gabions, debris racks, and armoring of ditches and drain inlets and outlets. Disposal of runoff can be accomplished by such means as rolling the grade; out sloping; installation of water spreading ditches; contour trenching; or adequate sized over side drains, etc. Disposal of runoff also reduces peak down stream flows and associated high water erosion and sediment transport. Sediment loads can be reduced by installing such things as sediment filters, settling ponds, and contour trenches. Soil stabilization can help reduce sedimentation by lessening erosion on borrow and waste areas, on cut and fill slopes and on road shoulders.

MP-24: Erosion Control on OHV Routes.

Objective: To protect water quality by minimizing erosion and sedimentation derived from OHV routes.

Explanation: Installation of erosion control measures may be required on OHV routes. This work may involve cross ditches and water spreading ditches. Other methods such as back-blading may be used in lieu of cross drains. Volunteer groups may also be used for constructing erosion control structure projects.

MP-25: Minimization of Sidecast Material.

Objective: To minimize sediment production originating from material sidecast during road construction or maintenance.

Explanation: Unconsolidated side-cast material is very difficult to stabilize and often such material is susceptible to erosion and / or mass instability. Sidecasting of un-compacted material should be permitted only at locations designated through interdisciplinary input, and shown in the plans. In some areas especially those slopes over 60 percent, end hauling may be the only acceptable alternative to sidecasting even though the costs are high and end-haul equipment may need certain minimum widths in which to work. Waste areas should be located where excess materials can be deposited and stabilized. During road maintenance operations, care should be taken to eliminate the deposition of sidecast material onto stabilized slopes. Disposal of slide debris should be done only at designated water areas. Personnel performing road maintenance should confine excavated or embankment material within the roadway limits and the roadway should be constructed in reasonably close conformity with the lines, grades, and dimensions designated on the ground. They should also remove materials deposited outside the roadway. All materials should be incorporated in the planned work. Disposal of excess excavation which develops due to miscalculation or a specific design change should be disposed of in a specified manner and at a specified location.

MP-26: Maintenance of Roads

Objective: To maintain roads in a manner which provides for water quality protection by minimizing rutting, failures, sidecasting, and blockage of drainage facilities – all of which can cause sedimentation and erosion.

Explanation: Roads normally deteriorate because of use and weather impacts. This deterioration can be minimized through adequate maintenance and /or restriction of use. All system roads should be maintained to provide the basic custodial care required to protect the road investment and to see that damage to adjacent land and resources is held to a minimum. This level of maintenance often requires an annual inspection to determine what work, if any is needed to keep drainage functional and the road stable. This level is the normal prescription for roads that are closed or seasonally closed to traffic. As a minimum measure, maintenance must protect drainage facilities and runoff patterns. Higher levels of maintenance may be chosen to reflect greater use or resource administrative needs. Additional maintenance measures could include resurfacing, out sloping, clearing debris from dips and cross drains, armoring of ditches and spot rocking.

MP-27: Control of Road Use During Wet Periods

Objective: (1) To reduce road surface disturbance and rutting of roads; and (2) to lessen sediment washing from disturbed road surfaces.

Explanation: The use of many unimproved and semi-improved roads during wet weather often results in rutting and churning of the road surfaces. Run off from such disturbed road surfaces often carries a high sediment load. The damage/maintenance cycle for roads that are frequently used in winter can create a disturbed road surface that is a continuing sediment source. Roads that are used during wet periods should have a stable surface and/or sufficient drainage to allow such use with a minimum of resource impact. Rocking, oil, paving, and armoring are measures that may be necessary to protect the road surface and reduce material loss. Drainage should be maintained to prevent water from standing on the road surface or running down the road creating rills and gullies in the road surface.

D. Abandoned Mine Lands & Mining Related Activities

MP-28: Regulation of Streamside Gravel Borrow Areas

Objective: To limit channel disturbances and sediment production associated with gravel source development.

Explanation: Materials deposited along channel sections during storm runoff often provide an inexpensive source of gravel. Because of easy access this gravel is often in demand; with adequate planning, it can often be removed with minimal impact on water resources. Under some circumstances, gravel removal may alter stream flow characteristics and consequently affect stream channel stability and create a new sediment source. Borrowing should be limited to gravel bars above the water line which is normal for the period of excavation. If the borrow area is subject to periodic flooding, some leveling, shaping, or other special drainage features should be provided. Excavation should not take place below the water table unless sediment basins are built to contain or catch the resulting sediment. Sediment basins should not be subject to washouts. If excess sediment accumulates in basins, excavators should be required to clean the basin and deposit removed sediment in approved sites. Serpentine areas should not be used as a gravel source for use outside of the serpentine area.

MP-29: Restoration of Borrow Pits, Quarries, and Mining Operations

Objectives: To minimize sediment production from borrow pits, quarry sites and mining operations.

Explanation: Borrow pits, quarries, and mining operations are often susceptible to erosion due to steel side slopes, lack of vegetation, and/or their proximity to water courses. Whenever necessary, prior excavation of the site, top soil should be removed and stockpiled for surface dressing in the post operation rehabilitation period. Once excavation has been completed on all or part of the area, the sides will be sloped and graded and the general pit area smoothed and stabilized. Oversize material, if left in the pit or quarry, should be evenly distributed. Finer materials should be spread over the bottom of the pit prior to spreading stockpiled or imported top soil. Seeding and mulching may be required and sediment basins should also be considered. Access roads to the site should be ripped, drained, blocked to traffic, and seeded unless other treatment is required by the design.

MP-30: Environmental Health and Safety Hazard Awareness

Objective: Improve the level of visitor awareness of environmental health and safety hazards, e.g., hazardous airborne asbestos fibers.

Explanation: The public will be encouraged through signs, pamphlets, media exposure and public contact to minimize and reduce exposure to environmental hazards.

E. Recreation Facilities

MP-31: Surface erosion Control at Facility Sites

Objective: Limit the amount of surface erosion taking place on developed sites and the amount of soil entering streams.

Explanation: On lands developed for campgrounds, parking areas or waste disposal sites much ground is cleared of vegetation. Erosion control methods need to be implemented to keep as much of the oils in place as possible and to reduce the amount of soil entering streams Some examples of erosion control methods that can be applied at a site for keeping the soil in place would be applying endemic species seed, jute matting, tackifiers, hydro mulch, paving or rocking of roads, water bars, cross drains, or retaining walls. To control the amount of soil entering streams, the natural drainage pattern of the area should not be changed. Sediment basins and sediment filters should be established to filter surface runoff. Diversion ditches and berms should be built to divert surface runoff around bare areas. Construction activities should be scheduled to avoid periods of the year when heavy runoff will occur.

MP-32: Control of Sanitation Facilities.

Objective: To protect surface and subsurface water quality from bacteria, nutrients, and chemical pollutants resulting from collection, transmission, and disposal of sewage from Bureau of Land Management facilities.

Explanation: Toilet facilities are provided at semi-developed and developed recreation sites. Sanitation facilities will be planned, located, designed, constructed, operated, inspected and maintained to minimize the possibility of water contamination. Toilet facilities should be located outside of the flood plain.

MP-33 Control of Refuse Disposal

Objective: To protect water quality from nutrients, bacteria, and chemicals associated with solid waste disposal.

Explanation: Users of public land recreation facilities are encouraged cooperate in the proper disposal of garbage and trash. Receptacles are provided at most semi-developed sites. Garbage and trash must be packed out by those who use dispersed areas. The final disposal of collected garbage will be at a proper designated and operated sanitary landfill. The land fill site will be located where groundwater and surface waters are at safe distances as prescribed by State or local Health Board regulations.

Appendix VI - Wild & Scenic River Inventory

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, and is intended to balance this development by ensuring that certain rivers and streams remain in their free-flowing condition. The 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, No.173, September 7, 1982 and in 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 Interior if 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:

1. Determine what rivers or river segments are eligible for NWSRS designation;
2. Determine the potential classification of eligible river segments as wild, scenic, recreational or any combination thereof; and
3. Conduct a suitability study to determine if the river segments are suitable for designation as components of the NWSRS.

This report documents all three steps of the process for the streams in the planning area.

Eligibility of Planning Area Rivers & Streams

Identification

A variety of sources were reviewed to identify waterways which could have potential for wild and scenic river designation. They include the Nationwide Rivers Inventory List, the Outstanding Rivers List compiled by American Rivers, Inc., river segments identified by state or local government, river segments identified by the public during formulation of the CCMA RMP/EIS, 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."
Eleven stream segments totaling 21 miles located on or crossing BLM public lands were identified for review. These streams segments are identified on Map 7 in Appendix I and are listed in Table 1 below.

Eligibility Determination

Each identified river segment was evaluated to determine whether it is eligible for inclusion in the NWSRS. To be eligible, a river segment must be "free flowing" and must possess at least one "outstandingly remarkable value" (ORV). These ORV's include:

1) Scenic,
2) Recreational,
3) Geological,
4) Fish,
5) Wildlife,
6) Historical,
7) Cultural,
8) Ecological,
9) Riparian,
10) Botanical,
11) Hydrological, and
12) Scientific values

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:

1) Be located in the river or on its immediate shorelands (generally within ¼ mile on either side of the river);
2) Contribute substantially to the functioning of the river ecosystem; and/or
3) 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 outstandingly remarkable value(s) identified within the segment.

Table 1 summarizes the eligibility evaluation of all identified river segments. The table includes information on the length of stream segments managed by BLM, free-flowing status, and outstandingly remarkable value(s) of each eligible segment, if applicable. Table 1 also gives a description of each eligible river segment's location on BLM Surface Management (SM) maps.

Table 1: Wild & Scenic River Inventory

River Name/Segment	Reason Considered (1)	BLM Length (mi.)	Segment/Reach Identification	Free Flowing	ORV (2)	Eligibility
Picacho Creek	C	2.0	COALINGA SM, T18S., R12E., SEC 19, 30 T18S., R11E., SEC 25	Y	C,H	Eligible
White Creek	C	2.8	COALINGA SM, T19S., R13E., SEC 4, 8, 9, 17	Y	F,G	Eligible
Larious Creek	C	2.5	COALINGA SM, T17S., R11E., SEC 26, 35, 36	Y	F,G	Eligible
East Fork of San Carlos Creek	C	1.4	COALINGA SM, T18S., R12E., SEC 2, T17S., R12E., SEC 22, 26, 35	Y	D	Eligible
San Carlos Creek	C	1.0	COALINGA SM, T18S., R12E., SEC 4, 5	Y	D,F	Eligible
San Benito River (1)	C	0.8	COALINGA SM, T18S., R12E., SEC 32, 5	Y	B,D,H	Eligible
San Benito River (2)	C	0.5	COALINGA SM, T18S., R12E. SEC 25, 26	Y	B,D,H	Eligible
San Benito River (3)	C	0.3	COALINGA SM., T17S., R10E. SEC 16, 17	Y	B,D,H	Eligible
Cane Canyon	C	1.3	COALINGA SM, T17S., R11E., SEC 30, 31	Y	A	Non-eligible
Cantua Creek	D	3.8	COALINGA SM, T18S,R12E, Sec 1, 12, 13, 24 T18S, R13E, Sec 5,6	Y	B, C	Elegible
Clear Creek and Tributaries	C	7.0	COALINGA SM, T18S., R12E., SEC 8, 9, 17 T18S., R11E., SEC 1, 11, 12, 15, 16	Y	B - H	Eligible
Sawmill Creek	C	1.5	COALINGA SM, T18S., R12E., SEC 1, 4, 15, 22	Y	E,F,H	Eligible

Note: SM = BLM Surface Management Map

Reason Considered (1)
A – National Rivers Inventory
B – 1988 Outstanding Rivers List, American Rivers, Inc.
C – Segment in Hollister Field Office riparian database
D – Other

Outstanding Remarkable Value (2)
A – Non-existent
B – Scenic
C – Recreational
E – Fish & Wildlife
D – Geological
F – Historical
G – Cultural
H – Other (including Ecological)

Suitability of Hollister Field Office Stream Segments

All river segments identified on Map 7 in Appendix I and displayed in Table 1 (above) were found to be eligible for inclusion into the NWSRS.

Section 4(a) of the Wild and Scenic River Act mandates that all rivers found eligible as potential additions to the NWSRS be studied as to their suitability for such a 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 system, the current 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 study is designed to answer these questions:

- Should the river's free–flowing character, water quality, and outstandingly remarkable values (ORVs) 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 ORVs be protected through designation? Is it the best method for protecting the river corridor?
- Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

Pursuant to Sections 4(a) and 5(c) of the Wild and Scenic Rivers Act, the following factors would be considered and evaluated as a basis for the suitability determination for each river (as described further, below);

a. Characteristics that do or do not make the area a worthy addition to the NWSRS;
b. 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.
c. 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.
d. The federal agency that will administer the area should it be added to the NWSRS.
e. 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.
f. 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.
g. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development;
h. Federal, public, state, local, or other interests in designation or non-designation of the river, including the extent to which the administration of the river, including the cost thereof, may be shared by state, local, or other agencies and individuals. Support or opposition to the designation.
i. The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.
j. The contribution to river system or basin integrity.
k. The ability of BLM to manage the river segments under designation, or ability to protect the river area other than Wild and Scenic designation.

1. Characteristics that Do or Do Not Make the River Segments Worthy Additions to the NWSRS

Stream segments in the Planning Area are located within the California Coast Ranges of the Pacific Border Physiographic Province. This province was used as a basis to determine if the study segments possess characteristics of at least regional significance that would make them worthy additions to the NWSRS. The Pacific Border province contains the highest rainfall and density of streams in California. Also, many of these streams provide habitat for anadromous fisheries.

The San Francisco Bay and Central Coast portion of the Coast Ranges are considered a distinct hydrological area because precipitation in this region is generally about 50% of that in the northern part of the province and snowmelt influences are insignificant. The tectonics associated with the San Andreas Fault system have influenced the orientation and location of the major river valleys. Sediment yields are high because of high-intensity rainfall, high rates of uplift, and unstable rocks. These small steep watersheds have short lag times and high peak runoffs, and rivers often flood during winter storms.

During this inventory, BLM identified 15 designated National Wild & Scenic Rivers in California, which include portions of the North Fork and Lower American River, Big Sur River, Black Butte River, Eel River, Feather River, King River, Kern River. Klamath River, Merced River, Sespe Creek, Sisquoc River, Smith River, Trinity River, and Tuolumne River. This amounts to more than 1,800 miles of rivers and streams that are designated as part of the NWSRS in California.

Many of the eligible river segments within the CCMA have outstandingly remarkable values when considered in the context of other streams in the region. However, the BLM planning team found that all river segments provided below-average to low quality values in the statewide and national context. Therefore, they are not considered to be worthy additions to the system.

In summary, although these values meet the minimum eligibility criteria, when viewed in the context of the California Coast Ranges of the Pacific Border Physiographic Province, the study team determined that these river segments were not of a level of quality to make them worthy additions to the NWSRS.

2. Status of Land Ownership and Current Use

BLM Manual 8351.33A(2), "Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management", states "In situations where there is limited public land (shoreline and adjacent land) administered by the BLM within an identified river study area, it may be difficult to ensure those identified outstandingly remarkable values could be properly maintained and afforded adequate management protection over time. Accordingly, for those situations where the BLM is unable to protect or maintain any identified outstandingly remarkable values, or through other mechanisms (existing or potential), river segments may be determined suitable only if the entity with land use planning responsibility supports the finding and commits to assisting the BLM in protecting the identified river values. An alternative method to consider these segments is for state, local governments or private citizens to initiate efforts under section 2(a)(ii), or a joint study under section 5C of the Wild and Scenic Rivers Act." Typically, the local county governments have land use planning responsibility for the private lands on these segments. However, BLM has not approached the counties in the Planning Area regarding their support for wild and scenic designation of these segments, because the study team determined that they are not worthy additions to the system and BLM ownership of shoreline and adjacent lands is sufficient to ensure that ORVs could be properly maintained and afforded adequate management protection over time regardless of designation.

3. Potential Uses of the Land to be Enhanced or Curtailed by Designation/ Historical or Existing Rights That Could Be Adversely Affected, including Water Resources Projects.

Diversion of additional water from any of the streams during the summer low-flow period could impact outstandingly remarkable values if they are present. Wild and Scenic River designation would not impact current water rights, but could affect future diversions from the streams.

4. Federal Agency that will Administer Wild & Scenic River Segments

BLM's Hollister Field Office would administer all river segments under evaluation should they be included in the NWSRS.

5. Estimated Cost of Acquisition and Administration

There would be a minor need to acquire additional lands for Hollister Field Office river segments to be included in the National Wild & Scenic River System. A small number of private in-holdings and CCMA adjacent lands would need to be acquired (or placed under conservation easements) in stream corridors to maintain or restore their character. There would also be a modest cost associated with developing management plan(s) for all designated streams, and coordination with mining claim holders and private landowners to ensure that their activities would not cause offsite (downstream or downslope) impacts that could potentially affect river values.

6. State or local political subdivision participation in river preservation and management.

During the initial scoping period no government agencies commented or expressed interest specifically in wild and scenic river designation. However, numerous state and Federal agencies are committed to protecting river related values on the study segments. For example, the BLM and California State Parks OHV Division have funded grants to reduce sediment transport that result from watershed management activities in the CCMA. Plus, BLM is working with Regional Water Quality Control Districts and EPA to implement total maximum daily loads (TMDLs) for pollutants in San Benito River (mercury, sediment) and Clear Creek (sediment). In summary, there is already a strong established level of cooperation among Federal, state and local agencies to restore and protect the beneficial uses of streams in the region.

7. Local Zoning and Land Use Planning Adequacy in protecting the river values.

All of the stream segments included in this study are on Federal Lands administered by the BLM and local zoning would not apply. Where the segments cross private lands, most stretches are zoned for livestock, agriculture, or residential use. Livestock and agricultural uses at the scales foreseen within the study segments would not be compatible with Wild and Scenic River designation. Although the private land base in these watersheds could be developed for residences, it is likely to be low density and retain its rural character, which would be compatible with Wild and Scenic River designation.

8. Federal, public, state, local or other interests in designation/non-designation of the river. Support or Opposition to the Designation.

A description of other Federal, state and local agency involvement and interest in river management is contained under item 6 above. Residents of the San Joaquin Valley and Hernandez Valley have a long history of active interest in water conservation for flood control and agriculture or livestock use. Although no comments specific to wild and scenic river designation were received during the scoping period, many comments were received regarding protection of river related values including water quality/quantity, riparian habitat, recreation opportunities, and scenic values.

9. The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.

Wild and Scenic River designation for most of the study segments would be consistent with BLM's goals for natural and cultural resources and other agency plans and programs for the region. However, wild and scenic river management and promoting recreational activities on the CCMA river segments in the Serpentine ACEC would not be consistent with BLM and EPA goals to provide adequate protection of human health and the environment.

10. Contribution to River System or Basin Integrity

The contribution of wild and scenic river designation to river system or basin integrity in the planning area would be minimal due to the current regulations and existing efforts to conserve water resources for beneficial uses.

11. Management or Protection other than Wild and Scenic River Designation

In the case of river segments that are found not suitable for designation, the Hollister Field Office will continue to manage these streams as integral ecosystem components on BLM public lands. Management objectives in this RMP/EIS call for continued emphasis on restoration of riparian ecosystems, and other components of healthy watersheds. The preferred alternative for this plan also calls for the BLM to submit applications to the State of California for federal water reserves to protect the aquatic habitat of streams on public lands.

Recommendation and Rationale - It is recommended that none of the eligible river segments identified in this study, as defined in Table 1, be designated as components of the NWSRS. Many of the river segments under evaluation have similar land tenure status, historical uses, and potential or existing uses. The primary factor for the non-suitable determination of all river study segments in the planning area was the conclusion that they would not make worthy additions to the system. Many of these watersheds have been substantially modified through past mining and logging activities and the associated construction of roads and trails. The resulting landscapes would not broaden the representation of key ecosystems within the Wild and Scenic River system. A second factor contributed to the non-suitable recommendation for river segments in the Tucker Zone. Although these watersheds are currently somewhat undeveloped, local and regional planning may consider development in these areas to address California's growing population. The anticipated level of development is not likely to change the character of the watersheds or be incompatible with Wild and Scenic River designation. Biological resources and other watershed values for all streams will be afforded protection through state and local land use plans, the Clean Water Act, and the Endangered Species Act.

Protective Management

All river segments found to be eligible for inclusion in the NWSRS are placed under protective management by the BLM. Subject to valid existing rights, the BLM is required to protect the free-flowing characteristics and outstandingly remarkable values in the stream corridors. The BLM must also protect the corridor from modifications that would impact the tentative river classification (i.e. change the classification potential from Wild to Scenic, or from Scenic to Recreational). These management restrictions apply only to public lands. Once suitability is determined and the Record of Decision (ROD) for the RMP signed, protective management continues only for those segments found suitable for designation. This protective management remains in effect until Congress makes a final decision regarding designation, or the CCMA RMP is amended.

Appendix VII - Best Management Practices for Wind Energy Development on Public Lands

The following Best Management Practices (BMPs) will be applied to all wind energy development projects to establish environmentally sound and economically feasible mechanisms to protect and enhance natural and cultural resources. These proposed BMPs were derived from the mitigation measures discussed in Chapter 5 of the Programmatic Environmental Impact Statement (PEIS) but are limited to those measures that are applicable to all wind energy development projects (PEIS Section 5.15). These BMPs would be adopted as required elements of project-specific PODs and/or as ROW authorization stipulations. They are categorized by development activity: site monitoring and testing, development of the POD, construction, operation, and decommissioning. The proposed BMPs for development of the POD identify required elements of the POD needed to address potential impacts associated with subsequent phases of development.

Some of the proposed BMPs address issues that are not unique to wind energy development but that are more universal in nature, such as road construction and maintenance, wildlife management, hazardous materials and waste management, cultural resource management, and pesticide use and integrated pest management. For the most part, however, the level of detail provided by the BMPs is less specific than that provided in other, existing BLM program-specific mitigation guidance documents (PEIS Section 3.6.2). As required by proposed policy (PEIS Section 2.2.3.1), mitigation measures identified in or required by these existing program-specific guidance documents would be applied, as appropriate, to wind energy development projects; however, they are not discussed in detail in the programmatic BMPs proposed here.

In summary, stipulations governing specific wind energy projects would be derived from a number of sources: (1) the proposed BMPs discussed in this section; (2) other, existing and relevant program-specific mitigation guidance (PEIS Section 3.6); and (3) the mitigation measures discussed in PEIS Chapter 5. Guidelines for applying and selecting project-specific requirements include determining whether the measure would (1) ensure compliance with relevant statutory or administrative requirements, (2) minimize local impacts associated with siting and design decisions, (3) promote post-construction stabilization of impacts, (4) maximize restoration of previous habitat conditions, (5) minimize cumulative impacts, or (6) promote economically feasible development of wind energy on BLM-administered land.

Site Monitoring and Testing

1. The area disturbed by installation of meteorological towers (i.e., footprint) shall be kept to a minimum.
2. Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.
3. Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., prairie grouse) are present. Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.
4. Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.

Plan of Development Preparation

General

1. The BLM and operators shall contact appropriate agencies, property owners, and other stakeholders early in the planning process to identify potentially sensitive land uses and issues, rules that govern wind energy development locally, and land use concerns specific to the region.
2. Available information describing the environmental and sociocultural conditions in the vicinity of the proposed project shall be collected and reviewed as needed to predict potential impacts of the project.
3. The Federal Aviation Administration (FAA)-required notice of proposed construction shall be made as early as possible to identify any air safety measures that would be required.
4. To plan for efficient use of the land, necessary infrastructure requirements shall be consolidated wherever possible, and current transmission and market access shall be evaluated carefully.
5. The project shall be planned to utilize existing roads and utility corridors to the maximum extent feasible, and to minimize the number and length/size of new roads, lay-down areas, and borrow areas.
6. A monitoring program shall be developed to ensure that environmental conditions are monitored during the construction, operation, and decommissioning phases. The monitoring program requirements, including adaptive management strategies, shall be established at the project level to ensure that potential adverse impacts of wind energy development are mitigated. The monitoring program shall identify the monitoring requirements for each environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.
7. "Good housekeeping" procedures shall be developed to ensure that during operation the site will be kept clean of debris, garbage, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards.

Wildlife and Other Ecological Resources

1. Operators shall review existing information on species and habitats in the vicinity of the project area to identify potential concerns.
2. Operators shall conduct surveys for federal- and/or state-protected species and other species of concern (including special status plant and animal species) within the project area and design the project to avoid (if possible), minimize, or mitigate impacts to these resources.
3. Operators shall identify important, sensitive, or unique habitats in the vicinity of the project and design the project to avoid (if possible), minimize, or mitigate impacts to these habitats (e.g., locate the turbines, roads, and ancillary facilities in the least environmentally sensitive areas; i.e., away from riparian habitats, streams, wetlands, drainages, or critical wildlife habitats).
4. The BLM will prohibit the disturbance of any population of federal listed plant species.
5. Operators shall evaluate avian and bat use of the project area and design the project to minimize or mitigate the potential for bird and bat strikes (e.g., development shall not occur in riparian habitats and wetlands). Scientifically rigorous avian and bat use surveys shall be conducted; the amount and extent of ecological baseline data required shall be determined on a project basis.
6. Turbines shall be configured to avoid landscape features known to attract raptors, if site studies show that placing turbines there would pose a significant risk to raptors.
7. Operators shall determine the presence of bat colonies and avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies; in known migration corridors; or in known flight paths between colonies and feeding areas.

8. Operators shall determine the presence of active raptor nests (i.e., raptor nests used during the breeding season). Measures to reduce raptor use at a project site (e.g., minimize road cuts, maintain either no vegetation or nonattractive plant species around the turbines) shall be considered.
9. A habitat restoration plan shall be developed to avoid (if possible), minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revegetation, soil stabilization, and erosion reduction measures that shall be implemented to ensure that all temporary use areas are restored. The plan shall require that restoration occur as soon as possible after completion of activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
10. Procedures shall be developed to mitigate potential impacts to special status species. Such measures could include avoidance, relocation of project facilities or lay-down areas, and/or relocation of biota.
11. Facilities shall be designed to discourage their use as perching or nesting substrates by birds. For example, power lines and poles shall be configured to minimize raptor electrocutions and discourage raptor and raven nesting and perching.

Visual Resources

1. The public shall be involved and informed about the visual site design elements of the proposed wind energy facilities. Possible approaches include conducting public forums for disseminating information, offering organized tours of operating wind developments, and using computer simulation and visualization techniques in public presentations.
2. Turbine arrays and turbine design shall be integrated with the surrounding landscape. Design elements to be addressed include visual uniformity, use of tubular towers, proportion and color of turbines, nonreflective paints, and prohibition of commercial messages on turbines.
3. Other site design elements shall be integrated with the surrounding landscape. Elements to address include minimizing the profile of the ancillary structures, burial of cables, prohibition of commercial symbols, and lighting. Regarding lighting, efforts shall be made to minimize the need for and amount of lighting on ancillary structures.

Roads

1. An access road siting and management plan shall be prepared incorporating existing BLM standards regarding road design, construction, and maintenance such as those described in the BLM 9113 Manual (BLM 1985) and the *Surface Operating Standards for Oil and Gas Exploration and Development* (RMRCC 1989) (i.e., the Gold Book).

Ground Transportation

1. A transportation plan shall be developed, particularly for the transport of turbine components, main assembly cranes, and other large pieces of equipment. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. In addition, the process to be used to comply with unique state requirements and to obtain all necessary permits shall be clearly identified.
2. A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan shall incorporate measures such as informational signs, flaggers when equipment may result in blocked throughways, and traffic cones to identify any necessary changes in temporary lane configuration.

Noise

1. Proponents of a wind energy development project shall take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

Noxious Weeds and Pesticides

1. Operators shall develop a plan for control of noxious weeds and invasive species, which could occur as a result of new surface disturbance activities at the site. The plan shall address monitoring, education of personnel on weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching shall be required. If trucks and construction equipment are arriving from locations with known invasive vegetation problems, a controlled inspection and cleaning area shall be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.
2. If pesticides are used on the site, an integrated pest management plan shall be developed to ensure that applications would be conducted within the framework of BLM and DOI policies and entail only the use of EPA-registered pesticides. Pesticide use shall be limited to nonpersistent, immobile pesticides and shall only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

Cultural/Historic Resources

1. The BLM will consult with Indian Tribal governments early in the planning process to identify issues regarding the proposed wind energy development, including issues related to the presence of cultural properties, access rights, disruption to traditional cultural practices, and impacts to visual resources important to the Tribe(s).
2. The presence of archaeological sites and historic properties in the area of potential effect shall be determined on the basis of a records search of recorded sites and properties in the area and/or, depending on the extent and reliability of existing information, an archaeological survey. Archaeological sites and historic properties present in the area of potential effect shall be reviewed to determine whether they meet the criteria of eligibility for listing on the National Register of Historic Places (NRHP).
3. When any ROW application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator shall evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion as stipulations in the POD.
4. If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan (CRMP) shall be developed. This plan shall address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high-potential area. A report shall be prepared documenting these activities. The CRMP also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

Paleontological Resources

1. Operators shall determine whether paleontological resources exist in a project area on the basis of the sedimentary context of the area, a records search for past paleontological finds in the area, and/or, depending on the extent of existing information, a paleontological survey.
2. If paleontological resources are present at the site, or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan shall be developed. This plan shall include a mitigation plan for collection of the fossils; mitigation could include avoidance, removal of fossils, or monitoring. If an area exhibits a high potential but no fossils were observed during survey, monitoring by a qualified paleontologist could be required during all excavation and earthmoving in the sensitive area. A report shall be prepared documenting these activities. The paleontological resources management plan also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.

Hazardous Materials and Waste Management

1. Operators shall develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall identify all hazardous materials that would be used, stored, or transported at the site. It shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.
2. Operators shall develop a waste management plan identifying the waste streams that are expected to be generated at the site and addressing hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. This plan shall address all solid and liquid wastes that may be generated at the site.
3. Operators shall develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits are adequately stocked at all times, and procedures for making timely notifications to authorities.

Storm Water

1. Operators shall develop a storm water management plan for the site to ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion.

Human Health and Safety

1. A safety assessment shall be conducted to describe potential safety issues and the means that would be taken to mitigate them, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
2. A health and safety program shall be developed to protect both workers and the general public during construction, operation, and decommissioning of a wind energy project. Regarding occupational health and safety, the program shall identify all applicable federal and state

occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.

3. Regarding public health and safety, the health and safety program shall establish a safety zone or setback for wind turbine generators from residences and occupied buildings, roads, ROWs, and other public access areas that is sufficient to prevent accidents resulting from the operation of wind turbine generators. It shall identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It shall also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and turbine tower access doors would be locked).
4. Operators shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) shall be identified and addressed in the traffic management plan.
5. If operation of the wind turbines is expected to cause significant adverse impacts to nearby residences and occupied buildings from shadow flicker, low-frequency sound, or EMF, site-specific recommendations for addressing these concerns shall be incorporated into the project design (e.g., establishing a sufficient setback from turbines).
6. The project shall be planned to minimize electromagnetic interference (EMI) (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission [FCC] regulations. Signal strength studies shall be conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) shall be avoided.
7. The project shall be planned to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.
8. Operators shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.

Construction

General

1. All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the construction phase, as appropriate.
2. The area disturbed by construction and operation of a wind energy development project (i.e., footprint) shall be kept to a minimum.
3. The number and size/length of roads, temporary fences, lay-down areas, and borrow areas shall be minimized.
4. Topsoil from all excavations and construction activities shall be salvaged and reapplied during reclamation.
5. All areas of disturbed soil shall be reclaimed using weed-free native grasses, forbs, and shrubs. Reclamation activities shall be undertaken as early as possible on disturbed areas.

6. All electrical collector lines shall be buried in a manner that minimizes additional surface disturbance (e.g., along roads or other paths of surface disturbance). Overhead lines may be used in cases where burial of lines would result in further habitat disturbance.
7. Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and the dip angles of geologic strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used where applicable in areas of steep slopes, erodible soil, and stream channel crossings.
8. Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.

Wildlife

1. Guy wires on permanent meteorological towers shall be avoided.
2. In accordance with the habitat restoration plan, restoration shall be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
3. All construction employees shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, pets shall not be permitted on site during construction.

Visual Resources

1. Operators shall reduce visual impacts during construction by minimizing areas of surface disturbance, controlling erosion, using dust suppression techniques, and restoring exposed soils as closely as possible to their original contour and vegetation.

Roads

1. Existing roads shall be used, but only if in safe and environmentally sound locations. If new roads are necessary, they shall be designed and constructed to the appropriate standard and be no higher than necessary to accommodate their intended functions (e.g., traffic volume and weight of vehicles). Excessive grades on roads, road embankments, ditches, and drainages shall be avoided, especially in areas with erodible soils. Special construction techniques shall be used, where applicable. Abandoned roads and roads that are no longer needed shall be recontoured and revegetated.
2. Access roads and on-site roads shall be surfaced with aggregate materials, wherever appropriate.
3. Access roads shall be located to follow natural contours and minimize side hill cuts.
4. Roads shall be located away from drainage bottoms and avoid wetlands, if practicable.
5. Roads shall be designed so that changes to surface water runoff are avoided and erosion is not initiated.
6. Access roads shall be located to minimize stream crossings. All structures crossing streams shall be located and constructed so that they do not decrease channel stability or increase water velocity. Operators shall obtain all applicable federal and state permits.
7. Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

Ground Transportation

1. Project personnel and contractors shall be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and airborne dust.
2. Traffic shall be restricted to the roads developed for the project. Use of other unimproved roads shall be restricted to emergency situations.
3. Signs shall be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuters, consideration shall be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute time.

Air Emissions

1. Dust abatement techniques shall be used on unpaved, unvegetated surfaces to minimize airborne dust.
2. Speed limits (e.g., 25 mph [40 km/h]) shall be posted and enforced to reduce airborne fugitive dust.
3. Construction materials and stockpiled soils shall be covered if they are a source of fugitive dust.
4. Dust abatement techniques shall be used before and during surface clearing, excavation, or blasting activities.

Excavation and Blasting Activities

1. Operators shall gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies shall be identified.
2. Operators shall avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.
3. Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.
4. Borrow material shall be obtained only from authorized and permitted sites. Existing sites shall be used in preference to new sites.
5. Explosives shall be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the BLM or other federal and state agencies.

Noise

1. Noisy construction activities (including blasting) shall be limited to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.
2. All equipment shall have sound-control devices no less effective than those provided on the original equipment. All construction equipment used shall be adequately muffled and maintained.
3. All stationary construction equipment (i.e., compressors and generators) shall be located as far as practicable from nearby residences.
4. If blasting or other noisy activities are required during the construction period, nearby residents shall be notified in advance.

Cultural and Paleontological Resources

1. Unexpected discovery of cultural or paleontological resources during construction shall be brought to the attention of the responsible BLM authorized officer immediately. Work shall be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.

Hazardous Materials and Waste Management

1. Secondary containment shall be provided for all on-site hazardous materials and waste storage, including fuel. In particular, fuel storage (for construction vehicles and equipment) shall be a temporary activity occurring only for as long as is needed to support construction activities.
2. Wastes shall be properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.
3. In the event of an accidental release to the environment, the operator shall document the event, including a root cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the BLM authorized officer and other federal and state agencies, as required.
4. Any wastewater generated in association with temporary, portable sanitary facilities shall be periodically removed by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews shall be adequate to support expected on-site personnel and shall be removed at completion of construction activities.

Public Health and Safety

1. Temporary fencing shall be installed around staging areas, storage yards, and excavations during construction to limit public access.

Operation

General

1. All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the operational phase, as appropriate. These control and mitigation measures shall be reviewed and revised, as needed, to address changing conditions or requirements at the site, throughout the operational phase. This adaptive management approach would help ensure that impacts from operations are kept to a minimum.
2. Inoperative turbines shall be repaired, replaced, or removed in a timely manner. Requirements to do so shall be incorporated into the due diligence provisions of the ROW authorization. Operators will be required to demonstrate due diligence in the repair, replacement, or removal of turbines; failure to do so could result in termination of the ROW authorization.

Wildlife

1. Employees, contractors, and site visitors shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, any pets shall be controlled to avoid harassment and disturbance of wildlife.
2. Observations of potential wildlife problems, including wildlife mortality, shall be reported to the BLM authorized officer immediately.

Ground Transportation

1. Ongoing ground transportation planning shall be conducted to evaluate road use, minimize traffic volume, and ensure that roads are maintained adequately to minimize associated impacts.

Monitoring Program

1. Site monitoring protocols defined in the POD shall be implemented. These will incorporate monitoring program observations and additional mitigation measures into standard operating procedures and BMPs to minimize future environmental impacts.
2. Results of monitoring program efforts shall be provided to the BLM authorized officer.

Public Health and Safety

1. Permanent fencing shall be installed and maintained around electrical substations, and turbine tower access doors shall be locked to limit public access.
2. In the event an installed wind energy development project results in EMI, the operator shall work with the owner of the impacted communications system to resolve the problem. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from wind turbines can be quickly recognized.

Decommissioning

General

1. Prior to the termination of the ROW authorization, a decommissioning plan shall be developed and approved by the BLM. The decommissioning plan shall include a site reclamation plan and monitoring program.
2. All management plans, BMPs, and stipulations developed for the construction phase shall be applied to similar activities during the decommissioning phase.
3. All turbines and ancillary structures shall be removed from the site.
4. Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation.
5. All areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs.
6. The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix VIII - Hollister Field Office Reasonably Foreseeable Development Scenario for Oil and Gas

I. Summary

Based on an analysis of past oil and gas related activities within the boundaries of the Hollister Field Office (HFO) and the very small amount of federal mineral estate within areas of high development potential, we project that oil and gas activities on federal mineral estate within the Hollister Field Office area boundary will continue at a relatively minimal level. Overall, within the next 15-20 years, we project total surface disturbance due to all oil and gas activities on federal mineral estate to be no more than 74 acres. This estimate includes geophysical exploration (seismic), 5 exploration wells, 10 development wells and associated facilities, roads, and a transmission pipeline that could be linked to existing transmission lines within the area. One third of this disturbance, 26 acres, will be temporary, and would be mostly to totally 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**.**

The total surface disturbance for up to 10 development wells would be 10 acres for well pads, 12 acres for roads, and 24 acres for a single transmission line 10 miles long. No more than 1 acre would be required for the small facility (meter, separator) on each of two parcels, for a total of 2 acres. The total surface disturbance caused by seismic operations, exploration drilling, and development would be 74 acres, as summarized below.

Description	**Number**	**Unit Disturbance (ac.)**	**Total Disturbance (ac.)**
Exploratory Wells			
Well Pads	5 wells	1 acre/well	5
Roads (40’ wide)	5 x 0.5 miles	4.8 acre/mile	12
Development			
Well Pads	10	1 acre/well	10
Roads (40’ wide)	10 x 0.25 mi	4.8 acre/mile	12
Facilities	4	1 acre/facility	4
Seismic (2 track x 18”)	25 miles	0.36 acre/mi	9
Pipeline (20 ‘ wide)	10 miles	2.4 acres/mi	24
Total:	**40 miles**	**74**	**74**

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.

The scenario first describes the steps involved in exploring for and developing deposits of oil and gas. 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 purposes of this document, we consider that all mineral estate managed by the BLM 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 Hollister Field Office Area

Refer to Section V, Oil and gas Occurrence and Development Potential.

IV. Past and Present Oil and Gas Exploration and Development Activity

There are 30 active oil fields and gas fields within the HFO management area, with a total administrative area of 188,000 acres. Within those administrative areas, the actual productive areas total about 58,000 acres. Since 1984, more than 1000 wells have been drilled within the HFO area, 93% of which were within field boundaries, with only 7% being classified as wildcats (outside administrative field boundaries). Although there are nearly 5400 acres of federal mineral estate within these productive boundaries (9% of the total), there was not a single well on federal mineral estate. This trend is not likely to change much, because nearly all of the activity in each of the past 10 years occurred in 3 fields where the federal share of mineral estate is only 1%.

Regarding new field discoveries, there have been fewer than 3 fields discovered since 1984, none of which contained federal mineral estate. Because of the low amount of activity on federal mineral estate, a more detailed description of past and current activities throughout the entire HFO area is unnecessary.

V. Oil and Gas Occurrence and Development Potential

The Hollister Field Office has areas of high, moderate, and low to none development potential. The size of each category is shown below.

Category:	**Total Acres:**
High	1,883,449
Moderate	2,402,432
Low to None	2,529,259
Total	6,815,140

High Development Potential

The areas of high oil/gas development potential occur in five areas. The areas, a total of 1,883,000 acres, are depicted in pink on Map 10. They will be described from north to south.

The first area of high oil/gas development potential is in the extreme northern part of the Hollister Field Office area in Contra Costa County. This area is dominated by gas fields that produce from Eocene and Paleocene sedimentary rocks.

The second area of high oil/gas development potential is in the Santa Clara Mountains of southeastern San Mateo and northwestern Santa Cruz Counties. There are no presently active oil or gas fields in the area. However, several drilling programs have identified potential production ("shows") from Lower Tertiary and Upper Cretaceous formations in this area.

The third area of high oil/gas development potential is in the central part of the Hollister Field Office area in northern San Benito County. The Sargent Oil Field produces from the Miocene Monterey Formation and Pliocene Purisima Formation of the San Juan Valley sedimentary basin.

The fourth area of high oil/gas development potential is in southeastern San Benito County and western Fresno County. This area is part of the San Joaquin Basin, and has several oil fields that produce from Miocene and Pliocene marine sedimentary rocks.

The fifth area of high oil/gas development potential is in southwestern San Benito County and southeastern Monterey County. The most important oil/gas field in this area is the San Ardo field. It, and the other oil fields in the area, produce from the Miocene Monterey formation in the Salinas sedimentary basin.

Moderate Potential

There are several areas of moderate potential within the Hollister Field Office area. These areas, a total of 2,402,000 acres, are shown in yellow on Map 10. They are described as areas with Upper Cretaceous or Lower Tertiary sedimentary rocks containing many wells with oil and gas "shows" or even production, although generally not in economic quantities. Although these areas may contain numerous wells that either had production at one time, or had "shows", they are classified as having only moderate potential because the rocks in this area are generally more highly fractured, and do not generally have trapping styles or cap rocks that permit sustained development from oil/gas accumulations.

In the southern part of the Hollister Area Office, these rocks are found in three strips along the western central and eastern parts of the Area Office. The eastern strip of Moderate oil/gas potential lies west of high-potential areas of the Sacramento-San Joaquin Basin. This strip lies east of a mass of crystalline and Franciscan metamorphic rocks in the center of the Field Office Area, including the Clear Creek Management Area in the Diablo Mountain Range.

The central strip of moderate oil/gas potential is bounded on the east by a mass of crystalline and Franciscan metamorphic rocks of the Diablo Range and a similar set of igneous and metamorphic rocks in the Coast Ranges.

The western strip of moderate oil/gas potential occurs between the coast and the western foothills of the Coast Ranges.

Low to None Development Potential

There areas of low to none (hereafter "low") oil/gas development potential is defined as areas that are underlain dominantly by crystalline igneous rocks and metamorphic rocks of the Franciscan Formation.

These areas of low oil/gas development potential, a total of 2,529,000 acres, are shown in green on Map 10.

There are five low potential zones in the Hollister Field Office. The low potential rocks occur in three discontinuous bands that run north-northwest to south-southeast in the eastern, central, and western parts of the Area Office.

The eastern low potential zone is located in the Diablo Mountains and in the Tumey-Panoche Hills. It is divided into northern and southern segments by the Vallecitos Trough.

The central low potential zone is located in the Coast Ranges as the core of a crystalline igneous-metamorphic faulted complex.

The western low potential zone has two components. The northern component is in the Santa Lucia Range, and the southern component in the Santa Lucia Range.

Occurrence Potential

Refer to Map 10 in Appendix I to identify areas of oil and gas occurrence potential in CCMA.

VI. RFD Baseline Scenario Assumptions, Discussion, and Estimated Surface Disturbance from Oil and Gas Activity on Federal Mineral Estate in the Hollister 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.

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 3-5 exploratory wells, with no more than 10 development wells, and the associated facilities/gas transmission lines. It is very unlikely that more than a total of 15 exploratory and development wells will be drilled on new 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," there is always a 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 4-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 and 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 9 acres, based on up to 25 miles of seismic lines and a two track road with each track being 18" 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 30 active oil fields and gas fields that are partly or totally within the Hollister FO area, only 9% land within the productive boundaries of those fields contains federal minerals (5400 federal acres out of a total of more than 58,000 acres). In the past ten years, 1030 wells have been drilled

in the entire FO area, but no wells have been drilled on federal minerals within the entire FO area. Consequently, based on the history of oil and gas exploration in the planning area, it is projected that no more than three to five exploratory wildcat wells (wells outside of the administrative boundary of existing oil and gas fields) would be drilled on BLM-administered land 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 activity in areas with significant amount of federal mineral estate.

Most drilling is expected to occur in areas of land designated as high development potential (shown on Map 10). Although there is a low probability that a field will be discovered on federal land during the life of this plan, if a field containing federal land were to be discovered in the northern portion of HFO area, it is likely that the discovery would be gas because all of the occurrences in that area are gas. Conversely, if a field containing federal land were to be discovered in the southern portion of HFO area, it is likely that the discovery would be oil because all of the occurrences in that area are oil.

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 3 or 4 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 3-5 wells over the life of this plan is expected to be no more than 10-17 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 HFO area, mostly in the extreme southern and extreme northern portions 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 80-160 acres. For oil fields in the HFO area, spacing is much closer. In the larger oilfields, usual development spacing is typically at 5-7 acres per well. However, spacing can be as close as one well per acre in areas with heavy oil. 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 oil field may be discovered somewhere within the planning area. The average field size in the FO area is over 1900 acres, but that is significantly skewed by the presence of a few very large fields. The bottom 80% of the active fields in the FO area average 650 acres, about one square mile. If a single oilfield of that size was discovered, on average it would contain 9.1% federal mineral estate, about 60 acres. At 5-7 acres per well, it would take approximately 10 wells to fully develop the parcel. 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. Oil/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 10 development wells would be 10 acres for well pads, 12 acres for roads, and 24 acres for a single transmission line 10 miles long. No more than 1 acre would be required for the small facility (meter, separator) on each parcel. For planning purposes, we will assume that the wells may be on two separate parcels, so there would be a total of 2 acres for facilities. The total surface disturbance caused by seismic operations, exploration drilling, and development would be 74 acres.

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 reclaimed eventually.

Military Bases – Fort Hunter Liggett military base is within the planning area. 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.

Authors: BLM Bakersfield Field Office
Lead - Jeff Prude – Petroleum Engineer – Field Office Oil and Gas Program Lead
Gregg Wilkerson - Geologist
W/ Assistance from Larry Vredenburgh – GIS Specialist

ATTACHMENT 1 -- CA Department of Parks and Recreation – Science Review Correspondence and Contributions to BLM's EIS Process and Alternative Development

State of California • The Natural Resources Agency **Edmund G. Brown Jr., *Governor***

DEPARTMENT OF PARKS AND RECREATION • P.O. Box 942896 • Sacramento, CA 94296-0001 **Major General Anthony L. Jackson, USMC (Ret) , *Director***
Off-Highway Motor Vehicle Recreation Division
1725 23rd Street, Suite 200
Sacramento, California, 95816
(916) 324-4442

November 19, 2012

Rick Cooper, Hollister Field Manager
Burea of Land Management
20 Hamilton Court
Hollister, CA 95023

Subject: May 29, 2012 Meeting – BLM and OHMVR Clear Creek Management Area

Thank you for your participation in the meeting of May 29, 2012, held at the Off-Highway Motor Vehicle Recreation Division office in Sacramento. The summary minutes from the meeting are attached. The discussion regarding the basic scientific issues underlying the Clear Creek Management Area (CCMA) studies were helpful and informative to all in attendance. The discussion notes identify areas of agreement and define some areas of concern among the group.

As BLM proceeds with the completion of the CCMA Resource Management Plan (RMP) decision process, the Division asks that the BLM make provisions in the RMP to continually evaluate new scientifically sound information and adapt management options accordingly.

Regards,

Philip B. Jenkins
Acting Deputy Director

Enclosure

cc: James G. Kenna, BLM State Director
Angie Lara, BLM Associate State Director
Este Stifel, BLM Central California District Manager

Summary – CCMA
5/29/12

A. Areas of Agreement

1. Activity Based Methodology is an effective approach
2. Location under discussion is the area within the ACEC Boundary
3. Staging/Camping No Longer Occur - Agreed it is appropriate to disregard risk factors related to staging/camping within the ACEC in future risk calculations
4. Capping does reduce risk, but would still need to be monitored and measured to determine exposure as time goes on
5. Key Elements to evaluate risk: Duration, Frequency, and Concentration
6. Lead Rider is exposed to much less risk

B. Areas of Concern

1. Trailing Rider Effect
    - Normal riding styles – are there possibilities to lower risk?
        - Require distance between riders?
            - Is trailing rider effect less pronounced on trails than it is on roads?
            - At what distance does trailing rider receive significantly less exposure?
        - Would using monitors in helmet provide significantly lower exposure levels than monitors placed on chest?
2. "Wet Season Riding"
    - No consistent rain patterns at CCMA
    - How much rain, and at what frequency, would there need to be to significantly reduce risk factors? No solid information in this regard has been collected.
3. Clear Creek Road – Road vs. Trail riding
    - Riders avoid dust trail when riding on trails, but encounter higher levels of dust when riding on roads. Data in the existing studies does not provide the ability to support if riders on trails experience lower levels of exposure or not.
        - Capping road may be a solution
            - Exposure levels after capping would need to be evaluated. New risk calculation could possibly be made based on trail riding exposure levels and reduced exposure on roads.
            - The relative distances traveled on roads vs. traveled on trails and the resulting reduction in risk that might be expected from capping the roads needs to be evaluated.

C. Opportunities for additional research

- Rider behavior to avoid dust & areas where most dust would be encountered – roads vs trails & the efficacy of capping roads.
- Efficacy of 1-way roads & trails to limit dust.
- Climate studies of the areas rainfall patterns. Soil studies on moisture content and generation of dust.
- Further research to evaluate risk during moist conditions in the days and weeks following a rain event.