



U.S. Department of the Interior  
Bureau of Land Management  
Hollister Field Office  
20 Hamilton Court  
Hollister, CA 95023

May 2004

---

Draft  
Resource Management Plan Amendment  
And  
Draft Environmental Impact Statement  
For The  
Clear Creek Management Area





# The Bureau of Land Management *Today*

## *Our Vision*

To enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources.

## *Our Mission*

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

## *Our Values*

To serve with honesty, integrity, accountability, respect, courage, and commitment to make a difference.

## *Our Priorities*

To improve the health and productivity of the land to support the BLM multiple-use mission.

To cultivate community-based conservation, citizen-centered stewardship, and partnership through consultation, cooperation, and communication.

To respect, value, and support our employees, giving them resources and opportunities to succeed.

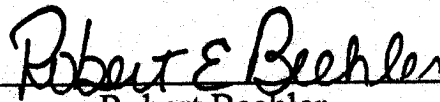
To pursue excellence in business practices, improve accountability to our stakeholders, and deliver better service to our customers.

**U. S. Department of Interior  
Bureau of Land Management**

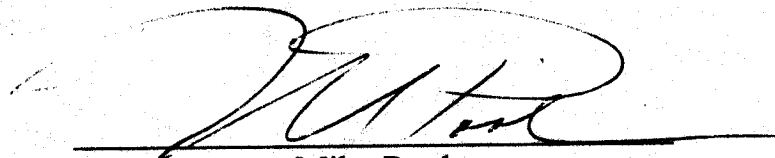
**Clear Creek Management Area  
Draft Resource Management Plan  
Amendment  
And  
Environmental Impact Statement**

Prepared by:

Hollister Field Office  
May 2004



Robert Beehler  
Hollister Field Manger



Mike Pool  
California State Director



# United States Department of the Interior



## BUREAU OF LAND MANAGEMENT

Hollister Field Office

20 Hamilton Court

Hollister, CA 95023

Phone (831) 630-5000 Fax (831) 630-5055

[www.ca.blm.gov/hollister](http://www.ca.blm.gov/hollister)

1610(P)  
(CA-190.00)

Dear Reviewer:

Enclosed for your review is the Draft Clear Creek Management Area Plan Amendment and Draft Environmental Impact Statement (DEIS). Planning began in 2003. The planning area covers 75,000 acres in central California. The document describes and analyzes a number of alternatives for designating routes and areas, protecting sensitive resources and threatened species, and incorporating new significant planning on federal lands administered by the Bureau of Land Management. Public scoping identified several issues. These include:

- 1) airborne asbestos emissions;
- 2) public health risks associated with asbestos exposure;
- 3) asbestos sediment production and transport;
- 4) San Benito evening primrose recovery;
- 5) watershed and riparian zone management; and
- 6) resolving conflicts among existing multiple uses.

The public comment period for the draft plan and EIS is 90 days and begins with publishing in the Environmental Protection Agency's Federal Register. Please mail comments to the letterhead address with attention to George Hill. Comments on the draft Plan Amendment and the adequacy of the EIS will be considered in preparing the Proposed Plan Amendment and Final EIS. Public meetings will also be held in various cities in and around the planning area to receive comments. The dates, times, and locations of these meetings will be announced later.

Sincerely,

Robert A. Beehler  
Field Manager

Enclosure

## TABLE OF CONTENTS

<b>Executive Summary</b> .....	ES-1
<b>Chapter 1 – Introduction</b>	
1.1 Overview.....	1-1
1.2 Planning Area.....	1-2
1.3 Background.....	1-2
1.3.1 Planning History.....	1-2
1.3.2 Use History.....	1-3
1.4 Purpose and Need.....	1-4
1.5 Relationship to Statutes, Regulations, Policies and other Land Use Plans..	1-5
1.6 Goals.....	1-7
1.7 Constraints.....	1-8
1.8 Route and Area Designation.....	1-8
1.8.1 Definitions.....	1-8
1.8.2 Public Recreation Use vs. Authorized Use.....	1-9
1.8.3 Access Rights and Mineral Development.....	1-10
1.8.4 Incorporated Acquired Lands Made Through Previous Land Tenure Adjustments.....	1-10
1.9 Route Designation Database.....	1-10
1.10 Implementing Route and Area Designations.....	1-11
<b>Chapter 2 – Alternatives</b>	
2.1 Introduction.....	2-1
2.2 Criteria.....	2-2
2.3 Planning Criteria.....	2-3
2.3.1 Common to All Alternatives.....	2-3
2.3.2 Common to All Alternatives But the No Action Alternative.....	2-5
2.3.3 Route and Barren Designation Methodology.....	2-5
2.3.4 Route Designation Criteria.....	2-7
2.3.5 Barren Area Designation Criteria.....	2-11
2.3.6 San Benito Mountain Research Natural Area Boundary Designation.....	2-13
2.4 Alternatives Description.....	2-14
2.4.1 Alternative A – Proposed Action.....	2-15
2.4.2 Alternative B – Enhanced Recreation Opportunities.....	2-20
2.4.3 Alternative C – Enhanced Resource Protection.....	2-22
2.4.4 Alternative D – No Action.....	2-23
2.5 Mitigation Measures Applicable to All Alternatives But the No Action Alternative.....	2-25
2.6 Modification of Route Network.....	2-27
2.7 Implementation.....	2-28

**Chapter 3 – Affected Environment**

3.1	Introduction.....	3-1
3.2	Topography and Climate.....	3-1
3.3	Air Quality, Soils, and Water.....	3-2
3.3.1	Air Quality.....	3-2
3.3.2	Soils.....	3-4
3.3.3	Watershed Resources.....	3-6
3.3.4	Human Health.....	3-12
3.4	Biological Resources.....	3-16
3.4.1	Vegetation Communities.....	3-17
3.4.2	Special Status Plant Species.....	3-22
3.4.3	Special Status Animal Species.....	3-25
3.4.4	Invasive Weeds.....	3-28
3.4.5	Grazing.....	3-29
3.5	Recreation Resources.....	3-32
3.5.1	Motorized Vehicle Access Network.....	3-34
3.5.2	Barrens.....	3-39
3.5.3	Non-OHV Recreation Opportunities.....	3-39
3.6	Cultural Resources.....	3-41
3.7	Special Management Areas.....	3-43
3.7.1	Area of Critical Environmental Concern.....	3-43
3.7.2	San Benito Mountain Research Natural Area.....	3-43
3.7.3	Wilderness Study Area.....	3-44
3.8	Social and Economic Conditions.....	3-46
3.8.1	Social.....	3-46
3.8.2	Economic.....	3-47
3.8.3	Environmental Justice.....	3-48

**Chapter 4 – Environmental Consequences**

4.1	Introduction.....	4-1
4.2	Air Quality.....	4-1
4.3	Watershed Resources.....	4-5
4.3.1	Water Quality.....	4-5
4.3.2	Soil Loss and Erosion.....	4-8
4.4	Human Health.....	4-12
4.5	Biological Resources.....	4-15
4.5.1	Affected Vegetation Communities.....	4-15
4.5.2	Affected Special Animal Species.....	4-34
4.5.3	Invasive Weeds.....	4-36
4.6	Recreation Resources.....	4-37
4.6.1	Motorized Vehicle Access Network.....	4-38
4.6.2	Barrens.....	4-42
4.6.3	Non-OHV Recreation Opportunities.....	4-44

4.7	Cultural Resources.....	4-45
4.8	Special Management Areas.....	4-47
4.8.1	Serpentine Area of Critical Environmental Concern.....	4-47
4.8.2	San Benito Mountain Research Natural Area.....	4-47
4.8.3	San Benito Wilderness Study Area.....	4-51
4.9	Social and Economic Conditions.....	4-51
4.9.1	Socio-Economic.....	4-51
4.9.2	Environmental Justice.....	4-55
4.10	Adaptive Management.....	4-56
4.10.1	Adaptive Management Implementation Strategy.....	4-56

**Chapter 5 – Cumulative Affects**

5.1	Introduction.....	5-1
5.2	Air Quality.....	5-1
5.3	Watershed Resources.....	5-1
5.3.1	Water Quality.....	5-1
5.3.2	Soil Loss and Erosion.....	5-3
5.4	Human Health.....	5-4
5.5	Biological Resources.....	5-4
5.5.1	Wildlife and Vegetation; Threatened, Endangered, and Special Status Plant and Animal Species.....	5-4
5.5.2	Invasive Weeds.....	5-6
5.6	Recreation Resources.....	5-6
5.6.1	Motor Vehicle Access Network.....	5-8
5.7	Cultural Resources.....	5-8
5.8	Special Management Areas.....	5-9
5.9	Socio – Economic Resources.....	5-9

**Appendices**

Appendix A	– Route Designation
Appendix B	– Barren Designation
Appendix C	– Implementation Plan
Appendix D	– Best Management Practices
Appendix E	– San Benito Mountain Research Natural Area Interim Management Plan and Management Guidance
Appendix F	– Special Status Species
Appendix G	– Air Quality
Appendix H	– Water Quality Data
Appendix I	– Environmental Consequence Table of Alternatives
Appendix J	– Clear Creek Management Area Chronology
Appendix K	– Map: Alternative A
Appendix L	– Map: Alternative B
Appendix M	– Map: Alternative C
Appendix N	– Map: Alternative D

## EXECUTIVE SUMMARY

### INTRODUCTION

The Bureau of Land Management (BLM) is responsible for the balanced management of public lands, and the agency develops Resource Management Plans (RMPs) to help guide decisions on how best to achieve this balanced management. Resource Management Plans are based upon the principles of multiple-use and sustained yield, and take into account the long-term needs of future generations for renewable and non-renewable resources. In 1984, the Hollister RMP was completed. Since that time, new issues and concerns have surfaced regarding use in the Clear Creek Management Area (CCMA). Portions of the 1995 CCMA Plan Amendment and FEIS will be amended by analyzing these new issues and concerns through a new Proposed Plan Amendment and Draft Environmental Impact Statement (DEIS).

The CCMA is located in central California's San Benito and Fresno counties. Previous decisions were based on an area covering approximately 50,000 acres of public land. New GIS data discloses that the CCMA actually encompasses 75,829 acres of which include 10,668 acres of private inholdings and 1,964 acres of state lands. About 30,128 acres of the CCMA lie within a BLM "Area of Critical Concern" (ACEC). This ACEC was designated because of the high concentrations of natural asbestos occurring in its serpentine soils. The actual red zone area extends 840 acres beyond the ACEC boundary. The San Benito Mountain Research Natural Area (SBMRNA) contains 1,870 acres. The San Benito Mountain Wilderness Study Area (WSA) contains 1,488 acres of which 382 acres do not overlap the SBMRNA.

There are health concerns regarding the public use of this area, as vehicles on unpaved roads, trails and barren slopes generate asbestos fibers, which can be inhaled by visitors. Serpentine soils in the CCMA have given rise to a unique assemblage of plants and plant communities. Some plants are not only endemic to the area, they are rare and considered in danger of extinction. One example is the San Benito evening primrose, a federally protected species. Some plant communities such as the San Benito Mountain Forest are also unique and warrant special management. While vegetation within the ACEC is specially adapted to serpentine soils, the overall vegetative cover tends to be sparse. Many slopes are devoid of vegetation entirely, or have very little vegetative cover. These "barren" hillslopes have become very popular with off-highway vehicle (OHV) enthusiasts. In addition to the authorized vehicular recreation on barren hillslopes, there exists a large network of backcountry roads and trails throughout approximately 40,000 acres of the CCMA. These roads and trails were developed in conjunction with extensive timber and mining efforts prior to 1970, and offer a challenging OHV experience.

Every year, motorcycle and four-wheeling events are held in the CCMA. The CCMA is popular with other users as well, particularly rockhounds and hunters, who utilize a network of roads and trails to pursue their recreational interests. The CCMA is most frequently visited during the wet season, approximately November through March.

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 (such as historical mining, recreation, and road building and maintenance) has negatively impacted soil and vegetative resources over the years. Minimizing soil erosion and minimizing the damage to vegetation is a management priority.

In addition, the potential for asbestos exposure via fiber inhalation while recreating or working in the area is a serious health issue. This health issue is magnified by the fact that the area was mined extensively for asbestos earlier in the century, leaving many sites where the tailings of almost pure asbestos are exposed. One large mined site, the Atlas Mine, is an EPA Superfund site, and is closed to public use.

Results of a 1990 study of the San Benito evening primrose showed that this species' status was declining. This new information, as well as information gained from on-going studies of asbestos health risks, and erosion and sedimentation problems in all watersheds of the CCMA, resulted in a BLM decision to re-evaluate and amend its 1984 and 1986 plans. The ensuing Final Clear Creek Management Area Resource Management Plan Amendment rendered a Record of Decision (ROD) in 1999.

## **PROPOSED ACTION**

This Draft Plan Amendment and DEIS evaluates alternatives for managing public use in the Clear Creek Management Area (CCMA), an area administered by the BLM. Upon selection of the preferred alternative a proposed amendment will be identified and incorporated into a Final Environmental Impact Statement (FEIS) to amend the Hollister Resource Management Plan of 1984 (as amended), and will guide management in the CCMA for the next 15 years. The DEIS is being prepared using BLM's planning regulations and guidance issued under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976. The Draft Plan Amendment and DEIS is incorporated as part of this document to assess the environmental consequences associated with various alternative management scenarios. It is also included to meet the requirements of the National Environmental Policy Act (NEPA), of 1969 Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations 1500-1508), and requirements of BLM's NEPA Handbook, H-1790-1.

## **PURPOSE AND NEED**

The purpose of this Draft Plan Amendment and DEIS is to implement decisions made in the 1999 CCMA ROD and revise and reestablish guidance, objectives, policies, and management actions for the CCMA that reflect current issues, knowledge, and conditions. This planning effort evaluates existing management plans and resolves or addresses issues within the CCMA identified through agency, interagency, and public scoping efforts.

This Draft Plan Amendment and DEIS analyzes the current management situation and identifies desired future conditions to be maintained or achieved and management actions necessary to achieve specific objectives. It addresses and integrates all existing management plans and resource conditions; including, but not limited to, air quality, watershed resources, human health, biological resources, recreation resources, cultural resources, special management areas, social economic conditions, and environmental justice.

## **MISSION STATEMENT**

The Bureau of Land Management is responsible for the balanced management of Public Lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that takes into accounts the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range,

timber, minerals, watershed, fish and wildlife, wilderness, and natural, scenic, scientific and cultural values.

## **PLANNING PROCESS AND PUBLIC COLLABORATION**

The planning process for this effort began as an Environmental Assessment (EA) and opened with publication of the Notice of Intent in the Federal Register on April 29, 2003 (Volume 68, No. 82). Scoping has included review of public scoping comments, meetings/workshops with the CCMA Technical Review Team (TRT) which is a group of people representing diverse entities ranging from off-highway vehicle clubs, environmental organizations, agencies, and private individuals. Meetings focused on developing criteria for designating routes and barrens and expansion and management of the San Benito Mountain Research Natural Area (SBMRNA.)

The key themes discussed during the scoping meetings were: 1) development of soil moisture guidelines/standards for route maintenance; 2) permitted recreation events; 3) wet season closure alternatives, 4) air board regulations; 5) development of criteria and alternatives for route and barren designations; and 6) the expanded boundaries of the SBMRNA.

During preparation of the environmental assessment and review of comments; a determination was made that the impacts may be significant to the quality of the human environment; and an Environmental Impact Statement should be undertaken. A Notice of Availability was published in the Federal Register May 2004 correcting the previous Notice of Intent and announcing the availability of the Draft Plan Amendment and DEIS, to proceed with this new action.

## **MANAGEMENT ALTERNATIVES**

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

The alternatives selected for analysis were developed with public involvement, and with consideration for both the current uses of the CCMA and the existing resource conditions. The range of alternatives is tiered to the modified Alternative 3 from the 1995 CCMA FEIS. The environmental impacts resulting from each alternative were assessed in light of the issues identified. These issues were: 1) asbestos hazards (including dust emissions, public health risks) and air quality; 2) unique and/or rare, threatened or endangered (RTE) species, special status species and habitat; 3) water quality, erosion, sediment production and transport, and watershed and riparian zone management; and 4) existing authorized multiple uses of the area (OHVs; non-OHV recreation, including hunting, hiking, rockhounding, and other uses).

The draft considers four alternatives. The environmental impacts of each alternative are analyzed in relation to varying degrees of public use. Alternative D is the "No Action" alternative, whereby the current management actions would continue. No new recreational facilities would be constructed. Few new mitigation measures would be implemented to reduce environmental impacts from recreational use under this alternative, and recreation would be the primary focus. Existing recreational use patterns would continue. Under all alternatives, including the No Action the boundaries of the SBMRNA would be expanded.

Alternatives A, B, and C would designate routes as open, limited, or closed as well as designating barrens as open or closed and define the boundaries of the expanded (SBMRNA).

Alternative A is a blend of alternatives B and C. This alternative restricts OHV use moderately. Under this alternative, the designated route network would provide motorized access throughout the CCMA. Open play on barrens would be limited to the Clear Creek watershed. Motorized vehicle use in a portion of the Condon Peak area would be limited to four-wheeled vehicles only. The SBMRNA would be expanded to almost 4000 acres.

Alternative B focuses on enhancing OHV recreation opportunities. Camping would continue at Oak Flat and the six staging areas, as well as informal sites outside riparian zones. This alternative would designate the largest network of routes and barrens available for OHV use. Barrens designated for use would be dispersed throughout the CCMA. The SBMRNA would be expanded to almost 3500 acres.

Alternative C focuses on limiting OHV recreation activities while placing a higher priority on non-OHV recreation and protecting sensitive resources. All available barren play areas would be located in the Clear Creek watershed as in Alternative A. Camping would be restricted to designated areas. The San Benito Mountain Natural Area boundaries would be expanded to approximately 4500 acres, providing the greatest degree of protection for the RNA and the values for which established.

The analysis of the impacts from these alternatives indicates that impacts to sensitive plants and habitats, and watershed resources would decline compared to existing conditions, as one moved towards the more restrictive alternatives in which the potential to improve habitats would be maximized. The action alternatives would provide moderate levels of sustainable recreation use, with some new controls added to assure that neither resources nor recreation experiences suffer through overuse. Certain resources, such as air quality, biological resources, and watershed resources would benefit from taking a more active restoration and balanced management approach; for Human Health, this would result in greater knowledge about risks associated within the CCMA, as well as more specific protections for identified sites.

The public comment period for the draft EIS will run for 90-days from the date of publication of the Federal Register Notice of Availability. The BLM will hold two public meetings to gather public comments. These meetings will be announced in the media at least 15 days prior to the meeting.

## **ENVIRONMENTAL CONSEQUENCES**

The management alternatives were specifically configured to maximize benefits and minimize adverse effects on both ecosystem function and the human environment. Effects from different management actions under all alternatives were analyzed by individual resources. Detailed descriptions of the direct and indirect impacts of resource management under all four alternatives for each resource area are provided in Chapter 4, along with a discussion of the possible cumulative impacts provided in Chapter 5 that could result from actions taken in this EIS.

## **CONSULTATION AND COORDINATION**

As discussed above, the BLM implemented a public participation process to solicit and address public input, including informal public scoping meetings/workshops. As part of this process, the BLM also met with members of the TRT which represent the California Native Plant Society, Desert Survivors, Salinas Ramblers Motorcycle Club, Timekeepers Motorcycle Club. During the initial stage of

## EXECUTIVE SUMMARY

development while in the EA format, informal consultations were held with the U.S. Fish and Wildlife Service (USF&WS), U. S. Environmental Protection Agency, California Department of Toxic Substance Control, and California Native Plant Society. Formal consultation will be initiated with USF&WS and SHPO. Since initiation of this planning effort, the BLM has consulted and coordinated with federal, state, county, and local government agencies and selected officials and representatives. Communication is ongoing and will continue through the implementation of the plan.

**Chapter 1 – Introduction**

1.1 Overview.....	1-1
1.2 Planning Area.....	1-2
1.3 Background.....	1-2
1.3.1 Planning History.....	1-2
1.3.2 Use History.....	1-3
1.4 Purpose and Need.....	1-4
1.5 Relationship to Statutes, Regulations, Policies and other Land Use Plans..	1-5
1.6 Goals.....	1-7
1.7 Constraints.....	1-8
1.8 Route and Area Designation.....	1-8
1.8.1 Definitions.....	1-8
1.8.2 Public Recreation Use vs. Authorized Use.....	1-9
1.8.3 Access Rights and Mineral Development.....	1-10
1.8.4 Incorporated Acquired Lands Made Through Previous Land Tenure Adjustments.....	1-10
1.9 Route Designation Database.....	1-10
1.10 Implementing Route and Area Designations.....	1-11

## **CHAPTER 1 INTRODUCTION**

### **1.1 OVERVIEW**

This Draft Resource Management Plan Amendment and associated Draft Environmental Impact Statement (DEIS) to the Hollister Resource Management Plan (RMP) for the Clear Creek Management Area (CCMA) will:

- Designate routes of travel and areas for motorized vehicle access as Open, Closed, or Limited,
- Designate boundaries of the expanded San Benito Mountain Research Natural Area (SBMRNA) and designate it an Area of Critical Environmental Concern (ACEC), and
- Incorporate acquired lands made through previous land tenure adjustments into the Clear Creek Management Area (CCMA).

This Draft Plan Amendment and DEIS are tiered to the environmental analysis conducted in the Clear Creek Management Area Plan Amendment and Final Environmental Impact Statement (FEIS) (1995).

Other planning issues for CCMA such as camping, hunting, hobby gem/mineral collection, hiking, backpacking, camping, hang gliding, geocaching, nature study, and wildlife viewing are not part of this Plan Amendment and would be addressed in subsequent amendments to the Plan.

### **1.2 PLANNING AREA**

The Clear Creek Management Area (CCMA) is located in central California in the southern portion of San Benito County and the western portion of Fresno County as shown on Map 1-1. It encompasses approximately 75,000 acres of public land managed by the Hollister Field Office of the Bureau of Land Management (BLM). Management areas are typically larger units of public lands that have a degree of similarity with regard to resource characteristics and planning issues. This area has been used extensively for Off-Highway Vehicle (OHV)<sup>1</sup> recreation for many years. A variety of other recreation activities also occur within the CCMA including, hunting, rock-hounding, wildlife watching, and hiking.

Within the CCMA boundary is the Serpentine ACEC covering about 31,000 acres. Its' 1984 designation was based on the health concerns associated with the naturally occurring asbestos within the serpentine soils and because of the unique vegetation and forest types associated with serpentine soil. The boundaries of the ACEC were defined by mapping of asbestos 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.

---

<sup>1</sup> For many years the term "off-highway vehicle" (OHV) has been used by the public, industry, and the BLM interchangeably with the term "off-road vehicle" (ORV). However, only the term off-road vehicle has a legally established definition in the Presidential Executive Orders and the BLM's related 43 CFR 8340 regulations. In general, throughout this document we will refer to motorized OHV, except when discussing issues related to policy or regulations.

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 (SBMRNA), which is approximately 4,082 acres in size. This area was originally established as an Outstanding Natural Area in 1972, with an area of about 1,880 acres. The Record of Decision for 1999 Amendment to the Plan requires the present environmental review for determining the boundaries of the expanded Research Natural Area (RNA). RNAs are designated for the protection of public lands having natural characteristics that are unusual or that are of scientific or other interest. The SBMRNA was designated because of the unique vegetative 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 1-2 along with the area of the Serpentine ACEC and the SBMRNA. The acreages of these areas are shown in Table 1-1, with a breakdown of BLM, other agencies and private land ownership in the planning area.

**Table 1-1. Land Ownership in the Planning Area**

<b>Ownership</b>	<b>Clear Creek Management Area (acres)</b>	<b>Percent of CCMA</b>	<b>Serpentine ACEC (acres)</b>	<b>San Benito Mountain Research Natural Area (acres)</b>
BLM	63,197	83.3	30,968	4,082
Private	10,668	14.1		
State	1,964	2.6		
<b>Total</b>	<b>75,829</b>	<b>100.0</b>	<b>30,968</b>	<b>4,082<sup>a</sup></b>

<sup>a</sup> Boundaries and final acreage are to be determined by this planning process. Previous size was 1,870 acres including the San Benito Mountain Wilderness Study Area with 1,488 acres.

## **1.3 BACKGROUND**

The Clear Creek Management Area has a long history of use and land use planning. The geologic natures of the area (with many minerals including nickel, mercury, chromium, copper, magnisite and naturally occurring asbestos in serpentine soils) lead to intense scrutiny of the area. The following relates some of the previous planning efforts and general history of recreational use to help the reader understand where we are and how we got there.

### **1.3.1 Planning History**

The Hollister Resource Management Plan (RMP), adopted in 1984, provides management guidance for the Clear Creek area. The RMP outlined management goals and resource management decisions, and established the 30,000 acre Clear Creek Serpentine Area of Critical Environmental Concern within the 75,000 acre CCMA. It expanded the San Benito Mountain Natural Area to about 2000 acres. This RMP incorporated the existing OHV designations, which were originally adopted in 1982. The Hollister RMP also called for the preparation of watershed management guidelines (Best Management Practices) that were completed in 1984. These measures outlined management practices to control erosion and reduce sediment transport.



New Idria mercury mine

In 1986, a more detailed activity plan was prepared for the CCMA, to implement decisions adopted in the Hollister RMP and to incorporate the “Best Management Practices” from the watershed management guidelines. This Clear Creek Management Plan was developed to manage a complex ecosystem comprised of sensitive and unique plant communities, a highly erosion-prone watershed, and unique serpentine soils containing naturally occurring asbestos.

In 1993, a draft Environmental Impact Statement was issued for the Clear Creek Management Area, in which six alternatives for management were analyzed. Alternatives ranged from continuing the existing management with the majority of routes and areas open, to OHV closure with vehicles limited to a small network of roads. After public comment, involvement with the Clear Creek Technical Review Team, intensive review of comments, and re-analysis of data, the BLM issued a final EIS (FEIS) in 1995 with a substantially modified proposed action. The text of the modified Alternative 3 is contained in section III of the ROD (1999).

The 1995 amendment to the Hollister RMP re-evaluated existing land use decisions. This amendment was based upon new information which became available on the asbestos related health risks and rare plant species. This RMP amendment responded to these new issues and addressed existing public uses within both the CCMA and the Serpentine ACEC. In the Clear Creek Management Area RMP Amendment and FEIS (1995), the following issues were identified and addressed in the alternative development, analysis, and impact assessment:

- 1) airborne asbestos emissions,
- 2) public health risks associated with asbestos exposure,
- 3) asbestos sediment production and transport,
- 4) San Benito evening primrose recovery,

- 5) watershed and riparian zone management, and
- 6) existing multiple uses.

The management alternatives presented in that RMP amendment were based upon issues identified during the initial public scoping phase of the planning effort. Six alternatives were considered, and the environmental impacts of each alternative were analyzed in relation to varying degrees of public use. The Record of Decision (1999) for the CCMA RMP Amendment approved the Modified Alternative 3 – Dispersed OHV Use. This current RMP Amendment for the CCMA would implement specific route and area designations and analyzes the overall environmental effects. This DEIS addresses the impacts of adopting these designations by:

- 1) taking into account any new or significant planning issues;
- 2) ensuring that the Plan’s conservation strategies and designations complement each other; and
- 3) describing and responding to any additional cumulative impacts.

The plans identified above have been reviewed to determine whether the proposed action conforms to the terms and conditions of the land use plan as required by 43 CFR 1610.5.

### **1.3.2 Use History**

There exists a large network of backcountry roads and trails throughout most of the CCMA. These roads and trails were developed in conjunction with timber and mining operations prior to 1970. Since that time, they have become a challenging OHV recreation experience.



Molina Ghost Run Off Road Event

Circa 1969-1970, the Panoche Hills/Mercy Hot Springs area located approximately 20 miles to the north was closed to OHV use because of resource management concerns. In the 1970’s the CCMA, then referred to as the Clear Creek Recreation Area, became popular particularly with motorcycles for

OHV use. In 1972, the San Benito Mountain Natural Area was closed to off-road vehicle use. Initial OHV designations for the CCMA were established in 1982. The designations included:

- 1) 16,000 acres designated as limited, primarily in Clear Creek Canyon, San Carlos Creek, and Sawmill Creek, with vehicle travel limited to designated routes and areas;
- 2) approximately 2,000 acres designated as closed; and
- 3) 25,000 acres designated as open to vehicle use.

This 1982 plan identified a number of concerns, including, the presence of airborne asbestos, and the continuation of present patterns of OHV use further degrading resources by contributing to sedimentation and threatening populations of federally protected plant species. Implementation of these designations was to proceed with priority given to protection of endangered plant habitat, archeological sites, severely eroding hill climbs, and the Natural Area. The Hollister Resource Management Plan (1984) reaffirmed these designations. A Clear Creek Management Plan was completed in 1986 that carried forward existing designations with only minor modifications.

## **1.4 PURPOSE AND NEED**

The purpose of this Draft Plan Amendment and Draft Environmental Impact Statement (DEIS) is to:

- Designate routes of travel and areas for motorized vehicle access as Open, Closed or Limited.
- Designate boundaries of the expanded San Benito Mountain Research Natural Area (SBMRNA) and designate it an Area of Critical Environmental Concern (ACEC), and
- Incorporate acquired lands made through previous land tenure adjustments into the Clear Creek Management Area (CCMA).

The Record of Decision (ROD) for the Clear Creek Management Plan Amendment (1999) designated the Clear Creek Management Area (CCMA) a **Limited Use Area** for Off-Highway Vehicle (OHV) use) and documented approval of the proposed action in the modified Alternative 3. This Draft Plan Amendment adopts the **Limited Use** designation for the CCMA, with all vehicle travel restricted to designated routes and areas. The Limited Use designation requires that vehicle travel be restricted to designated open or limited routes and areas. The Interim designations established with the ROD (1999), allowing vehicle use on existing routes unless signed or physically closed, will no longer be in effect upon approval of this plan amendment. This plan amendment evaluates routes and areas within the CCMA through a deliberative process involving evaluation criteria and designates routes and areas within the CCMA as Open, Closed or Limited.

This present process addresses identification, evaluation, and designation of specific routes and areas within the broader Limited Use area designation for the CCMA. Cross-country travel is no longer allowed within the CCMA except for designated open barrens. Criteria outlined in the ROD (1999) to determine whether routes should be designated opened or closed include:

- proximity to sensitive resources (stream crossings, special designations, Research Natural Area, biological and cultural resources, mine sites),
- private land,
- erosion hazards and maintenance concerns,

- motorized and non-motorized recreation opportunities, and
- administrative and local access.

This environmental analysis refines the screening criteria and procedures for implementing route and area designation as open, limited, or closed. The analysis also defines where route rehabilitation and restoration is appropriate. Restoration of closed routes will be analyzed under a subsequent environmental analysis.

The ROD (1999) also requires environmental review for determining the boundaries of the expansion of the San Benito Mountain Research Natural Area to approximately 4,082 acres. The environmental analysis for route designation, barrens designation, and expansion of the San Benito Mountain Research Natural Area are concurrent in this environmental review process. When the CCMA Final EIS (1995) was released, the BLM also issued a Federal Register Notice proposing to change the name of the San Benito Mountain Outstanding Natural Area to the San Benito Mountain Research Natural Area. The ROD (1999) approved designation of the San Benito Mountain Outstanding Natural Area as a Research Natural Area (RNA). Instruction Memorandum CA-97-31 (Policy and Procedures for Establishing Research Natural Areas in California, 12/12/96) directed that all RNA's shall be designated ACECs and follow the ACEC designation guidance provided in 43 CFR 1610.7-2 and BLM Manual 1613. Upon approval of the previous CCMA Plan Amendment and ROD, the RNA should have also been designated as an ACEC. Upon approval of the proposed Plan Amendment, a Federal Register notice will be published affirming designation of the SBMRNA as an ACEC and specifying resource use limitations.

An additional purpose of this plan amendment is to incorporate acquired lands made through previous land tenure adjustments into the CCMA, for the purposes of route designation. These lands are located primarily in the northeast portion of the CCMA.

## **1.5 RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES AND OTHER LAND USE PLANS**

All BLM decisions and approvals will be consistent with applicable statutes, regulations, and policies, including but not limited to the following:

- Federal Endangered Species Act
- National Environmental Policy Act
- Federal Land Policy and Management Act
- National Historic Preservation Act
- Clean Water Act
- Clean Air Act
- Federal Executive Orders and the Code of Federal Regulations

The proposed action is in conformance with the following two Executive Orders:

1. Executive Order 11644 (*Use of Off-Road Vehicles on the Public Lands*), February 9, 1972 (87 F.R. 2877), to establish policies and provide for procedures to control and direct the use of Off-Highway Vehicles on Federal lands so as to (1) protect the resources of those lands, (2) promote the safety of all users of those lands, and (3) minimize conflicts among the various uses of those lands.

2. Executive Order 11989 (*Off-Road Vehicles on Public Lands*), May 24, 1977 (42 F.R. 26959), amending the previous order. This amendment strengthened protection of the lands by authorizing agency heads to (1) close areas or trails to OHVs causing considerable adverse effects and (2) designate lands as closed to OHVs unless the lands or trails are specifically designated as open to them.

The purpose of this project also includes compliance with 43 CFR 8342.1, which establishes criteria to consider when the BLM makes route and area designations. The BLM bases designations on the protection of resources of the public lands, the promotion of safety of the users of the public lands, and to minimize conflicts among the various users of the public lands. Designations must be in accordance with the following criteria:

- Areas and trails shall be located to minimize the damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats, and for the protection of vernal pools, riparian areas, and known and newly discovered occurrences of sensitive and rare plants and communities and related moderate to high potential habitat. Special attention would be given to protect endangered or threatened species and their habitats.
- Areas and trails shall be located to minimize conflict between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in the area, taking into account noise and other factors.
- Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails would be located in natural areas only if the authorized officer determines that off road vehicle use in such locations would not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

The designation of routes and areas will also comply with 43 CFR 8341 and 8342. The approval of a resource management plan amendment constitutes formal designation of off-road vehicle use areas. Public notice of designations will be provided through the publication of the notice as required by 43 CFR 1610.5-1(b).

This plan amendment would implement route designations for the limited use area designated in the 1999 Record of Decision for the CCMA Plan Amendment and FEIS (1995). This approved action directed the designation of approximately 270 miles of routes to be available for OHV use, and 937 acres of open area based upon resource management criteria. The existing open routes and areas in the BLM database (comprised of United States Geological Survey topographical map information, orthophoto quads, aerial photos, and Global Positioning System field mapping information) at time of approval of the Record of Decision, have remained open for vehicle travel until the two-step environmental process has completed the analysis for the disposition of routes and areas. No proliferation of routes was to be allowed, and new routes would not be considered for vehicle use until reviewed through environmental analysis.

The resource condition objectives were outlined in the ROD (1999) Approved Action; Alternative 3 – Dispersed OHV Use – Modified:

1. Reduce asbestos exposure and asbestos emissions while still providing opportunities for OHV use. Minimize dust emissions from main roads. Ensure that BLM employees meet all OSHA requirements.
2. Protect existing populations of the San Benito evening primrose and attempt to expand its range to areas that have moderate and high potential habitat for the species. Manage to ensure that sensitive species and communities maintain or enhance their condition.
3. Maintain or enhance water quality in all watersheds. Reduce erosion and sediment transport in all CCMA watersheds by reducing the number of miles and barren acreage available for vehicle use, and by implementing Best Management Practices for all road work.
4. Expand the boundaries of the San Benito Mountain Natural Area to include a contiguous cross-section of the unique serpentine and adjacent ecotones found only within this area, using easily identifiable geographical landmarks as boundaries, wherever possible.
5. Manage the Clear Creek Management Area as a **Limited Use** area. Based upon resource management criteria, designate routes and open play areas available for OHV use as resource conditions warrant.

The BLM must take into account the conservation of threatened and endangered plant and animal species and the ecosystems on which they depend, as it designs a motorized vehicle access network for the 75,000 acres of land within the CCMA. This area has unique vegetation communities and landforms associated with the serpentine soils. With its proximity to the growing populations of the San Francisco Bay area and San Joaquin Valley, the CCMA is subject to increasing demand for recreation. Increasing loss and fragmentation of species habitat, has led to the need for a motorized vehicle access network in the CCMA that meets the public's recreational needs, but does so in a manner compatible with ongoing programs to conserve plant and animal species and their habitats.

Implementation of the route, area, and boundary designations on public lands requires approval of the BLM's California State Director through a Record of Decision (ROD), following the resolution of any protests. This approval includes the amendment of the Hollister RMP for the CCMA to incorporate the route network and RNA boundaries as a component of the plan.

## **1.6 GOALS**

The general goal of this Draft Plan Amendment is to establish a clear and understandable route network, which allows users to clearly understand the appropriate type of use for each area. Specific goals are as follows:

- to provide a wide range of recreation opportunities and experiences;
- to manage recreation use to minimize user impacts to the environment;
- to emphasize the use of public outreach to increase public awareness and sensitivity to resources; and
- to adaptively manage changing visitor use patterns.

The designations will comply with current regulations, reflect changes on the ground, analyze changes in the potential impact of a route to sensitive natural, cultural, and environmental resources, and correlate actual use to the formal route designation.

This Plan amendment will establish a methodology to define and assess routes that may be used for future analysis of routes. Construction of new routes is outside the scope of this DEIS. The scope of this project does not include amending the current multiple use class (Limited) of the project area.

## **1.7 CONSTRAINTS**

Each alternative follows the CCMA Plan Amendment's approved Modified Alternative 3 and is consistent with the EIS (1995). The decisions made within this DEIS on specific route and area designations, and SBMRNA/ACEC boundary designation are to be consistent with this approved alternative, as specified in the resource condition objectives. Additionally, the Biological Opinion rendered by the Fish and Wildlife Service on the management of the CCMA (1997) will contribute to development of the preferred alternative.

BLM used the best available data for decisions on process and evaluation of resource conditions and impacts, implementation of monitoring, enforcement, route restoration and route maintenance. Assessments of route condition and soil loss support decisions used in route designations. Information gathered in the future may be sufficient to require a re-evaluation of, and possible change in, route and area designation. Route designation decisions need to be made in concert with decisions on barren use designations and San Benito Mountain Research Natural Area boundary expansion.

Public lands within the CCMA adjoin with private lands and lands managed by other agencies. The proposed actions and decisions only apply to lands managed by the BLM. The owners and managers of other lands may allow, close or restrict the use of segments of routes that cross their lands at any time.

Some routes on public lands are also county roads. The route of travel designation does not affect the county's prerogatives or responsibilities for these roads. Nor does the designation affect laws and ordinances that apply to county roads. The designation of a route of travel does permit the BLM to show the route on BLM maps.

## **1.8 ROUTE AND AREA DESIGNATION**

Three key concepts are critical to understanding route designations, the alternatives, and the scope of a decision: 1) the definitions of Open, Closed and Limited routes and areas, 2) casual use versus authorized use, and 3) access rights.

### **1.8.1 Definitions**

Route designation definitions for "open", "closed", and "limited" routes are as follows:

**Open Route.** Access on route by motorized vehicles is allowed. Specific uses with potential for resource damage or significant conflict with other use may require specific authorization.

**Closed Route.** Access on route by motorized vehicles is prohibited except for: (1) fire, military, emergency or law enforcement vehicles when used for emergency purposes; (2) combat or combat support vehicles when used for national defense purposes; (3) vehicles whose use is expressly authorized by an agency head under a permit, lease, or contract; and (4) vehicles used for official purposes by employees, agents, or designated representatives of the federal government or one of its contractors. Use must be consistent with the multiple use guidelines for that area.

**Limited Route.** Access on a route by motor vehicles may be limited to use in one or more of the following ways and limited with respect to:

- Type of vehicle
- number of vehicles allowed
- time or season of vehicle use
- permitted or licensed vehicle use only
- establishment of speed limits

**Open Area.** An area with specific boundaries where motorized vehicle use is allowed and is not constrained to a specific route of travel.

### **1.8.2 Public Recreation Use versus Administrative Use**

Public recreation use includes casual use of public lands in the context of motorized-vehicle access, defined as the use of routes not requiring a specific authorization. Public recreation also includes authorized use where the use of routes is approved through a permitting process for specific activities (organized events require a special recreation permit). All public recreation use, whether casual or authorized through special recreation permit is subject to the designation of routes as “open”, “limited”, and “closed.” Where there is a requirement for occasional access associated with public recreation use and it is determined that unlimited casual use may cause undesirable resource impacts, routes would be designated “closed” and available for use only by the authorized party. In such circumstances, the authorized use of a “closed” route usually limits this use in some manner or requires mitigation in some form. An additional subset of routes would be designated as Limited for “administrative use” by permittees, licensees, rights-of-way holders, and the Federal government and authorized representatives. These routes would not be available for public recreation use. These routes differ from closed routes, in that they would be regularly maintained and would not be considered for restoration. Access for the use and enjoyment of private lands would be addressed on a case-by-case basis where private landowners are adversely affected by route designation decisions and upon the occasion of receiving an application for right of access.

### **1.8.3 Access Rights and Mineral Development**

The decisions will not affect any right of access that may be determined to exist to private lands in CCMA, including any Revised Statute 2477 right-of-way. As noted above such access rights and specific requests for access would involve separate and independent analyses and decisions. A resource management plan or plan amendment decision also does not affect current or future opportunity for any party to assert a claim for right of access under R.S. 2477. Therefore, the array of alternatives does not address general or specific rights of access over federal lands in CCMA. However, it is intended that this document would address an anticipated general level of vehicle access to private land so that it could satisfy the requirement for NEPA analysis for any such requests

in the future. This DEIS does not address the existence of right of access under RS 2477 or the case that may exist for such right as may be brought forward by any entity or party.

A decision on this DEIS will also not alter mineral rights or access and other rights pertaining to mineral development. In addition this DEIS would not satisfy NEPA compliance requirements for access associated with a mining plan of operation or other large-scale operation involving the use of specialized commercial or industrial equipment, road reconstruction, etc.

#### **1.8.4 Incorporate Acquired Lands Made Through Previous Land Tenure Adjustments**

Newly acquired lands are incorporated into this document specifically for designation of routes and areas, and boundary clarification for the SBMRNA. Additionally, this DEIS would not address NEPA compliance requirements for access associated with any other type of use or resource (e.g. rights-of-way, land use permits, grazing, etc.) of these new acquired lands.

### **1.9 ROUTE DESIGNATION DATABASE**

The designations proposed in this plan amendment are based upon the best science and data reasonably available at this time. Between January 2001 and August 2003, field crews inventoried nearly 440 miles of motorized access routes within the CCMA. Routes were recorded using global positioning system technology. Information relating to type of route and trail maintenance objective, location, and pertinent features were recorded, along with assessment according to State of California soil loss standards. This information was transferred into the resource planning team's Geographic Information System (GIS) and Access databases. These inventoried routes are shown on Map 1-3 and are the database used in this route designation process.

BLM has commissioned aerial over flights during 2004 to compare the inventoried routes to those visible from the air using the latest digital imagery. These data are not yet available. The number of existing routes to be shown in this aerial imagery and not surveyed by field crews is roughly estimated at 15 percent of the total miles or routes. Nevertheless, the baselines for inventoried routes used in this analysis are those surveyed by field crews between January 2001 and August 2003.

Over the past several years, many studies were completed within the CCMA, relating to ecology of the federally protected San Benito evening primrose, watershed analysis for erosion and sedimentation, water quality, asbestos exposure, and analysis of the barrens. This information was used to ensure that the designations meet both access and resource needs.

In conjunction with the Technical Review Team (TRT) for the CCMA, extensive evaluation criteria were developed for screening the routes and areas evaluated in the designation process. This designation project will complete a site specific analysis for each route within the inventory (using the criteria identified in Chapter 2) to arrive at the designated open and limited route network. Upon approval of the proposed Plan Amendment, a new user map would be issued in the fall 2004, clearly identifying designated routes and areas where motorized vehicle use is authorized. Each individual route and area will have a designation record, outlining the criteria and rationale for designation.

### **1.10 IMPLEMENTING ROUTE AND AREA DESIGNATIONS**

There is an on-going debate about signing of routes relative to route designations. The two extremes of the debate can be simply stated as "Closed unless signed Open" or "Open unless signed Closed".

The BLM's National Management Strategy For Motorized Off-Highway Vehicle Use On Public Lands (2001) does not recommend a default management strategy related to route designations. Until the designation process is complete, current interim guidance (ROD, 1999) for in the CCMA allows OHV use on all routes which are not signed or physically closed. It would be a formidable task to attempt to sign or physically close all routes or areas within the CCMA where OHV use would not be authorized.

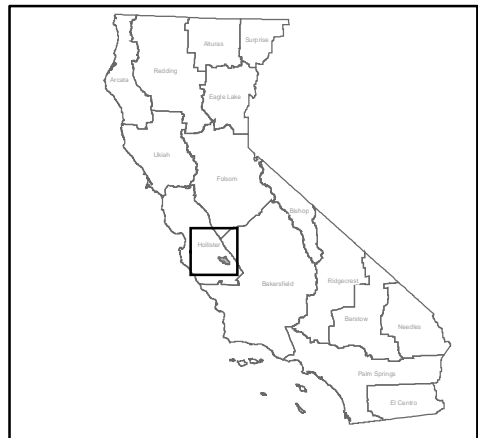
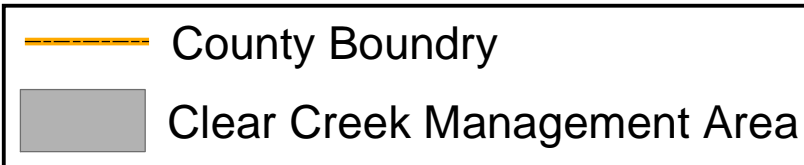
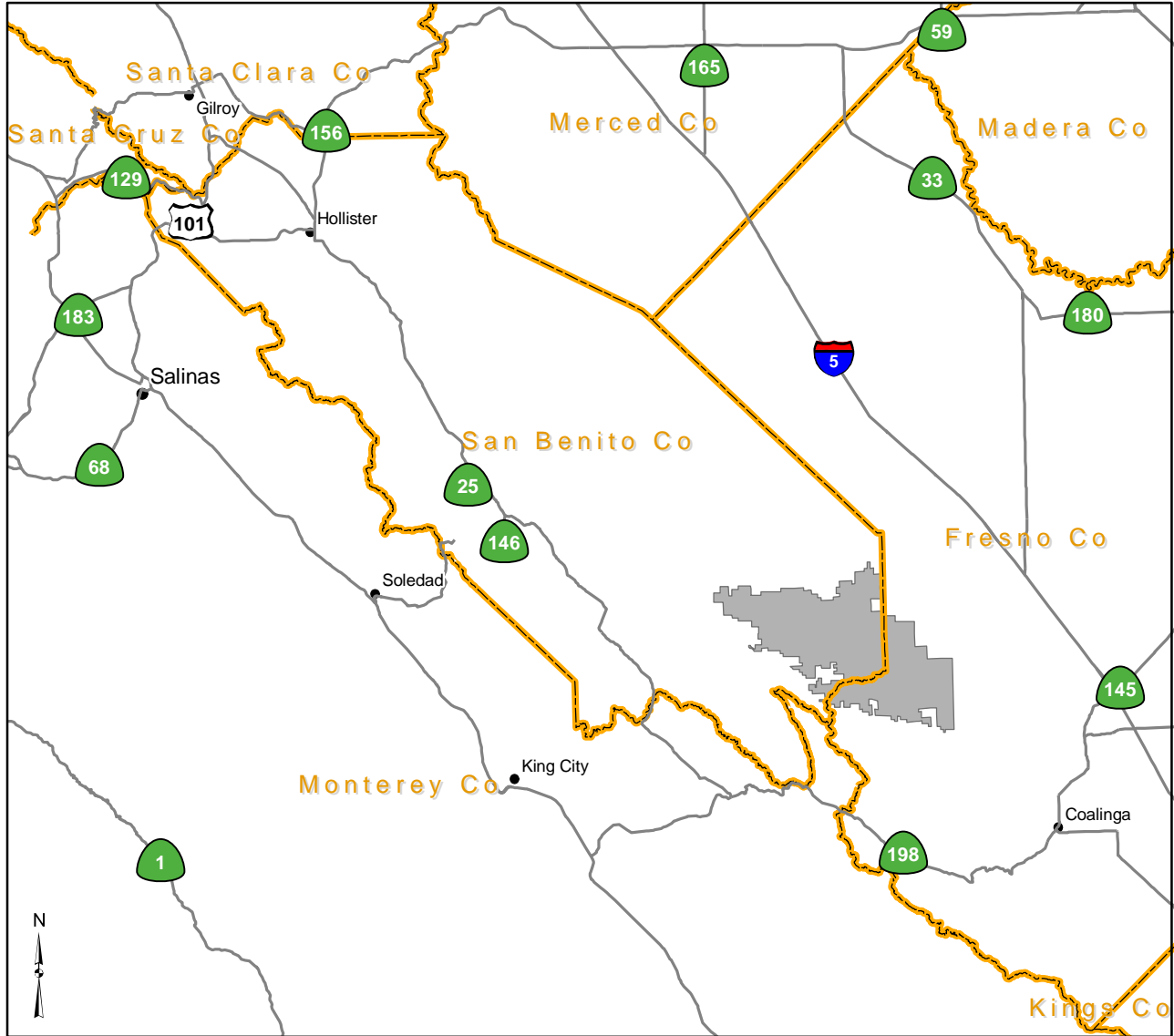
The BLM's management strategy and guidance, in compliance with the CFR, are that OHV use shall be restricted to open designated routes, and that these open designated routes shall be clearly identified so that the public will be aware of locations where OHV use is authorized. BLM will employ a combination of these signing strategies, and use the best techniques for an area. To a certain degree, there will be experimentation to solve problems and increase visitor compliance. In the CCMA, the BLM will concentrate on signing the open routes and problem closed areas. The route designation remains the same whether it is signed or not. The user is responsible for being aware of which routes are open for OHV use.

By concentrating on signing of open routes, BLM will emphasize to the visitor what is available for use and not on what is closed. This will also maintain the wild-land character of the CCMA and minimize the cost of signing such a large area. Identification of designated routes and areas will be accomplished by route markers, information kiosks, and posting of appropriate signs. Additionally, BLM will prepare a map and brochure to identify open routes, present an appropriate land use ethic, and explain the **Limited Use** concept. Large signs indicating "**Limited Use Area** – Vehicle Travel Limited to Designated Open Routes and Areas" will be installed at major entry points and at congregation areas.



BLM fencing along sensitive species habitat

# Clear Creek Management Area Locator Map



**Chapter 2 – Alternatives**

2.1	Introduction.....	2-1
2.2	Criteria.....	2-2
2.3	Planning Criteria.....	2-3
	2.3.1 Common to All Alternatives.....	2-3
	2.3.2 Common to All Alternatives But the No Action Alternative.....	2-5
	2.3.3 Route and Barren Designation Methodology.....	2-5
	2.3.4 Route Designation Criteria.....	2-7
	2.3.5 Barren Area Designation Criteria.....	2-11
	2.3.6 San Benito Mountain Research Natural Area Boundary Designation.....	2-13
2.4	Alternatives Description.....	2-14
	2.4.1 Alternative A – Proposed Action.....	2-15
	2.4.2 Alternative B – Enhanced Recreation Opportunities.....	2-20
	2.4.3 Alternative C – Enhanced Resource Protection.....	2-22
	2.4.4 Alternative D – No Action.....	2-23
2.5	Mitigation Measures Applicable to All Alternatives But the No Action Alternative.....	2-25
2.6	Modification of Route Network.....	2-27
2.7	Implementation.....	2-28

## CHAPTER 2 ALTERNATIVES

### 2.1 INTRODUCTION

This chapter describes the alternatives considered to fulfill the purpose and need for off-road vehicle designations for routes and areas (barrens<sup>2</sup>), designation of the expanded boundaries of the San Benito Mountain Research Natural Area (SBMRNA) and inclusion of acquired lands within the CCMA. All alternatives would conform to the Resource Condition Objectives outlined in the modified Alternative 3 (ROD, 1999) and the preferred alternative will conform to a Biological Opinion to be rendered by the Fish and Wildlife Service on management of the CCMA (2004). This document analyzes three interrelated designation procedures in the selection of the Approved Plan Amendment.

The BLM designates areas as “limited” where it must restrict OHV use to meet specific resource management objectives. The CCMA was designated a Limited Use Area, with selection of the modified Alternative 3 (ROD, 1999). That ROD temporarily authorized use of existing open routes and areas (in the database of routes) until the environmental review process analyzed the disposition of routes and areas. In conformance with the National Management Strategy For Motorized Off-Highway Vehicle Use On Public Lands (2001), where interim designations are implemented and vehicle use is restricted to existing or designated roads and(or) trails, a plan amendment to designate specific roads and trails on which vehicle use is allowed must be initiated. This plan amendment would incorporate the Limited Use Area designation for the CCMA and designate all specific routes (roads, ways, trails) and areas (barrens) as open, limited, or closed. Within the CCMA, Limited Use shall be defined as restricting OHV use to designated areas and trails. OHV recreation use would be allowed only on trails and areas that are signed for use. An additional subset of routes would be designated as Limited for “administrative use” by permittees, licensees, rights-of-way holders, and the Federal government and authorized representatives. These routes would not be available for casual recreation use. These routes differ from closed routes, in that they would be regularly maintained and would not be considered for restoration. A majority of closed routes would be identified and prioritized for restoration over a period of years. Restoration refers to reclaiming of closed routes to revert to a natural state over time and disappear into the landscape. Route restoration would be evaluated through a separate environmental analysis.

Four alternatives developed through the public participation process are described in this chapter and the environmental consequences of each alternative are discussed in Chapter 4. The alternatives considered are:

- Alternative A. Proposed Action,
- Alternative B. Enhanced Recreation Opportunities,
- Alternative C. Enhanced Environmental Protection, and
- Alternative D. No Action Alternative.

Each alternative addresses the designation of boundaries for the expanded San Benito Mountain Research Natural Area (SBMRNA) and designation of routes of travel and barren areas as Open,

---

<sup>2</sup> For the purposes of this document, “barrens” are defined as a general term applied to openings almost devoid of herbaceous or woody vegetation due to serpentine soils.

Closed, or Limited. Travel within Research Natural Areas is often restricted and the designation of routes must take into account the location of SBMRNA.

## **2.2 CRITERIA**

The BLM planning team developed extensive criteria in conjunction with the Technical Review Team (TRT) for the CCMA, for evaluating routes and areas in the designation process. These designation criteria address a variety of management issues and concerns, including compliance with statutory guidelines. There are many factors that contribute to deciding which existing routes and areas should be designated as open. The final designation of the route and barren network, and boundaries of the SBMRNA, 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. Designation decisions will 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. This process is standardized, repeatable, and can be logically followed; it assesses each route and area on its own merits and issues, and documents that assessment; systematically assesses both individually and cumulatively the effects of each route on biological, cultural, and natural resources; and establishes a clear link between the designation decision and the rationale for that decision. The process will consider the level of impact of each route and barren; 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.

The following statutory requirements represent some of the principal guiding criteria affecting motorized access.

### **Federal Endangered Species Act**

- Section 7 requires that the plan include steps to assist in the “recovery” of the federally threatened or endangered species.

### **National Environmental Policy Act (NEPA)**

- Fully disclose to the public the purpose, the full range of issues and considerations (including environmental), and details of the proposed action and a range of alternatives.
- Carefully evaluate the cumulative impacts of the proposed action. This analysis shall include: the current situation, as well as the foreseeable future; evaluation of the direct and indirect impacts; and a cumulative impact analysis evaluating biological, natural, and cultural factors, including evaluation of economic and sociological factors.

### **Federal Land Management Policy Act (FLMPA)**

- Manage public lands on the basis of multiple use and sustained yield;
- Resource values to be protected
- Certain lands are to be preserved in their natural condition
- Wild as well as domestic habitat is to be provided for;
- Provide for a balanced and diverse combination of recreational uses.

### **National Historic Preservation Act (NHPA)**

- Protect identified significant cultural sites.

Code of Federal Regulations, 43 CFR 8342.1

- The authorized officer shall designate all public lands (including areas, and trails) as either open, limited, or closed;
- Areas and trails shall be located in a manner to minimize impacts to physical resources (soils, watershed, vegetation, air, and other resources) and to prevent impairment of wilderness suitability;
- Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats;
- Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses;
- Areas and trails shall not be located in officially designated wilderness areas or primitive areas, and shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which established.

State Fish and Game Codes

- Establishes requirements protecting riparian habitat, particularly with respect to governing allowable levels of disturbance.

## **2.3 PLANNING CRITERIA**

Planning criteria guide the development of the Resource Management Plan amendment to ensure that it is tailored to the issues identified. Planning criteria are generally based upon applicable law, BLM guidance, the results of public participation, and coordination with other Federal, State, and local agencies. The planning criteria identified provide management guidance and are applicable to all action alternatives.

The Recreational Opportunity Spectrum (ROS) is a process where recreation area management objectives are defined through a planning process. The ROS process provides a foundation for defining classes of outdoor recreation environments, activities and experience opportunities. This environmental impact statement did not bring into play the ROS process to make decisions. In the future, the Hollister Field Office would update their existing Resource Management Plan and the ROS process would be implemented. The goals and management actions, utilizing the ROS classifications would provide direction for land and resource management on all public lands managed by the Hollister Field Office including the CCMA.

### **2.3.1 Common to All Alternatives**

The following are planning criteria and management guidance common to all alternatives:

- BLM would comply with the 1998 Programmatic Agreement (PA) between California BLM and the California State Historic Preservation Officer (SHPO). BLM meets annually with the California SHPO to renew this agreement. The PA was developed to fulfill the responsibilities of the National Historic Preservation Act (NHPA) and to implement the National Programmatic Agreement (NPA) between the BLM, the Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers. The PA is designed for the 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” (1998:2). The PA meets the Section 106 requirements of the 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”(NRHP) as cited in 36CFR800.1(a).

- Best Management Practices (BMP) related to watershed improvement and road maintenance projects would continue to be implemented to reduce erosion and off-site sedimentation transport. All maintenance work on designated routes would conform to the Route Management Objectives outlined in Appendix C, and comply with Monterey Bay Unified Air Pollution Control District and San Joaquin Valley Air Pollution Control District air regulations for airborne asbestos. BLM would continue to implement visitor controls to ensure visitor and worker safety during all phases of route work.
- BLM would obtain California Department of Fish and Game 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.
- Open or limited routes may be closed temporarily if necessary according to soil loss assessment, resource impacts, or required maintenance. Emergency limitations or closures are not OHV designations, but remain in effect until the adverse effects are eliminated, measures are in place to prevent their recurrence, or revised OHV designations are adopted.
- There are two types of seasonal closures employed on the CCMA, wet season and dry season. In both cases, roads would remain open for administrative use. The dry season closure would reduce air emissions, thus protecting the public from these airborne emissions. The wet season closure would reduce rutting of roads and trails, reducing sediment transfer into the various watersheds. The **dry season closure** would be implemented to protect the visiting public from airborne emissions such as asbestos. Under Alternative C, all routes except R001 through R019 would be closed from June 1<sup>st</sup> through September 1<sup>st</sup>. All other alternatives would close routes according to the following procedures. The HFO personnel take air samples as part of their duties while working on CCMA. If at any time during the year a personal exposure limit is above 0.1, BLM would post warning notices throughout the CCMA. If this result persists for two consecutive weeks, BLM would close trails excluding R001 through R019 until the results are below the 0.1. The **wet season closure** procedures could be implemented after the annual total precipitation exceeds 8 inches. Once 8 inches of precipitation has been exceeded, the following would apply. Additional rainfall exceeding ½ inch within a 24 hour period or 1 inch within a 72-hour period would result in a three-day closure. Once the area has been closed, a field inspection would be completed prior to reopening in order to determine suitability of road conditions.
- All route maintenance activities would be addressed in an annual corrective route maintenance plan, and would undergo environmental review by appropriate staff. Route maintenance activities would be conducted in a manner that avoids impacts to sensitive resources, species, and habitats.
- Any and all route work would avoid a "may affect" situation for the San Benito evening-primrose (*Camissonia benitensis*). Accordingly, maintenance at some locations might be only partially implemented, or modified, or deferred.

- Routes that traverse abandoned mine lands would be designated closed, unless effectively fenced to prohibit access to mine areas.
- BLM would continue to evaluate conformity with California State soil loss standards. BLM would maintain and update the Access database structure for route inventory, soil loss standards, maintenance, and monitoring. Updates would be incorporated as route work and monitoring are completed.
- The current Clear Creek Technical Review Team is not sanctioned through the Central California Resource Advisory Council (RAC). The CenCal RAC was established and chartered under authority of the Federal Advisory Committee Act (FACA) (5 U.S.C.). A new advisory subcommittee may be established through the CenCal RAC to provide advice or recommendations related to management of the CCMA. Members would be selected to provide balanced representation and to include user groups, scientific disciplines, and regulatory officials.

### **2.3.2 Common to All but the No Action Alternative**

The following are planning criteria and management guidance common to all alternatives except the No Action Alternative:

- Routes that enter privately owned land would be designated as closed if requested by the private landowner. Landowners within the CCMA will be contacted during the public comment period. Any requests for closure would be incorporated into the Proposed Plan Amendment. BLM may negotiate reciprocal rights-of-way as appropriate to maintain the integrity of the route network.
- All lands recently acquired within the CCMA boundaries by BLM would be incorporated into this designation project and plan amendment for the purposes of OHV designations only. See Map 2-1 for the location of these newly acquired lands within the CCMA.
- The Research Natural Area expansion would be protected from mining.
- All routes within the CCMA would be designated as open, limited, or closed, and would be screened through the criteria in Appendix A and would include a designation record and rationale. All routes not designated open or limited, would be designated as closed. All barrens within the CCMA would be designated as open, limited, or closed, and would be screened through the criteria in Appendix B, and would include a designation record and rationale. All barrens less than 10 acres in size are closed as per the ROD (1999) and would remain so unless specifically designated as open. Within the CCMA Limited Use Area, all casual use would be restricted to designated open or limited routes. Routes selected for analysis in this Plan Amendment were from the existing database of inventoried routes (approximately 440 miles).

### **2.3.3 Route and Barren Designation Methodology**

This designation project would update previous designations of existing routes, based upon various management issues and significant concerns. A standardized and stepwise process is identified, whereby routes and barrens are evaluated relative to a list of criteria such as, resource sensitivity, soil

loss, manageability, intended route use, and recreation opportunity. From this evaluation of criteria a designation on use classification, open, limited, or closed, is made.

The first step in developing the route designations was to conduct a detailed field inventory and soil loss assessment of routes. This inventory was conducted from July 2001 to August 2003, with approximately 440 miles of motorized routes completed within the CCMA. GPS units were used to collect a variety of resource information for GIS applications and Access databases. Additional routes beyond this mileage may be considered for designation, but will have to complete the route inventory and soil loss assessment. Dynamac Corporation completed an analysis of the barrens in April 1998, after conducting a geomorphic field evaluation and inventory of the serpentine barrens within the CCMA. The objectives of this evaluation were to determine the degree of soil erosion and sedimentation; evaluate natural and human influences on sedimentation and erosion within the barrens; and to develop a barren inventory and ranking system.

Once the field data was collected, the designation planning teams began the work of identifying a revised network of open and closed routes and barrens within the CCMA. Using GIS maps and specific field knowledge, the designation team made full use of background data to determine whether a route or barren should be open or closed. This data included existing as well as potential environmental concerns that might constrain a route and barren network, including:

- T&E and sensitive species and habitats,
- Cultural and Paleontological resources,
- Riparian areas,
- Soil loss assessment.

Access requirements and other land use data were also mapped, including:

- Route type, condition and use,
- Topographical and hydrological information,
- Private land ownership,
- Abandoned mines,
- Recreation point data.

The BLM planning staff screened all routes and barrens within the existing inventory through the criteria tables (Appendix A and B), made recommendations on the designation, and prepared a written rationale. A Data Element Dictionary was developed for each of the resource screening criteria, representing the data on which decisions about authorized recreation vehicle use of routes and barren areas is based. The data element dictionary describes the allowed responses for each criterion. As routes and barrens 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 designation for authorized OHV use. Appendix A and B include the proposed designations and data tables that summarize the reasons why each of the enumerated routes and barrens considered during the

designation process were recommended as open or closed. Individual data records and evaluation forms may be viewed at the Hollister Field Office. The Designation Record and evaluation form would document final designation of routes and barrens and include necessary mitigation measures or restoration as needed. All data for the designations is managed in a relational database. Maps of the proposed vehicle designations and expansion of the SBMRNA are included in Appendix J. Implementation of the designations is outlined in Appendix C, Implementation Plan.

### **2.3.4 Route Designation Criteria**

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 could be used to reduce the expected motorized OHV impacts under each criterion. Mitigation, as used in the designation criteria process, refers to management actions that BLM could 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 would seek clarification from landowners about whether or not they wish to allow for OHV use. Should a landowner request it, the Bureau would close routes that traverse non-Bureau lands by closing the route back to the nearest intersections. The Bureau would seek reciprocal rights-of-way with private landowners as appropriate to provide access on primary route connectors. Reroutes to avoid non-Bureau lands would be evaluated under a separate Environmental Analysis, given sufficient recreation interest, adequate staff and sufficient funds. Mines would 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 would seek reciprocal rights-of-way with private landowners as appropriate to provide access on primary route connectors. Possible mitigation for mined lands would be to sufficiently prevent off route travel. Complete fencing of a route, to prevent public access to hazardous mine areas could be considered mitigation. Route closure due to private/state lands could possibly be avoided by building a new portion of route. New route construction is not analyzed under this DEIS.

#### **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, other special status species and 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. Special status 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 special status 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 the Clear Creek Canyon 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.



BLM implementation personnel repairing a fence along sensitive species habitat

### **SBMRNA/ACEC/WSA**

The management of the expanded San Benito Mountain Research Natural Area (approximately 4082 acres), including the Wilderness Study Area (WSA) CA-040-309 (1500ac), requires more restrictive use of OHV's. Routes within the RNA must not impair the intended purpose of the SBMRNA/ACEC, the long-term protection of the area's forests, barrens and soils, and the values for which it was created. Pursuant to 43 CFR 8342.1(d) routes shall be located on Research Natural Areas only if the authorized officer determines that off-road vehicle use in such locations would not adversely affect the natural, esthetic, scenic, or other values for which the area was established. Routes within the proposed expansion would be evaluated and would not determine that proposed expansion areas are no longer be suitable for RNA status. All affected routes would be evaluated following the criteria presented for the SBMRNA/ACEC designation and be consistent with the SBMRNA/ACEC expansion criteria.

**Mitigation.** The primary objective of WSA management is to return the WSA's natural character essentially unaltered by humans during the time it is being managed as a WSA. The WSA designation allows vehicle use only on the county route (R011) and the "Ridge Route," now called R010, R012 and R013. No other routes would be considered within this 1500 acre area. For the existing RNA and proposed expanded RNA, designated routes may need to be fenced or otherwise

limited to reduce potential impacts of OHV use off the designated route. No mitigation for considering additional routes is possible for the WSA, since only the current routes are authorized.

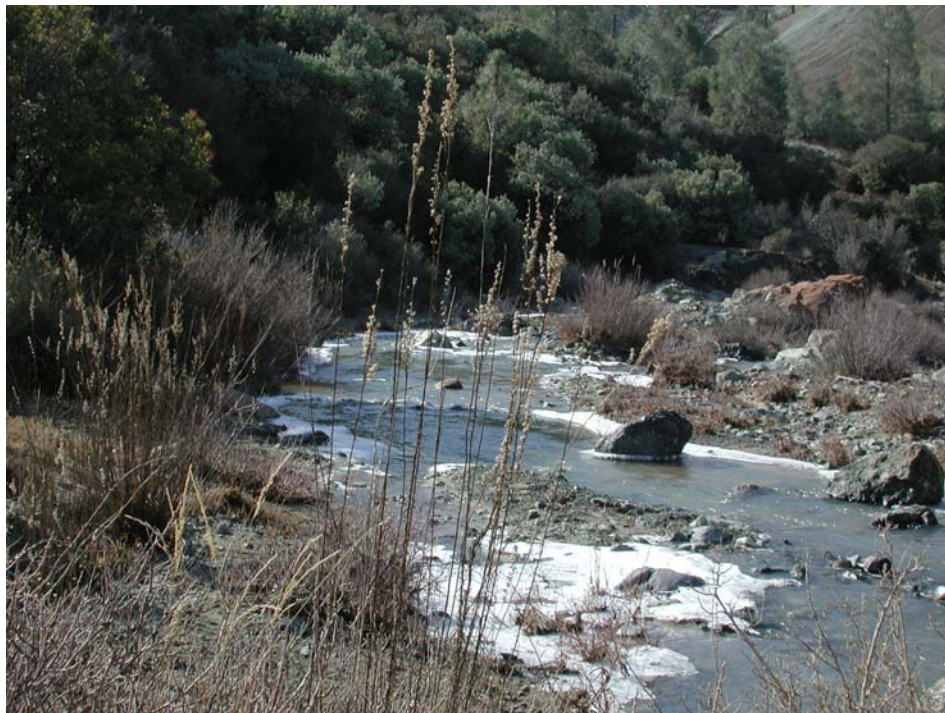
### **Interface with Closed and Proposed Closed Barrens**

A number of barrens have been closed along riparian corridors and within the WSA. Routes through barren areas are particularly susceptible to route proliferation and off route vehicle use. Routes through closed barrens would be avoided where possible.

*Mitigation.* Construction of fence or other barriers that control off-route use could be considered as mitigation for this criterion. Reroutes to avoid a particular barren or to change the location of the route to minimize impacts could also be considered, however they are generally outside the scope of this DEIS.

### **Riparian Areas**

Riparian areas provide specialized habitat for several sensitive species and can act to filter sediments. 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. This past practice is too destructive to be continued. Routes crossing streams can also be resource impairing, therefore 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.



Sensitive riparian habitat

**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 could 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**



Erosion and sedimentation located on a trail above sensitive plant species habitat

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 Soil Loss Standards. 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 would need to be carefully justified by comparing costs with benefits. Other problem areas could 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 would 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 plan's resource condition objectives. Routes should be selected that provide a wide spectrum of recreation use throughout the CCMA and provide a variety of difficulty levels. Consideration would 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**

While the trail maintenance objective would 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 would 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 management objective.

#### **Administrative Use/Rights of Way**

This criterion considers non-recreation uses of a route such as access to a communication site, access to state or private lands, authorized uses, and valid existing rights-of-way. Recreation may not always be appropriate for these maintained routes. When this is the case, the route would be Limited to Administrative Use. Administrative use designations would not be available for casual recreation use. Use would be restricted to permittees, licensees, rights-of-way holders, Federal government and its' authorized representatives. These routes differ from closed routes in that they would be regularly maintained and would not be considered for reclamation.

**Mitigation.** Designation as administrative use with appropriate restrictions may reduce potential OHV impacts.

### **Route Proliferation and Redundancy**

Route proliferation is clearly prohibited by the ROD. To the extent practicable route designations should be used to reduce route proliferation. 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, resource and user conflicts, proliferation, and contribution to route network.

*Mitigation.* Route proliferation could be reduced in some situations by barrier construction. Beyond the scope of this DEIS is the possibility of rerouting a portion of a route to take advantage of existing natural or human-made barriers.

### **Route Continuity**

Recreation use of OHV's is the dominant form of recreation in the CCMA. However, a variety of recreation uses need to be accommodated through the route designation process. On a given trail, these various uses may be in conflict, possibly creating safety concerns in addition to visitor frustration. Some routes are dead ends which are advantageous for some uses, such as hunting or camping, but may result in route proliferation at the dead end by OHV use. Logically connecting routes are emphasized when considering recreational OHV use. Certain dead end routes and spur routes may be desirable with appropriate limitations on the use or types of vehicles.

*Mitigation.* Rather than arbitrarily close all dead end routes, it may be worth experimenting with installing signs letting users know the route is a dead end, closed ahead, or designating certain limitations on OHV use.

### **2.3.5 Barren Area Designation Criteria**

These criteria were selected following public comment, TRT discussion, staff meetings and interviews with professionals working in other areas with OHV use. Where possible, mitigation measures are discussed that could be used to reduce the expected motorized OHV impacts under each criterion. The Geomorphic Field Evaluation of Serpentine Soil Barrens, CCMA (Dynamac Corp., 1998), contains useful data to be considered in the designation process. The objectives of this field evaluation were: to determine the degree of soil erosion and sedimentation taking place within the barrens; to evaluate natural and human influences on sedimentation and erosion within the barrens; and to develop a barren inventory and ranking system. Key information from this study used in this designation process include; stream orders present, hydrographic position, vegetation cover, vegetation boundary/buffer, amount of gullying, slope, armoring present, sediment trapping features, and contribution of sediment to sub-watersheds with high erosion rates. For the purposes of this document "barrens" are defined as a general term applied to openings in serpentine hillslopes larger than 10 acres which support almost no herbaceous or woody vegetation.

### **Soils**

The serpentine watersheds in the CCMA contain soils formed from highly sheared, and readily eroded, serpentine rock containing abundant chrysotile asbestos. Soils of barren areas are critical for supporting existing plant species and communities, and as potential habitat. Eroded soil is transported down-slope by various erosion processes and contributes to off-site transport of sediments. Vehicle use on these barren slopes disrupts the natural soil crust and surface gravel layer,

resulting in increased erosion. The lack of vegetation on these soils and the particular soil characteristics, are part of the reason these areas are desired by many OHV recreation users.

### **Erosion and Sedimentation**

Concentrated OHV use in any particular area within the CCMA is likely to produce some off-site sedimentation. Resource condition objectives constrain activities leading to erosion and off-site delivery of the eroded material. Methods to reduce off-site sediment transport are avoiding or reducing erosion, assuring that sediment producing activities are adequately separated from active stream channels, and installing structures designed to capture sediments before delivery into active streams. Factors to be considered in evaluating a barren include; the potential for off-site sedimentation, sediment yields to sub-watersheds with high erosion rates, and the feasibility of capturing sediments naturally or with installation of sediment traps. Dynamac's (1998) data for each barren was used in evaluating this criterion.

### **Soil Characteristics**

While all barrens have some soil characteristics in common, each needs to be evaluated individually. The barren's slope, aspect and position hydrographically, all contribute to the area's suitability and sustainability for concentrated OHV use. Additionally, it is important to review soil depth, and amount of rock mixed in the soil, and whether an organic layer exists. The degree of armoring is a factor indicating low levels of use and the ability of the barren to sustain itself over time.



Off road recreation on the barrens

### **Recreation**

OHV recreation users have been riding on the barrens with increasingly frequency over the past 40 years. Besides increases in the number of people taking part in OHV related activities, advances in

motorcycle performance have contributed to this trend. The barrens within the CCMA provide a wide spectrum of terrain from broad rolling ridgelines to steep hill-climbs. Some of the barren areas are therefore available for even the beginner, while some hill-climbs give professional motorcyclists a challenge.

### **User Demand**

Not every barren can provide characteristics of interest to each OHV recreation user. The designation process should keep in mind the desirability of a wide variety of riding experiences and levels of expertise of the OHV user. It is also important to take into account proximity to staging areas. Dispersed opportunities away from the Clear Creek Canyon may also be considered. An additional factor is the ability to provide recreation opportunities on a sustained basis and whether use of the barren would result in a reduction in the quality of the recreation experience compared to the current condition. These factors would be addressed in the written rationale portion of the Designation Record.

### **Vegetation**

The barrens support sparse but diverse communities of vegetation which grows on them. These areas are characterized by a general lack of shrub or tree cover, a sparse but distinctive cover of native annual plants, and a high percentage of exposed bare ground and /or gravel lag. Several of the designation criteria characterize the barren's existing condition, and potential for on and off-site disturbance relative to vegetation.

### **Uniqueness of Vegetation and Potential for Damage**

All but the most heavily used portions of some barrens have unique assemblages of vegetation. This uniqueness results from the plants' need for special adaptations, to thrive on the especially challenging serpentine soils. Few plants have been able to survive and compete in the presence of the rigors presented by high nickel and low calcium concentrations coupled with harsh climate and intense sunlight. Some barrens are known to provide habitat for special status plants. While special status plant species would be avoided and protected, there may be barrens that can be designated open, when sufficient natural or human-made barriers fully protect special status plant populations. Protection of the plant communities unique to the barren areas are an important consideration.

### **Potential for Limiting Use to Designated Areas**

Some barrens in the CCMA are adjacent to or provide access to areas that are sensitive (riparian areas, sensitive plant habitat, unique forest communities). Vegetation boundaries are important for confining use to open barrens and providing a buffer from sensitive areas. Protection of sensitive areas adjacent to a barren and limiting route proliferation are important factors in evaluating designation of the barren.

### **Potential for Impact to Threatened, Endangered and other Special Status Species**

Threatened, endangered and other special status species shall be protected from the impacts of OHV use. OHV use on adjacent barrens could impact special status species habitat by off-site sediment delivery, riders going outside of the designated open area onto sensitive habitat. Factors considered under this parameter include the presence of special status species habitat nearby, the proximity of

OHV use to special status species and their habitat, and the potential contribution to the degradation of that habitat.

### **Pristine/Natural Condition**

This category seeks to protect the currently least impacted barrens and the San Benito Mountain Research Natural Area and ACEC (including the Wilderness Study Area). In protecting these areas, the Bureau is fulfilling a Resource Condition Objective stated in the Record of Decision (1999) of maintaining intact portions of the ecosystem for proper function and comparison monitoring, and maintaining an aesthetic and wilderness character of some areas of the CCMA.

#### **Pristine**

A small number of barrens in the CCMA have had little or no OHV use. They tend to be characterized by having intact gravel lag, few gullies or rills, and often have reddish or brown soil away from rock outcroppings in contrast to the white soils typical of high OHV use areas. The few remaining intact barrens are critical to maintain for studying contrasts to the effects of concentrated OHV use. Pristine barrens would not be selected for concentrated OHV use. OHV use of non-pristine barrens adjacent to, or near, pristine barrens must be carefully evaluated for the potential to impact pristine barrens.

### **SBMRNA/ACEC/WSA**

The San Benito Mountain Research Natural Area and ACEC completely encompass the San Benito Mountain Wilderness Study Area, managed under the Interim Management Guidelines for Wilderness Study Areas. OHV use of barrens within either the WSA or the SBMRNA is incompatible with the values for which these areas were established. It is also important to avoid impacting either of these areas in ways inconsistent with their intended purposes. Barrens that are contiguous to the existing RNA and/or encompassed within the area of the expanded RNA boundary, would not be considered for OHV use in the designation process. An additional factor is whether the barren is within an existing riparian closure or special management area.

### **2.3.6 San Benito Mountain Research Natural Area Boundary Designation**

Research Natural Areas (RNAs) are areas that contain important ecological and scientific values, and are managed for minimum human disturbance. Because natural processes are allowed to dominate, an RNA is an excellent control site for similar plant communities that are being actively managed. Non-manipulative research and baseline data gathering are important components of RNA. An RNA is designated because the land has one or more of the following characteristics:

1. a typical representation of a common plant or animal association;
2. an unusual plant or animal association;
3. a threatened or endangered plant or animal species;
4. a typical representation of common geologic, soil, or water features; or
5. outstanding or unusual geologic, soil, or water features.

The RNA shall be managed to preserve and protect the natural plant community attributes for which the area was formally recognized. Adjacent lands should not have intensive use, unless an adequate buffer can be provided. Any potential problems, such as trespass, accessibility, and conflicting uses would be evaluated, and taken into account in the designation process. A primary consideration in

designating the boundaries of the RNA shall be incorporation of those areas that best represent the unique serpentine ecosystems and plant communities and that contribute to the overall protection of sensitive species and resources.

Expansion of the SBMRNA would incorporate areas containing unique vegetation communities, habitats, and species into the Research Natural Area, benefiting their long-term protection. The SBMRNA was created to provide special resource management protection for this unique environment, with these three goals: 1) to ensure survival of the conifer forests; 2) to maintain the vegetation and soil resources in as natural a condition as possible; and 3) to provide opportunities for scientific and academic research in this unique ecosystem. Expansion of the boundaries of the SBMRNA would be based on:

- Protection of the San Benito evening primrose (*Camissonia benitensis*), sensitive species, potential, and occupied habitat,
- Inclusion of the unique vegetation communities (forest, T&E, and sensitive species),
- Inclusion of watersheds/sub-watersheds to the extent possible, for protection of riparian habitat,
- Inclusion of the transition zone between the serpentine and non-serpentine soils,
- Delineation using identifiable geographical landmarks (routes, trails, ridges, etc.),
- Reducing the impacts of OHV use and other conflicting uses,
- Authorizing only those trails and areas, as determined by the authorizing officer, which would not adversely affect the natural, scenic, esthetic or other values for which established.

An Interim RNA Management Plan, describing management objectives for the RNA is in Appendix E. This plan outlines the development of prescriptions that will permit natural processes to continue without interference. It will also determine what characteristics of the habitat are important and what management response will be to changes in these characteristics, along with monitoring requirements, and specifying resource use limitations. It is important to avoid impacting these areas in ways which could adversely affect the natural, scenic, or ecological values for which established.

The primary purpose for designating the RNA was to preserve the area for education and research, and this will drive the designation process. While not originally intended for archeological or anthropological research, the SBMRNA may also yield important paleoenvironmental data that would correspond to the human-caused changes in the CCMA landscape over the past few hundred years to several thousand years. Identifying routes, trails, and barrens contiguous to the existing RNA and/or encompassed within the RNA boundary expansion, and evaluating them with respect to long-term management of the RNA and addressing potential management conflicts will be an important consideration in the designation process. Maps of the proposed expansion of the SBMRNA are included in Appendix J.

## **2.4 ALTERNATIVES DESCRIPTION**

The four alternatives considered to fulfill the purpose and need for the projects are described in this section. Alternative A the Proposed Action is discussed first and in depth. The description of each of the other alternatives incorporates the Alternative A discussion by reference; only those components that differ from Alternative A are presented. A summary of the key characteristics of the alternatives including miles of routes, acres of barrens, and acres of the RNA expansion is presented in Table 2-1

Table 2-1. Key Characteristics of the Alternatives

	ALTERNATIVE			
	A. Proposed Plan	B. Enhanced Recreation Opportunities	C. Enhanced Environmental Protection	D. Not Action
<b>Route Designation (miles)</b>				
Open	209	230	198	398
Limited	9	15	5	0
<b>Total Miles – Recreation Use</b>	<b>218</b>	<b>245</b>	<b>203</b>	<b>398</b>
Limited Administrative Use	28	25	27	0
Closed				
<b>Trail Types (miles)</b>				
Paved	9	9	9	9
Improved	40	40	40	42
4-wheel Drive	26	26	26	30
Jeep	60	66	52	80
ATV	31	35	28	56
Single Track	80	94	75	181
<b>Total Miles - Maintained</b>	<b>246</b>	<b>270</b>	<b>230</b>	<b>398</b>
<b>Barrens (acres)</b>				
Open Barren	466	813	466	2800
<b>Research Natural Area (acres)</b>				
RNA	3991	3522	4580	4082

### 2.4.1 Alternative A – Proposed Action

The Proposed Action would implement the Resource Condition Objectives (Modified Alternative 3, ROD 1999) described in Chapter 1, Section 1.5. The CCMA would be managed under a Limited Use vehicle designation. All vehicles would be restricted to a designated route system and to designated open barrens. Cross country travel would not be allowed anywhere in the CCMA, except for designated open barrens. .

The Proposed Action would result in all routes within the CCMA Limited Use Area being designated as either “Open”, “Closed”, or “Limited”, resulting in approximately 218 miles of open and limited routes, with all remaining routes designated as closed or limited to administrative use. All vehicle travel would be restricted to designated “Open” and “Limited” routes which are signed for use. Open, Limited, and Closed routes for the Draft Plan Amendment are shown on the Alternative A map in Appendix J. Individual route determinations are presented in tables in Appendix A. Limited routes for Administrative Use is defined as, “official use” by the Federal Government, it’s designated or authorized representatives, permittees, lessees, or rights-of-way holders.

The proposed action would designate all barren areas as either “Open”, “Closed”, or “Limited”. All vehicle travel would be restricted to designated “Open” or “Limited” barrens which are signed for use. At this time the available barren inventory is comprised of approximately 2,800 acres within the CCMA. The barrens inventory is based on a soil survey conducted by Dynamac (1998) that had a

minimum mapping unit size of 10 acres. Because of this minimum mapping size and input from recreation users, ten acres is also considered a minimum size for OHV use. Therefore, areas with openings in vegetation less than ten acres would be closed under this alternative, unless specifically proposed and evaluated through the designation criteria. Cross-country travel through forest and vegetative areas adjacent to barrens would not be allowed, except on designated trails. Only barrens outside the most ecologically sensitive areas would be considered for designation as open.

Barrens considered for open designation would be limited to those within the Clear Creek watershed. These barrens are in close proximity to the majority of recreation use. Limiting use to barrens in the Clear Creek watershed would confine impacts to one watershed rather than contributing to watershed impacts throughout the CCMA. This would facilitate focusing of any mitigation measures related to OHV use to a smaller area. Law enforcement would benefit by having a smaller area in closer proximity to monitor compliance with barren designations. It would be readily identifiable to the recreation user that outside the Clear Creek watershed, OHV use is not authorized on any barrens. In addition many barrens outside the Clear Creek watershed have had less intensive OHV use and therefore are more suitable for restoration. The proposed action designates 466 acres of barrens as open. All barrens not designated as open or limited would be closed. The location of the Open, Limited and Closed barrens are shown on the Alternative A map in Appendix J. Determination of the individual designated barrens is in Appendix B.

The San Benito Mountain RNA would be expanded to 3,991 acres as shown on the alternative map in Appendix J. This alternative includes additional acreage on the north and south sides of the Sawmill Creek watershed to protect sensitive resource values and riparian habitat. Additional acreage is also added on the northeast portion of the RNA to encompass a greater portion of the San Carlos Creek watershed for the protection of riparian areas, sensitive species, serpentine barrens, forest communities, and inclusion of transition zones. Including these areas would also contribute to controlling OHV trespass into the RNA and closed mine areas. The expansion under this alternative would incorporate areas containing unique vegetation communities and habitats. The boundaries would be delineated using identifiable landmarks such as routes to the extent possible. OHV use would not be permitted in the expanded SBMRNA, except on designated routes. Areas and trails shall be located in Natural Areas only if the authorized officer determines that OHV use in such locations would not adversely affect the natural, esthetic, scenic, or other values for which the area was established. Cross-country travel and OHV use of barrens is prohibited, within the RNA. The WSA designation covering 1500 acres of the original SBMNA would continue to be managed under the WSA Interim Management Policy. All vehicle travel would be restricted to the following routes within the SBMRNA; R010B, R011, R013, T 158B, T162, and T124. Fences and barriers would be constructed to preclude OHV access into the SBMRNA. The RNA would be protected from mining. An RNA Management Plan will be developed for the SBMRNA pursuant to current regulation and BLM policy and completed within one year. An interim management plan and guidance for the SBMRNA is attached in Appendix E.

BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production, and protect sensitive resources. The BMP would incorporate the soil loss standards for OHV areas, developed jointly by BLM and California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division. These measures are contained in Appendix D.

The BLM would evaluate alternative funding sources, including implementation of the Recreation Fee Demonstration Program (Public Law 104-134). A fee program would be used to supplement existing funding, primarily for operations, maintenance, and facility development. Implementation of a recreation fee program would identify a program that best fulfills the needs of the CCMA, its visitors, and the BLM as the agency responsible for management, to provide a quality recreation experience on a sustained basis. Implementation of any such program would have full public involvement. In the interim BLM may institute a program to register recreation users and OHVs to assist in user education and enforcement issues.

### **Management Actions**

The Proposed Action would implement the following management actions:

#### **Threatened, Endangered and Sensitive Species**

**Action** Known populations of San Benito evening primrose and listed sensitive species (Appendix F) and their potential habitat would continue to be protected from vehicle and camping disturbances.

#### **Routes of Travel Designations**

**Action** Designate the routes of travel network consisting of Open and Limited routes as shown on the map in Appendix J.

R012 and R010C within the SBMRNA and WSA would be designated for Administrative Use only.

R001 between the intersection of R002 and R011 is renumbered R009 (Aurora Grade).

The Aurora Mine area between R009 and R014 and between R014 and the boundary of the RNA would be closed to all motorized vehicle use and camping.

R017 and R018 would be designated as Limited (limited to 4-wheel vehicles and ATV's only, no motorcycles).

T 151 would be re-routed in T.18 S., R12 E., sec.'s 8 and 22 that cross private lands.

KCAC Road would be designated for administrative use only.

R019, White Creek Road (within the Atlas Mine) would be designated closed.

R019, White Creek Road (south of the Atlas Mine) would be designated for administrative use only.

R007, T217, and T240 would be designated administrative use only to allow access to private lands.

T158B, Sawmill Creek Road would be designated as Limited, for wet season vehicle restriction.

The Byles Canyon Road, Tucker Canyon, Cane Canyon, and Baker Canyon Roads would be designated for administrative use only.

**Action** A difficulty rating system would be implemented for all designated open and limited routes. Ratings would be identified on route markers.

**Action** California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.

**Action** Special Recreation Permit OHV events would continue to be allowed when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL). Events would only be allowed from 1 November through 15 April.

**Action** Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions and during periods of extreme dusty conditions. These restrictions would include limiting vehicle access to maintained routes, and, or to the type of vehicle. If the PEL is reached in any given week, signs would be posted warning the public of high dust levels and exposure to asbestos. If the PEL is reached in two consecutive weeks, vehicle travel would be restricted to routes R001 – R019. These restrictions would remain in force until readings were recorded below the PEL. The wet and dry season closure criteria are outlined in Appendix C.

**Action** Designated Closed routes would be selected and prioritized for restoration and reclamation, with subsequent environmental analysis completed.

### **Barrens**

**Action** Designate all barrens outside of the Clear Creek Watershed as Closed, to protect watershed resources, sensitive species habitat, and preserve barrens which have received less intensive OHV use for restoration.(See Map in Appendix J).

**Action** Within the Clear Creek Watershed, designate the barrens as shown on Map in Appendix J. Certain barrens would be designation as limited, restricting use to only ATV's and motorcycles. Vehicle restrictions would be identified on route signs, bulletin boards, or maps.

### **Asbestos**

**Action** Planning efforts for relocation of the BLM decontamination facility to the entrance of Clear Creek Canyon have been initiated, and would continue through

implementation. A vehicle wash system for public use to remove asbestos dust and contamination is a component of this planning process.

**Action** The BLM would augment its existing public asbestos hazard information program through improved signing, handouts, advisories, monitoring, public contact, and education programs. Any new risk assessments completed by EPA would be incorporated into the educational materials.

**Action** The BLM would comply with all provisions of the Monterey Bay Unified Air Pollution Control District's ATCM regulation for airborne asbestos emissions relating to construction, road maintenance, and grading activities.

### **Stopping and Parking**

**Action** Stopping and parking of vehicles would be restricted to within 40 feet of the centerline of designated routes, except for designated camping areas.

### **San Benito Mountain Research Natural Area**

**Action** Implement management objectives and prescriptions that would permit natural processes to continue without interference in the SBMRNA, as outlined in the Interim RNA Management Plan (Appendix E).

**Action** The San Benito Mountain RNA would be expanded to 3,991 acres as shown on the Map in Appendix J.

**Action** An activity level SBMRNA Management Plan will be completed within one year. A monitoring plan is a component of this plan, and documents key community attributes, produces standardized monitoring protocols, and identifies research needs which would allow more effective management of the RNA.

**Action** Uses inconsistent with preservation of the values for which the RNA was designated would not be allowed. These include camping, building of a wood-fueled campfire, motorized and non-motorized vehicle use off developed roads, woodcutting, hunting/trapping, and plant gathering. The above restrictions apply to recreational use only and may be allowable for research projects. Grazing, prescribed fire, timber harvest, and pest suppression (native and non-native) shall not be allowed unless these actions can be shown to preserve the desired characteristics of the RNA, and only occur after environmental documentation and consultation with the U.S. Fish and Wildlife Service.

**Action** A restoration/rehabilitation plan would be developed for the SBMRNA to rehabilitate disturbed areas (i.e. OHV play areas, roads, trails, and mine sites) within the expanded boundary.

This Alternative will amend the Hollister Resource Management Plan for the Clear Creek Management Area. Routes and areas (barrens) will be designated open, closed, or limited based on

the criteria in Appendix A and B. The expanded boundaries of the San Benito Mountain Research Natural Area are designated as delineated on the map in Appendix J.

### **2.4.2 Alternative B – Enhanced Recreation Opportunities**

The description of this alternative incorporates the Alternative A discussion by reference, and only those components that differ from Alternative A are presented. This alternative places a higher priority on motorized access within the CCMA, allowance for Special Recreation Permit OHV events, and OHV recreation consideration as related to designation of the expanded boundaries of the SBMRNA. This alternative would provide a moderately larger route network to select from for enduro and permitted events. Additional motorized access would be provided for OHV recreation and hunting activities in the Condon Peak area.

Determination of the individual designated routes and barrens is in Appendix A and B and on the maps in Appendix J. Aerial digital imagery would be used to complete the route inventory of those routes not included in the existing database for the CCMA. Upon completion of soil loss assessment, up to an additional 15 percent of the miles of routes under this alternative may be added to the designated route network after evaluation utilizing the criteria developed in this environmental impact statement. This could result in as much as a 282 mile network of routes. This supplement to the designated route network is incorporated under this Alternative. OHV recreation use on barrens would be dispersed throughout the CCMA.

The boundaries of the SBMRNA under this alternative would not provide additional protection of watershed values for Sawmill Creek and San Carlos Creek. The expanded boundaries would closely follow the proposed boundaries in the CCMA Plan Amendment (1995), with minor modifications. The expansion would include a cross-section of the unique serpentine and adjacent ecotones. A substantial portion of the expanded boundaries would not follow readily identifiable geographic features such as routes. The area between T124 and R001 would not be included in the expansion, as not contributing substantially to incorporating areas with unique vegetation communities. T 153 on the northeast side of the RNA and R010 (“Ridge Route”) would be included in the route network with substantial mitigation measures required.

### **Management Actions**

This alternative would implement the management actions as described for Alternative A, except as specifically described below:

#### **Routes of Travel**

**Action** This alternative would result in 245 miles of routes designated as open and limited as shown on map in Appendix J. This alternative would, at a future date, analyze an expanded route inventory based on new information developed from aerial imagery. These additional routes would be analyzed using the same criteria discussed under the route designation process.

**Action** R010C through the SBMRNA would be designated open rather than administrative.

**Action** Special Recreation Permit (SRP) OHV events would be allowed on designated open and limited routes.

### **Barrens**

**Action** This alternative would result in approximately 813 acres of barrens designated as open. Barrens considered for designation as open would be dispersed throughout the CCMA. These barrens are shown on map in Appendix J.

### **Stopping and Parking**

**Action** Stopping and Parking would be allowed within 40-feet of the centerline of an open or limited route, and within open and limited barrens except for within the SBMRNA and specifically restricted areas (sensitive habitat, mines, private lands, etc.).

**Action** Develop the lower Jade Mill area as a non-OHV camping area with designated campsites, improved access and road network, and restroom facilities. Develop the upper Jade Mill area as an OHV camping/staging area with facility improvements, designated areas, and a phased implementation to expand the capacity to accommodate up to 100 vehicles.

**Action** Develop additional camping facilities outside the Hazardous Asbestos Area along lower Clear Creek or other suitable areas. This management action is beyond the scope of this amendment and would be analyzed under a separate environmental analysis.

### **San Benito Mountains Research Natural Area**

**Action** The SBMRNA would be expanded to 3,522 acres following the proposed boundaries in the CCMA Plan Amendment (1995), with minor modifications. (See map in Appendix J). The “Bowl” area (barren, approximately 40 acres) would be excluded from the expanded RNA boundary, and would be evaluated through the designation criteria.

**Action** All existing routes within the expanded SBMRNA (excluding the WSA) would be considered for designation, providing they meet the screening criteria in Appendix A and there is an identified recreation interest.

This Alternative would amend the Hollister Resource Management Plan for the Clear Creek Management Area. Routes and areas (barrens) will be designated open, closed, or limited based on the criteria in Appendix A and B. The expanded boundaries of the San Benito Mountain Research Natural Area are designated as delineated on the map in Appendix J.

### 2.4.3 Alternative C – Enhanced Resource Protection

The description of this alternative incorporates the Alternative A discussion by reference, and only those components that differ from Alternative A are presented. This alternative places a higher priority on environmental protection and managing the SBMRNA to preserve and protect the plant communities for which the area was formally recognized, with minimum human disturbance. This alternative would incorporate the largest area containing unique vegetation communities, habitats, and species into the RNA. Additional acreage would be included primarily on the northeast side of the RNA. It would also include a larger portion of the upper San Carlos Creek watershed and provide additional protection of sensitive species and forest in the transition zone in those areas. The northeast boundary would primarily follow T155 and would contribute to restricting access into closed mine areas, private lands, and the San Carlos Bolsa watershed to the East; and further control vehicle trespass into the RNA. It would also incorporate a small area between T124 and R001 as proposed in the 1995 CCMA Plan Amendment. The expanded boundaries of the SBMRNA, and the network of Open and Limited routes is shown on the map in Appendix J. Determination of individual route and barren designations is in Appendix A and B.

#### Management Actions

This alternative would implement the management actions as described for Alternative A, except as specifically described below:

#### Routes of Travel

- Action** This alternative would result in approximately 203 miles of routes designated as open and limited as shown on map in Appendix J.
- Action** Routes outside the Red Zone in the San Carlos Bolsa, Cantua, and Arroyo Leona watersheds would be designated closed.
- Action** From June 1 – September 1 vehicle use would be restricted to routes R001 – R019 except for administrative use in order to reduce airborne asbestos emissions and public exposure.

#### Stopping and Parking

- Action** Staging Areas 5 and 6 would be closed to camping and designated for Day Use only in order to further protect riparian areas and sensitive species habitat. Camping would only be allowed at designated sites throughout the CCMA.

#### San Benito Mountains Research Natural Area

- Action** The SBMRNA boundaries would be expanded to readily identifiable geographical features (routes, trails, etc.) where possible, as recommended in the ROD (1999). The SBMRNA would be expanded to approximately 4,580 acres. The boundaries of the SBMRNA would be as shown on map in Appendix J.

**Action** All routes within the SBMRNA would be closed to public motorized vehicle use except for Spanish Lake Road R011, which would be designated as open. R012 and Sawmill Creek Road would be designated for Administrative Use only.

This Alternative would amend the Hollister Resource Management Plan for the Clear Creek Management Area. Routes and areas (barrens) will be designated open, closed, or limited based on the criteria in Appendix A and B. The expanded boundaries of the San Benito Mountain Research Natural Area are designated as delineated on the map in Appendix J.

#### **2.4.4 Alternative D – No Action**

This alternative would continue implementation of the existing management plan. Approved Resource Condition Objectives and Management Actions identified in the Modified Alternative 3 (ROD 1999), as outlined in Chapter 1.5, would only partially be implemented. The ROD approved expansion of the SBMRNA to 4,082 acres. Under this alternative the RNA would be expanded precisely as proposed on maps in the 1995 CCMA Plan Amendment. However the 4,082 acres as proposed apparently included private and state lands. Actual BLM lands in the previously proposed expansion only total 3,640 acres. Many routes and barrens available for OHV recreation use would not meet the resource management designation criteria outlined in this analysis or the ROD (1999). Management actions that would continue to be implemented include:

- Reduce asbestos exposure and asbestos emissions while still providing opportunities for OHV use. Minimize dust emissions from main roads. Augment existing public information programs. Develop a plan to relocate OHV staging areas outside the ACEC and encourage camping outside the ACEC. Routes through abandoned mines would be closed.
- Protect existing populations of the San Benito evening primrose and attempt to expand its range to areas that have moderate and high potential habitat for the species. Ensure that sensitive species and communities maintain or enhance their condition. However this may require additional closure of routes or areas to achieve this objective.
- Continue implementing BMP to reduce watershed impacts..
- Expand the boundaries of the San Benito Mountain Natural Research Area as proposed in the CCMA, FEIS (1995), to include a contiguous cross-section of the unique serpentine and adjacent ecotones found only within this area. Continue to monitor existing use adjacent to the RNA and construct fencing/barriers as necessary to prevent trespass within the RNA.

The following Resource Condition Objectives would **not** be implemented:

- Manage the Clear Creek Management Area as a Limited Use area. Designation of routes and open play areas available for OHV recreation use would not be completed under this alternative, and would have to be addressed in a subsequent plan amendment. Miles of routes available for OHV use would exceed the target of 270 miles of designated routes identified in the Modified Alternative 3 (ROD, 1999).

- Reducing erosion and sediment transport in all CCMA watersheds, by reducing the number of miles of routes and barren acreage available for vehicle use, would not be accomplished under this alternative.

Since the ROD (1999), the CCMA has in essence been managed under the “encourage, prohibit, allow” strategy, although the BLM has not officially identified it as such. The BLM has distributed user maps “encouraging” OHV use on a route network that is a subset of the existing route inventory. OHV use has been “allowed” on all other routes in the completed inventory unless signed or physically closed. A discussion of the “encourage, prohibit, allow” OHV management strategy follows below.

**Encourage, Prohibit, Allow.** It is questionable whether 43 CFR 8341.1 and 8342.1 allow for designation as “encourage, prohibit, allow”. In particular, a system of allowed routes which are unsigned and undesignated would appear to not fulfill the requirements of these CFR’s. Encouraged and allowed routes may have to be designated as “open”, and prohibited routes as “closed”. It is unclear whether routes available for use under this scheme would still need to be limited to a total of approximately 270 miles of routes designated for OHV use, as identified in the modified Alternative 3 (ROD, 1999); or whether the route network would be limited to 420 miles (routes in the inventory database at the time of the ROD). It is assumed that for this alternative the route network would be limited to the current inventory.

There would be a substantial difference in the miles of routes and acres of barrens available for OHV use under this alternative compared to Alternative A. Another difference between this and the Proposed Action would be in signing and mapping of the “Allowed” routes. Under this strategy, “open” routes would be signed as in the Proposed Action, and all prohibited routes would have to be signed “closed”. The allowed routes would not be on the User Map and would be either unsigned or signing would be away from the intersection, different from both “encouraged” and “prohibited” routes, in that these would have appropriate signs immediately visible from the intersections. This does not contribute to requirements for the BLM to allow users to clearly understand the appropriate type of use for each area, and to establish a clear and understandable route network. It is a requirement of 43 CFR 8342.2 that, the authorized officer shall after designation, take action by marking and other appropriate measures to identify designated routes so that the public will be aware of locations and limitations pertaining to them. Until all “Closed” routes are signed there could be confusion between “Allowed” routes and to be “Closed” routes resulting in continued use of these routes, route proliferation, difficulty in enforcement, and the perception of private exclusive use.

This management strategy has proved extremely difficult at best. When considering the various resource sensitivities (fragile soils and ecosystems, riparian areas, sensitive species), protection of Federally threatened species, closure of abandoned mine lands, enforcement of designations, and the history of relatively intensive OHV use; these factors dictate a relatively controlled access strategy and designated route system to meet resource condition objectives, and provide for the protection of these resources and the public health. Non-compliant use, route proliferation, and trespass in closed areas have reached levels which threaten closure of the CCMA. Designation as “encourage, prohibit, allow” does not appear to provide the necessary management tools for this particular situation, to provide an acceptable level of manageability for an OHV route network within the CCMA. Manageability is critical to meeting CFR requirements, particularly those in 43 CFR 8342.1, and to provide for OHV opportunities on a sustained basis while protecting the environment and sensitive resources.

The primary purpose of this alternative is in providing a comparative analysis to Alternatives A, B, and C. Existing vehicle designations would remain in effect, along with the Limited Use designation for the CCMA (ROD 1999), limiting vehicle use to existing open routes and areas. This would result in those routes (398 miles) and barrens (2,800 acres), in the database inventory at the signing of the ROD, remaining available for use, unless physically and/or signed closed. Undesignated routes and areas would remain undesignated. The designation process would be complete at some future date under a different planning process, according to the recommendations in the Modified Alternative 3 (ROD 1999), and approved with a subsequent Record of Decision. The boundaries of the SBMRNA would be expanded to 3,640 acres as approved in the ROD (1999), and unchanged from the proposed expanded boundaries as stated in the FEIS Alternative 3 (1995). These boundaries are shown on the map in Appendix J and would be formalized with publishing of a Federal Register Notice. Selection of this alternative does not comply with the Biological Opinion (1997) and would require initiation of formal consultation with the U.S. Fish and Wildlife Service.

## **2.5 MITIGATION MEASURES APPLICABLE TO ALL ALTERNATIVES BUT THE NO ACTION ALTERNATIVE**

The following lists several mitigation measures incorporated into the alternatives to lessen environmental impacts.

- **Route Maintenance:** Route maintenance and improvement work would be completed by BLM, a BLM contractor, or approved cooperator in accordance with the following implementation standards and references:

BLM manuals 9113, H-9113-2, 9114,

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

1995 Pacific Watershed Associates (PWA) report would 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. BLM manuals and PWA techniques are incorporated by reference in this DEIS. The BLM would continue to implement Best Management Practices to reduce impacts to watershed resources and control non-point source pollution. California OHV State soil loss standards would be used in monitoring and assessment of routes and areas, and would serve as the basis in developing corrective route management plans.

- **Public Notification:** BLM would notify the public with media releases and postings to clubs, landowners, claimants and other permittees, regarding scheduled route work, and regarding any temporary route closures or route diversions. Efforts would be made to ensure the public would have alternative routes wherever possible, but there could be days when route segments within the CCMA might be closed to ensure the safety of the public. Safety information would be included in notifications.

- **Soil Compaction and Moisture:** Work on open routes would be done when soil moisture is sufficient to adequately compact the tread and prevent visible airborne asbestos emissions. If work is to be done under dry season conditions, then water would be added in sufficient quantities to maintain adequate soil moisture. Upon mechanical disturbance by the treads of track driven equipment, the soil would be re-compacted in six-inch or less lifts.
- **Stream Crossing Requirements:** To minimize sediment deposition into flowing streams, work would be performed during the low flow stages whenever feasible, or if, possible when the channel does not contain flowing water. If warranted, a temporary hay-bale check dam would be placed directly downstream to trap sediment and to reduce turbidity. Regardless, all work in perennial creeks would be performed with proper permits and coordination with the California Department of Fish and Game Stream Alteration permit guidelines, including Clean Water Act Section 404 permits from the U.S. Army Corps of Engineers.
- **Sensitive Resource Screening:** Work on routes would not take place until a screen for sensitive resources (Threatened, Endangered, and other special status plants and animals, cultural resources, mine sites, riparian corridors, stream crossing and vernal pools, etc.) by appropriate staff is completed. Screening would involve comparing maps and other data of known sensitive resources against maps of the proposed route maintenance projects. A sensitive resource and/or area intersecting a project within a 200-meter buffer would be identified and taken to the next level of analysis. Whenever feasible, project screening would take place at the end of the spring rainy season, for projects proposed for the following autumn. Additional resources review would be required for route maintenance projects involving activities outside of the historic zone of disturbance for a particular route (or a revised Area of Potential Effect).. The historic zone of disturbance is defined as that area within and adjacent to the route that has historically received route maintenance, and follows the guidelines identified in the Route Maintenance Objectives (Appendix C). Identified areas would be field-checked as appropriate, using a field documentation form or other method to identify whether the proposed maintenance treatment could proceed or whether the treatment had to be modified or deferred. If necessary, the field-check would identify what additional measures would need to be implemented to avoid impacting sensitive resources. These forms would then be entered into a database with fields to link it to the route project database and the resource database (currently being developed). The Field Manager would approve projects or modifications to projects prior to implementation, and copies of that documentation would be placed in the maintenance project binder and the Field Office NEPA binder. Programmatic environmental assessments, site specific environmental assessments, or categorical exclusions would document NEPA analysis for all route maintenance activities.
- **Flora/Fauna:** There would be no adverse impacts to known occurrences of federally threatened *Camissonia benitensis* without further consultation with the USFWS. There would be no known adverse impacts from route maintenance, to federal or California listed species and sensitive species (Appendix F), or to habitat with high or medium potential to support the sensitive species that are known to occur within the CCMA. Known occurrences of the several plant species listed in Appendix F, or current BLM Sensitive Species listings, would be avoided during route maintenance. Based upon field review, the proposed route maintenance for a particular site could be modified/downgraded (example: if a culvert were proposed, the repair, clearing, or replacement of which would impact a known occurrence or habitat currently capable of supporting *Camissonia benitensis*, then a possible downgrade could be to install a rolling dip or other measure within the existing tread). Site-specific project plans would be

developed for those locations where the potential exists to impact sensitive resources, and the stipulations required to minimize impacts would be documented as part of this project plan.

- **San Benito Mountain Research Natural Area and Wilderness Study Area:** The San Benito Mountain Research Natural Area (SBMRNA) contains a Wilderness Study Area (WSA) that would be managed under BLM's Interim Management Policy (IMP) and Guidelines for Lands under Wilderness Review until Congress makes the final determination as to wilderness or non-wilderness status. The Bureau would comply with the intent of the IMP, which would be to manage for non-impairment of wilderness values. Necessary maintenance of routes through the area would enhance overall wilderness quality by minimizing route-related impacts to the sensitive resources inside the SBMRNA/WSA. The Bureau would follow management guidelines that would enhance or maintain the characteristics of the SBMRNA (43CFR 8223), and in accordance with the ROD (1999). Areas along the roadways near the WSA would be rehabilitated using the most effective method available.
- **Cultural Resources (including Areas of Native American Cultural Significance):** All maintenance and proposed projects would avoid adversely impacting known cultural resources sites, in compliance with the California BLM-SHPO Programmatic Agreement of 1998. At this time, there are no areas within the Management Area that are known to possess religious significance to Native Americans. It should be noted, however, that prehistoric and ethnographic affiliations for this area have never been adequately identified due largely to a lack of supporting data for the region. BLM would evaluate and incorporate ongoing research, literature, and ethnographic and archeological reports from the region and incorporated into the interpretation of the prehistoric and historic landscapes of the CCMA. This cultural resource knowledge would in turn be used towards the application of BMP for management of the CCMA.

## 2.6 MODIFICATION OF ROUTE NETWORK

The Designation Project Record of Decision would amend the Hollister RMP for the Clear Creek Management Area to adopt the motorized vehicle access network as a component of that Plan. Any significant future modifications of the designated vehicle network, therefore, could only occur through an amendment to the Hollister RMP, including NEPA compliance, public involvement, and interagency coordination.

Minor modifications of the route network during plan implementation would be allowed, however, without the necessity of a formal plan amendment. FLPMA allows BLM resource management plans to be "maintained as necessary to reflect minor changes in data" (Section 1610.5-4.). Plan maintenance cannot result in the expansion of the scope of resource uses or restrictions, or change the terms, conditions and decisions of the approved plan. It is limited to further refining or documenting a previously approved decision incorporated in the plan. Considering these limitations, "minor realignments" of the route network would be considered to be plan maintenance, and could be made without formal amendment. "Minor realignments" would include the following:

- Minor realignments of a route necessary to avoid sensitive natural or cultural resources,
- Minor realignments of a route necessary to reduce impact on sensitive species and habitats,

- Minor realignments of a route that would substantially increase the quality of the recreational experience, but that would not affect sensitive species or habitat, or other sensitive resource values,
- Minor realignments of a route to avoid mines and private lands.

“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 would undergo environmental review and NEPA compliance. All realignments and re-routes would be documented in the official record and kept on file at the BLM Field Office, and the changes noted in subsequent RMP amendment.

## 2.7 IMPLEMENTATION

Developing an effective signing protocol which provides for the greatest public compliance and allows the user to clearly understand the designated route network, would be a key component in successful implementation of the route and area designations. All designated open and limited routes and areas would be signed. Closed routes and areas would be prioritized for restoration. A variety of techniques would be used on closed routes to ensure compliance with the designation, including vertical mulching, obliteration, natural and man-made barriers, as well as law enforcement, education, and signing of some routes where prevalent resource concerns exist or intensive historical use patterns are present. Some routes or portions of routes would be left to natural reclamation processes. A detailed description and schedule of management actions related to implementation of this designation project is in Appendix C.



BLM and volunteers signing the CCMA

### **Chapter 3 – Affected Environment**

3.1	Introduction.....	3-1
3.2	Topography and Climate.....	3-1
3.3	Air Quality, Soils, and Water.....	3-2
	3.3.1 Air Quality.....	3-2
	3.3.2 Soils.....	3-4
	3.3.3 Watershed Resources.....	3-6
	3.3.4 Human Health.....	3-12
3.4	Biological Resources.....	3-16
	3.4.1 Vegetation Communities.....	3-17
	3.4.2 Special Status Plant Species.....	3-22
	3.4.3 Special Status Animal Species.....	3-25
	3.4.4 Invasive Weeds.....	3-28
	3.4.5 Grazing.....	3-29
3.5	Recreation Resources.....	3-32
	3.5.1 Motorized Vehicle Access Network.....	3-34
	3.5.2 Barrens.....	3-39
	3.5.3 Non-OHV Recreation Opportunities.....	3-39
3.6	Cultural Resources.....	3-41
3.7	Special Management Areas.....	3-43
	3.7.1 Area of Critical Environmental Concern.....	3-43
	3.7.2 San Benito Mountain Research Natural Area.....	3-43
	3.7.3 Wilderness Study Area.....	3-44
3.8	Social and Economic Conditions.....	3-46
	3.8.1 Social.....	3-46
	3.8.2 Economic.....	3-47
	3.8.3 Environmental Justice.....	3-48

## **CHAPTER THREE AFFECTED ENVIRONMENT**

### **3.1 INTRODUCTION**

This chapter provides a description of those portions of the environment that could be affected by the alternatives selected for analysis. Particular emphasis is placed on how those alternatives could affect the unique resource values of two specially designated areas within the CCMA - the Serpentine Area of Critical Environmental Concern (ACEC) and the San Benito Mountain Research Natural Area (SBMRNA). The San Benito Mountain Research Natural Area falls within the Serpentine ACEC. These areas require special management attention and monitoring, because most of the dispersed recreation occurs within the ACEC boundaries. The CCMA RMP Amendment and FEIS (1995) have previously depicted the affected environment for the CCMA in detail. This chapter summarizes earlier information and concentrates on new information in this document.

The planning area covers the 75,000 acre Clear Creek Management Area and includes portions of San Benito and western Fresno Counties. The heart of the management area is Clear Creek Canyon, which is located approximately 25 miles northwest of the town of Coalinga. Clear Creek runs through Clear Creek Canyon as it descends west from San Benito Mountain, until its confluence with the San Benito River.

### **3.2 TOPOGRAPHY AND CLIMATE**



Topography of the Clear Creek Management Area

Elevation within the Management Area varies from about 2,000 feet to over 5,000 feet. The highest peak in this portion of the Diablo Mountain Range is San Benito Mountain, at 5,241 feet in elevation.

The topography is mostly mountainous and the slopes range from 30 to 70 percent, with small interspersed, flat lying stream terraces. Predominant in this landscape are steep, barren areas surrounded by brush-covered slopes with occasional rock outcrops.

Weather in the CCMA is typically Mediterranean: hot and dry in the summer and cool and wet in the winter. Summer daytime temperatures frequently exceed 100° F. Winter temperatures frequently fall below freezing and snow is common at the higher elevations. Precipitation, in the form of rain with some snow, occurs almost entirely from November to May. The average rainfall is 17 inches per year. Periodic flooding as a result of high intensity rainfall is not uncommon in this area, as rainfall can be as much as one inch of rain per hour.

The Diablo Range effectively separates the San Joaquin Valley from the Salinas Valley and coastal marine weather patterns. Thus, the meteorological conditions in these two air basins are quite different. The mountainous Diablo Range restricts the circulation of air within the San Joaquin Valley, which is noted for its persistent winter inversions and "tule fog" and for its high summer temperatures. This restricted air circulation in the San Joaquin Valley allows for a build-up of pollutants which translates into a significant number of days with a poor-to-moderate pollution index. West of the Diablo Range, the air quality generally improves because the weather patterns and air circulation are heavily influenced by the cooler coastal marine conditions and air circulation.

### **3.3 AIR QUALITY, SOILS, AND WATER**

#### **3.3.1 Air Quality**

The CCMA is within two air quality management areas as regulated by the State of California with EPA oversight. These air basins are: the North Central Coast and the San Joaquin Valley. There are two regional air quality boards that oversee these air basins: the Monterey Bay Unified Air Pollution Control District (MBUAPCD) and the San Joaquin Valley Unified Air Pollution Control District. The North Central Coast Air Basin (NCCAB) includes Monterey, Santa Cruz and San Benito Counties. A portion of western Fresno County located within the planning area is in the San Joaquin Valley Air Basin. The affected environment for air quality is based on OHV use of approximately 420 miles of unpaved road and 2800 acres of barrens, within the 75,000 acre CCMA.

In addition to federal designations based on the National Ambient Air Quality Standards, the California Air Resources Board (CARB) makes State area designations based on criteria established for nine pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM<sub>10</sub>), sulfates, lead, hydrogen sulfide, and visibility-reducing particles. Air basins in the State are either in "attainment" or "unclassified" for nitrogen dioxide, sulfur dioxide, lead, and visibility reducing particles. Although the North Central Coast Air Basin exceeds the State of California ambient air quality standards for PM<sub>10</sub> and ozone, San Benito County is designated as maintenance/attainment/unclassified with respect to federal ambient air quality standards for ozone, carbon monoxide, and PM<sub>10</sub>. California ozone exceedances for the NCCAB were recorded on eight occasions in 2002, and three times each in 2001 and 2000 (CARB), although there has been a significant downward trend over the past 15 years. California PM<sub>10</sub> violations were recorded at Hollister on one occasion in 2002 and zero times in 2001 and 2000 (CARB). The San Joaquin Valley Air Basin includes Fresno County, which currently exceeds both federal and California ambient air quality standards for ozone and PM<sub>10</sub>. Fresno and Monterey Counties are designated as maintenance/attainment for carbon monoxide (CARB, 2002).

The NCCAB has significant influences to air quality from variable meteorological conditions, and transport of air pollution from the San Francisco Bay Area, along with locally generated emissions. The nearby Pinnacles National Monument is also an air monitoring station, and the NCCAB's attainment status for ozone is closely linked to conditions monitored there. The Air Resources Board has determined that ozone levels at Pinnacles are highly influenced by transported smog from a number of regional sources, including San Francisco Bay and the San Joaquin Valley. Overall there has been a 24 percent improvement in ambient ozone levels at Pinnacles from 1987 to 1999, with Pinnacles being very close to achieving the standard (MBUAPCD).

PM<sub>10</sub> in the atmosphere can be caused by both environmental factors and human activities. Human activities that contribute to PM<sub>10</sub> emissions include combustion sources, fugitive dust sources, agricultural activities, and off-highway vehicle travel on un-paved roads and OHV use areas. The 2002 Estimated Annual Average Emissions (CARB) for San Benito County, indicate a total of 6.31 tons per day of PM<sub>10</sub> emissions from unpaved road sources, however it is likely that these estimates do not account for emissions from the CCMA. The other pollutants associated with exhaust from motorized vehicles are: Reactive Organic Gases (ROG), Nitrogen Oxides (NOx), and Carbon Monoxide (CO). For Off-Road Recreational Vehicles (Other Mobile Sources), the 2002 Estimated Annual Average Emissions (CARB) for San Benito County, from these pollutants in tons per day is, ROG/0.03 and CO/0.34. For the CCMA FEIS (1995), the BLM in cooperation with the Monterey Bay Unified Air Pollution Control District computer modeled ROG, NOX, and CO from mobile sources. Based upon this previous analysis all common automotive emissions except PM<sub>10</sub>, were within existing air quality standards and did not exceed Federal or State regulatory thresholds. The PM<sub>10</sub> emissions estimated by computer modeling were found to potentially exceed State and Federal standards. Since the San Joaquin Valley Air Pollution Control Board adopted a PM<sub>10</sub> reduction plan effective December 1993, all land-use decisions for the CCMA will need to conform to this plan, and with MBUAPCD's "1998 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region."

The US EPA has established new National Ambient Air Quality Standards for PM<sub>2.5</sub> emissions. These fine particles have been implicated as an increased health risk. Sources for PM<sub>2.5</sub> emissions mostly consist of chemical compounds from combustion processes in vehicles. However, natural processes and human activities such as motorized vehicle operation easily erode serpentine rocks bearing asbestos (Wrucke 1995). Vehicle travel on unpaved serpentine roads and trails can also generate asbestos emissions and other fine dust of less than ten microns (PM<sub>10</sub>), all of which can negatively impact air quality. The BLM's National Science and Technology Center has prepared an updated PM emission inventory for the CCMA based on soil type, silt loading, and vehicle type. This data quantifies the PM<sub>10</sub> and PM<sub>2.5</sub> contribution from vehicles and is in Appendix G.

Within the CCMA Hazardous Asbestos Area ACEC, is a serpentine formation with the presence of naturally occurring asbestos. Surface disturbance, primarily from vehicle use on the unpaved roads in this area, generates asbestos emissions, which can exceed established Occupational Health and Safety Administration (OSHA) standards for public health and safety. Road maintenance, grading, and construction activities can also contribute to airborne asbestos emissions. Cooper et al. (1979) first found that dust-fall samples collected along OHV routes in the CCMA, consisted of 90 percent chrysotile asbestos. Personal air samples taken from motorcyclists using one of the trails during this study, showed concentrations of airborne fibers ranging from 0.3 to 5.3 fibers per milliliter. The average total dust concentration estimated from personal samplers was approximately 20 micrograms per cubic meter. Dust-fall collected at various sites over two weeks (during which more than 750 vehicles passed) permitted a quantitative estimate of dust generated by passing vehicles. Dust collected along the primary route indicated amounts ranging from 33 to 90 grams per square meter

per month, while dust collected along two smaller motorcycle trails were 22-23 grams per square meter per month. Dust collected at 15 to 150 meters from the road resulted in 2 to 6 grams per square meter per month. The lower dust-fall further from the road indicated that wind was a negligible factor in aerosol generation and dust dispersion during the study period.

Studies have been conducted over the past decade by regulatory agencies to determine the impacts to air quality from vehicle use on unpaved roads in natural asbestos areas. The results of these studies indicate that the force of vehicle wheels on the road surface causes pulverization of the serpentine surface material, lifting asbestos fibers up by the passing vehicles and strong air currents, and suspending these particles in the air (EPA, 1989). The quantity of dust emitted depends on vehicle traffic, vehicle weight, the number of wheels per vehicle, vehicle speed, soil moisture, and concentration of asbestos in the soil. Unpaved routes in the CCMA generally have a pulverized texture when dry. After rainfall has saturated these road surfaces they become muddy and slippery, but within a short time the route surfaces can dry out and generate dust. In general, the asbestos emissions generated from vehicle travel can be measured or predicted.

The North Central Coast air basin can affect the San Joaquin Valley air basin by the prevailing winds that transport air pollutants. Air sampling investigations conducted by EPA indicated that asbestos concentrations were similar within the two air basins. This EPA study only addressed asbestos air pollution transport. The onsite generation and inhalation of airborne asbestos was determined by both EPA and BLM to be a potential problem from motorized vehicle use in the CCMA.

National Emission Standards for Hazardous Air Pollutants (NESHAPS) includes an asbestos standard. The asbestos standard under the NESHAPS regulations, however, pertains only to asbestos mining and milling operations and does not set any airborne "threshold" for acceptable levels of airborne asbestos. The BLM must comply with air quality standards set for employee exposure by OSHA, which affect worker safety in environments with high asbestos air concentrations. The BLM must also conform to the Asbestos Air Toxic Control Measure (ATCM) adopted by the MBUAPCD, relating to road construction and maintenance operations and the control of airborne asbestos emissions.

### **3.3.2 Soils**

The Clear Creek Management Area is defined by a northwest-trending serpentine body (Serpentine ACEC), three to five miles wide and 15 miles long. The serpentine mass is highly sheared with the exposed rock being made up of small chips and plates that are generally friable and erode easily. Locally, there are some blocks of more erosion-resistant rocks which have been only moderately crushed and sheared; these rocks generally form the higher mountain tops and rock escarpments. This serpentine uplift is thought to have formed over 65 million years ago (Cretaceous Age) and contains a unique collection of minerals. This geologic assemblage is called the New Idria Formation. Surrounding the New Idria Formation are the approximately 100 million year old Jurassic Franciscan Formation, as well as the Cretaceous marine sandstone and shale of the Panoche Formation. The Franciscan group is the oldest group of rocks in the area and consists primarily of marine sandstone with minor shale and conglomerate inter-layered with basaltic lavas and associated lenses of chert. The Panoche formation consists mainly of layered shale and sandstone.

Five major types of soils have been identified within the San Benito County portion of the management area. The two major differences between these five groups are the source rock from which they are formed. Two main rock types exist within the Clear Creek Management Area, ultramafic rock (serpentine) and sedimentary rock. Soils derived from serpentine rock contain

asbestos. Those soils derived from sedimentary rock do not contain asbestos. All soil types are prone to some form of erosion and soil loss due to natural conditions and human disturbance.

Soils within the CCMA ACEC are of the Atravesada, Henneke, and Shadeleaf series, which are characteristic of serpentinite. The soils are composed of gravelly clay loam to gravelly loam textures, and generally are relatively thin, averaging between two and three feet in depth over bedrock. Left undisturbed, the serpentinite soils found in the barrens typically develop a gravel lag or armor at the ground surface which contributes to reducing erosion potential. The soils are extremely sensitive to manmade disturbances, such as OHV use. The properties of serpentine soils (low calcium/magnesium ratio, high Ph, low organic matter and the presence of toxic elements such as nickel, cobalt, mercury, chromium, and lead) are such that plant growth is stunted or inhibited, resulting in the barren slopes, common to the CCMA. Soil formation and fertility are generally greater in the sedimentary derived soils. The sedimentary soils found in the CCMA are more productive and lack the barren areas typical of the serpentine-derived soil. In some locations such as open barren hillslopes, serpentine soils are being physically removed faster than they are being naturally replenished. Soil analytical results (Dynamac, 1998), revealed that the concentration of metals detected within the CCMA are inherent to a highly mineralized area. Some of these metals are in forms that are toxic to people and erode and flow out of the CCMA by water and air. Two metals are especially important: chromium and mercury.

Table 1 below depicts the miles of routes, percent of silt, and percent of asbestos in each soil type.

Table 1. Miles of Routes by Soil Type.

CCMA Soil Type	Soil Characteristics	Percent Slope	Percent Silt	Percent of Silt Containing Any Asbestos	Miles of Routes
742	Xerothents, cool - Lilten association	30 to 65	30.7	0	6.4
744	Lilten - Xerorthents, cool association	15 to 50	36.1	0	27.8
757	Rock Outcrop - Borreguero complex	30 to 65	25.8	0	2.9
758	Xerothents, cool - Rock outcrop complex	50 to 70	17.8	0	0.4
761	Barrens	30 to 50	18	33.8	17.4
765	Atravesada - Henneke, Shadeleaf complex	10 to 40	28	93.4	96.7
767	Atravesada gravelly loam	30 to 65	31.9	96.4	147
768	Barrens	30 to 65	8.1	54.4	17.9
769	Barrens - Roacha -Xerorthents	30 to 65	7.6	35.7	44.7
770	cool - Lilten association	30 to 65	38.6	0	9.1
773	Hentine - Rock outcrop complex	30 to 65	17.4	11.8	5.4
774	Hentine - Franciscan, Rock outcrop complex	30 to 65	16.6	9.3	17.5

### **3.3.3 Watershed Resources**

The study area encompasses eleven sub-watersheds located within the CCMA, including; Clear Creek, Larios Canyon/Creek, San Benito River, San Carlos Creek, East Fork San Carlos Creek, Cantua Creek, Sawmill Creek, Picacho Creek, Diaz Creek, Leona Arroya, and White Creek. These areas represent distinct watersheds, often with extreme geographic, topographic, and mineralogical variability. The watersheds are drained by higher order perennial streams that, with the exception of White Creek, descend from San Benito Mountain. White Creek descends from Wright Mountain and flows to the southeast. Clear Creek flows to the west until it reaches the San Benito River, where it discharges. Larios and San Carlos Creek flow to the north where they discharge to Silver Creek. The topography of the CCMA is dominated by convex gently sloping ridges, with slopes becoming quite steep as they approach the stream channels and inner gorges. Elevations within the CCMA range from approximately 2,500 feet at the mouth of the drainage to 5,000 feet along the crest of the Diablo Range. The ridges and slopes are dominated by naturally occurring areas of serpentinite soils forming complexes of barren areas interspersed with chaparral and conifers.



Sensitive riparian habitat

The serpentinite watershed and riparian areas in the CCMA have been subject to widespread surface disturbances over the last century. In general, the watershed conditions observed in the CCMA reflect naturally high rates of erosion that have been accelerated by human impacts. These watershed conditions result from a long history of surface disturbance, beginning in the mid-1850's, from road construction, logging, and mineral exploration and extraction, and in more recent times by off-road vehicle travel and recreation. These watersheds have high erosion rates due to the steep, unstable slopes which are composed of soft sheared serpentinite bedrock. Since the mid-1970's motorized vehicle recreation has been the dominant public use within the area. Road maintenance operations and techniques also influence erosion and sedimentation rates. Maintenance of the route network is based on annual soil loss assessment inventories, to prioritize the work and determine the appropriate

measures to reduce erosion and off-site sedimentation impacts, and to provide for safe motorized access.

The riparian zones around the perennial streams and some intermittent streams, and the barren or sparsely vegetated serpentine slopes, exhibit a fragile ecology, diversity and assemblage of rare and unique plants. In addition, several special status plant and animal species occur in the CCMA and are dependent in some stage of their life cycles on proper functioning condition of creeks and streams. In total, Clear Creek and surrounding watersheds support plant and animal communities that are important from the perspective of California native biodiversity. The management of watershed resources for the CCMA necessitates understanding the relationships between surface water, soil erosion and sedimentation, with respect to surface disturbances from human activities.

A study was completed in 1998 by Dynamac Corporation, which conducted a field evaluation of the serpentinite soil barren areas within the CCMA. The objectives of this study were, 1) to complete an evaluation of soil erosion and sedimentation taking place within the barrens, evaluating both natural and human caused influences, and 2) develop an inventory of barrens and prioritize them with respect to their potential for erosion and contributing to sedimentation. A variety of physical characteristics were analyzed, including, drainage area, relative size of barren within the drainage, soil color, vegetation type and percent of cover, amount of gullying, slope of ground surface, number and order of streams present, off-highway vehicle use density, amount and type of armoring present, mining history, proximity to access routes, and sediment trapping features.

### **Water**

Water resources refer to all surface water runoff into rivers and creeks within the CCMA and the values that this water provides to people, wildlife, and vegetation. The San Benito River is impounded by a dam, forming the Hernandez Reservoir, approximately six miles north of the mouth of Clear Creek. The Hernandez Reservoir provides for groundwater recharge for northern San Benito County. The State of California Regional Water Control Boards (CRWQCB) have jurisdiction over water resources in the CCMA, as authorized by the Environmental Protection Agency under the Clean Water Act: the Central Valley Regional Water Control Board and the Central Coast Regional Water Control Board. The former agency oversees all waters flowing into the Central Valley, known collectively as the “West Side Streams”, and the latter agency oversees those waters within the CCMA that flow into the San Benito River.

The Central Valley Regional Water Control Board has designated nine beneficial uses for this the “West Side Streams” (SWRCB 1975): Agricultural Supply (i.e. vegetation for livestock grazing), Industrial Process Supply (i.e. fire protection), Water Contact Recreation (i.e. swimming and wading), Non-Contact Water Recreation (i.e. camping, hunting and hiking), Warm Fresh Water Habitat (i.e. to sustain warm water aquatic species), Wildlife Habitat (i.e. for food, water, and shelter for wildlife), Preservation of Rare and Endangered Species, and Groundwater Recharge.

The Central Coast Regional Water Control Board has not specifically designated beneficial uses for any streams in the CCMA that drain into the San Benito River. For such unnamed waters in the Central Coast Basin two beneficial uses were identified; Municipal and Domestic Water Supply, and Protection of Recreation and Aquatic Life. Designated uses for the San Benito River include; Municipal and Domestic Water Supply, Agricultural Supply, Industrial Service Supply, Groundwater Recharge, Recreation Contact/Non-Contact, Wildlife Habitat, Freshwater Habitat, Spawning and Reproduction, Freshwater Replenishment, and Commercial and Sport Fishing. Designated uses for the Hernandez Reservoir include those listed for the San Benito River and Navigation. California

Water Resources Control Board has listed 2002 Clean Water Act Section 303 (d) Water Quality Limited Segments for the following streams; Clear Creek (mercury), San Benito River (fecal coliform and sedimentation), and Hernandez Reservoir (mercury).

Because heavy metals and asbestos are concerns in this area, the BLM contracted a water quality study (Dynamac, 1998) to determine the magnitude of heavy metals being deposited into streams from 15 abandoned mines. Soil and water sampling was completed below, at, and above each of the mined areas. Results from this study produced important findings. The background concentration of metals detected in soils tended to be above stated standards, and is consistent with the natural geochemistry of the area. However, differences in the water samples taken from below and above mined sites, indicated that disturbed areas are contributing to metal concentrations over and above the naturally high levels. Accessibility by vehicles was also found to potentially be a factor in increasing concentrations of metals transported in the water downstream. As a result of this study, five mine areas, the Alpine, the Aurora, Clear Creek, Larios Canyon, and the Molina were determined to not only pose the greatest ambient hazard in terms of inhalation of hazardous materials, but also pose the greatest water contamination risk. These were all closed to vehicle use with the issuance of a Federal Register notice in February, 1998.

To evaluate the potential threat to human health, BLM compared the results of surface water analyses (Dynamac, 1998) to Federal drinking water regulations. From six mine sites, down gradient surface water samples contained concentrations of antimony, cadmium, chromium, mercury, and nickel that exceeded the Maximum Contaminant Levels (MCLs). On Clear Creek and the San Benito River, where multiple sampling points were established, cumulative, increasing concentrations did not appear to occur. Mine sites in the San Carlos and Larios Creek watersheds were the only locations where metals were detected at concentrations three times the background levels. In general, the metal concentrations detected in the Clear Creek watershed were very low. Mercury compounds were the most prevalent metal compounds detected, occurring in all but one sample, over the five watersheds. Results from combined surface water sample data for the San Benito watershed indicated background and down gradient concentrations of nickel that exceeded the MCL. The San Carlos watershed exhibited means background and down gradient concentrations of mercury that exceed the MCL. The surface water exposure pathway would appear to present a minimal risk to recreation users of the CCMA, because of the limited number of days that a typical user visits, and the fact that the surface water is generally not used as a potable water source. The Alpine Mine and Larios Canyon would present the greatest exposure to users.

TMDL stands for a Total Maximum Daily Load. This is the amount of a particular material that a water body can assimilate on a regular basis and still remain at levels that protect beneficial uses designated for that water body. A TMDL is approved by the Regional Water Quality Control Board, the State Water Resources Control Board and the US Environmental Protection Agency. Once approved, it establishes 1) an allowable amount of a pollutant to a water body, 2) proportional responsibility for controlling the pollutant, 3) numeric indicators of water quality, and 4) implementation to achieve the allowable amount of pollutant loading.

TMDLs are developed by analyzing data and information provided by existing or commissioned studies, and/or by stakeholders interested in the water body or conditions being investigated. Development results in a clear definition of water quality problems in a water body or watershed, a numeric value for the TMDL, and an implementation plan that identifies how the problems will be solved and the TMDL achieved. The implementation plans identify new requirements, based on existing regulations, in conjunction with other existing water quality management activities. The implementation plans identify which requirements or activities (via voluntary or regulatory programs)

apply to which agencies, landowners, resource managers, and/or the public. Typically, TMDLs and their implementation plans will be approved by adoption into the Regional Board's Basin Plan.

Section 303(d) of the Clean Water Act requires States to identify waters not attaining applicable water quality standards. The State complies with this requirement by periodically assessing the conditions of the rivers, lakes and bays and identifying them as "impaired" if they do not meet water quality standards. The California Regional Water Quality Control Board, Central Coast Region (Regional Board) adopted a "Total Maximum Daily Load" (TMDL) for Mercury in Clear Creek and Hernandez Reservoir at the March 19,2004 Regional Board meeting. Key components of the proposed Resolution are to place responsibility upon the BLM to submit a satisfactory monitoring plan to the Regional Board, and to report monitoring results quarterly.

The TMDL identifies attainable numeric targets to protect water quality, determines that the implementation measures to achieve these targets have already been established by the US Bureau of Land Management, and designates a monitoring program to ensure that the implementation is effective. Because the existing activities of the BLM are expected to attain the water quality objectives, the Regional Board will be considering a Resolution that establishes the TMDL, acknowledges the existing implementation, and establishes a program to ensure that water quality objectives will be attained.

A study conducted by Pacific Watershed Associates (1995) determined nearly half the sediment delivered to streams within the CCMA came from stream and swale crossings. Since 1993, BLM has contracted with the U.S. Geological Survey to monitor water quality and sediment at the Clear Creek Gauging Station, located near the Oak Flat Campground. Data collected includes information relative to suspended sediment, water flows, bedload measurements, and metal concentrations. This data is posted on the USGS internet website, and will be used to evaluate watershed response to both natural and human-caused impacts which cause soil loss and sediment transport. A preliminary review of the USGS water quality data indicates that BLM's restoration of abandoned mercury mines, has reduced the amount of mercury sediment since this project began in 2000. Water quality data is in Appendix H.

The extent of the contribution of heavy metals and asbestos into the Hernandez Reservoir remains an issue. Unregulated human use of the CCMA could exacerbate water quality problems, but given the underlying geology of the area, some continued natural contribution of mercury and asbestos may be unavoidable. By eliminating unregulated use, by eliminating vehicle access to abandoned mines, and by completing significant road repairs and improvements, the BLM hopes to minimize the potential for additional human-caused impacts to the subject waterways.

BLM policy is to ensure that these designated water uses are maintained or enhanced. BLM is working to develop closer working relationships with the appropriate water control boards as well as other federal, state and local agencies which share responsibilities to meet both State and Federal water quality goals and objectives as they apply to waters in the CCMA. Other agencies that BLM regularly contacts for advice and assistance include the U.S. and California EPA, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the U.S. Geological Survey.

### **Erosion**

Soil erosion is the physical removal of the soil by means of storm runoff, raindrop impact, wind, animal, or human activity. The processes most responsible for soil erosion in the CCMA are surface erosion (sheet and rilling), fluvial erosion (gullying or streambank erosion), and landslides.

Moderately high to extremely high rates of soil erosion appear to be concentrated near routes, hillclimbs, and the inner gorge areas adjacent to stream channels. Eroded soil that reaches streams is transported downstream during high flows and affects downstream land and water users. Many factors affect the degree of soil erodibility and the type of erosion process. Rainfall intensity, slope steepness, plant cover and the physical and chemical properties of the soil affect the extent and type of erosion that occurs.



Erosion along a route

In part, high rates of erosion in the serpentine watersheds is a natural consequence of the erodible soils formed from highly sheared and fractured serpentine rock containing abundant chrysotile asbestos. Many of these steep slopes lack soil or vegetative cover. On these barren slopes, run-off from winter storms causes extensive rill and gully erosion, which contributes to sediment yields in stream channels. Two important causes of gully formation, which have been large contributors to sediment yield from the CCMA route system, are stream diversions and through-cut roads. Erosion on both barren and vegetated slopes affects soil texture and composition, and can reduce infiltration capacity, soil productivity, and contribute to the release of asbestos fibers. Additional factors contributing to erosion include; hillclimbs that lead directly into stream channels, OHV use of barrens, removal or damage of riparian vegetation, streambed disturbance by vehicles, eroding roads and trails, and stream channel processes.

Sheet erosion occurs when “sheets” of water flow across the barrens and remove loose particles of soil and transport them downslope. Sheet erosion in general is so gradual of a process that it can go on undetected except for noticeable color changes in these serpentine soils. In the Clear Creek watersheds, a subtle soil color change usually can be seen where sheet flow has removed the uppermost soil horizon which is red-brown and has exposed the underlying blue-grey sub-soil. OHV use can disrupt the gravel lag and loosen underlying soil particles and structure, intensifying the effects of sheet erosion. The overall rate of sediment delivery to streams within the CCMA from sheet erosion processes appears to be relatively low.

A study was completed in 1993 by PTI Environmental Services to assess the rate of background soil erosion from the Clear Creek watershed, and to examine the magnitude of accelerated erosion due to human use of the watersheds. Modeling was used to estimate background (undisturbed) soil loss and the cumulative volume of soil expected to reach Clear Creek. The undisturbed annual soil loss ranged from 2 to 25 tons/acre, with a mean of 11 tons/acre. Most of the sub-watersheds had soil losses in the range of 9 to 12 tons/acre. Significantly, most of the soil erosion per unit area over the Clear Creek watershed is relatively uniform. Only 3 of the 42 sub-watersheds had soil losses in excess of 20 tons/acre, and these were located throughout the watershed. A sediment delivery ratio is used to account for soil that is eroded from hillslopes and re-deposited prior to reaching the stream channel network. The sediment yield at the mouth of Clear Creek from undisturbed soil conditions is estimated to be approximately 31,000 tons/year or approximately 3 tons/acre per year. Modeling from the PTI study (1993) indicates that not a great deal of active sediment is stored in the Clear Creek floodplain, and that Clear Creek is well adjusted to its present sediment load.

Roads of any type are a continuing source of erosion. Road related sediments are more easily delivered to stream channels than sediments from hillsides, because of constructed or eroded drainage paths. Road use, road failure, grading, and vehicle related damage to soil and vegetation on OHV play areas and hillclimbs, all serve to make roads less stable with respect to soil erosion than surrounding hillslopes. The combined effect of roads in the Clear Creek watershed is to increase the estimated sediment yield to Clear Creek above background levels, and varies greatly from 1-130 percent in each sub-watershed depending on road density. Overall, it was determined that from roads, there is a 16 percent increase above the undisturbed sediment yield to Clear Creek. The erosion rate from roads alone averages 80 tons/acre of road surface per year. The resulting total sediment yield from roads within the Clear Creek watershed is nearly 5,000 tons/year. Combined sediment yield at the mouth of Clear Creek from undisturbed soils and roads is approximately 36,300 tons per year. Erosion inventories have indicated that a significant source of sediment yields to streams occurs in relationship to stream and swale crossings, and as a result of gullies on roads and adjacent slopes. A study was prepared by Pacific Watershed Associates (1995) inventorying erosion on 110 miles of roads within the CCMA, and identifying management treatments to reduce the effects of roads on watershed erosion rates. The BLM has constructed hardened water crossings, rolling dips, water bars, and other maintenance treatments on roads within the CCMA based on recommendations of this study, and continues to implement erosion control measures to reduce future road related soil loss and sediment yield.

OHV use of barrens is another significant process which accelerates surface erosion. The mechanical action of OHV use on barren hillslopes progressively destroys the gravel lag deposit that otherwise armors the barrens. As gullying of the OHV play areas takes place, this process accelerates erosion further. Soil loss from hillclimb play areas was determined to be approximately 16 tons/acre of play area per year, with a sediment yield of approximately 5 tons/ acre. If sediment from OHV play areas is assumed to be transported directly to the stream channel without intermittent storage, the sediment yield is approximately 16 tons/acre per year.

The BLM currently employs Best Management Practices (Appendix D) related to road maintenance to reduce impacts to watershed resources. These measures include annual soil loss monitoring, construction of hardened crossings and rolling dips, stabilization of eroding trails, out-sloping, and vehicle barriers and fencing in riparian zones. Management practices can be applied to reduce erosion, contain eroded material, and modify recreation use on routes, trails, and barrens. Rehabilitation and restoration of closed roads will also be a key factor in reducing overall erosion and sediment yields.

## **Geology**

The CCMA is primarily underlain by asbestos-rich serpentinite of the New Idria diapiric body. This unit is composed mostly of sheared serpentinite that forms an elliptical shaped, northwest-trending intrusive mass, and is the core of the Coalinga anticline. Several distinct rock units are also present in the Clear Creek watershed, including Franciscan sandstones and meta-sedimentary rocks that outcrop near the mouth of Clear Creek, and a nearly continuous northwest-southeast trending calcareous silicate rock that outcrops in the middle of the Clear Creek watershed.

The geology of the CCMA is a result of a complex history of plate tectonics. The serpentinite mass was originally part of the Pacific Ocean sea floor that was subducted under the North American continent. This unit was later uplifted and intruded through the overlying sediments that comprised the core of various anticlines within the Diablo Range. The rock unit underwent further deformation, shearing, and redistribution as a result of right lateral movement along the San Andreas fault system. During the uplift, associated erosion, and piercement of the serpentinite mass into the core of the Coalinga anticline (the present-day New Idria serpentinite mass), some of the rock unit became exposed during the Miocene epoch. Subsequent landslides to the east, off the flanks of the rising anticline, resulted in emplacement of serpentinite bodies in the Miocene sediments. Miocene and other younger aged strata also contain detritus eroded from serpentinite bodies, indicating that uplift in the Coast Ranges has continued since the Miocene epoch. The Coast Ranges underwent a major regional uplift sometime during the Pliocene and Pleistocene epochs, which defined the boundary between the Coast Ranges and the Great Valley (San Joaquin) of California. As a result of this uplift and subsequent erosion, large alluvial fans were formed along the western edge of the San Joaquin Valley. Evidence of continued uplift and mass wasting indicate that the uplift on some of the folds continues to date.

The asbestos and associated mineralization in the New Idria serpentinite mass resulted in early mining activity in the CCMA. As a result, this area has approximately 300 mining claims; however most of the mining activity is of casual use rather than commercial use. Casual use means that no explosives or mechanized equipment are allowed, and surface disturbance is limited to five acres or less. Historical activities included exploration, prospecting, and mining of asbestos, chromite, cooper, gemstones, magnesite, and mercury. Mercury was mined in Idria on the north edge of the CCMA, as late as the 1970's. Located in the center of the CCMA, the last producing asbestos mine in the U.S., the KCAC mine closed in 2002. To accommodate mining, exploration roads were built throughout the watershed and expanded during the 1930's and 1940's. Current recreation activities are facilitated by the large network of exploration roads which are the basis of the current route network. There is currently no commercial mineral production presently occurring on public land within the CCMA.

### **3.3.4 Human Health**

#### **Asbestos**

Asbestos is a generic term that refers to a class of six needle-shaped mineral types, all of which occur naturally in the environment. Individual asbestos fibers are only visible under a microscope. Asbestos has several unique properties, making it useful for industrial and commercial applications. Asbestos fibers are heat-resistant and very durable, allowing them to persist in the environment for many years. In addition, because of their size and shape, these fibers are easily disturbed and made airborne. Once the fibers are in the air they may remain suspended and easily travel with the prevailing wind.



KCAC asbestos mine

Asbestos found in the Clear Creek area is primarily of the chrysotile mineral type, which is also referred to as the "short-fiber" type of asbestos. Both animal and human studies have demonstrated that inhalation of all types of asbestos can be carcinogenic (PTI, 1992). Although there are considerable differences in the cancer potency of these six fiber types, the entire class of asbestos fibers, including chrysotile asbestos, has been classified as a human carcinogen. Adverse health effects from chrysotile inhalation may include cancer of the larynx, lung cancer, mesothelioma and asbestosis. Most of these adverse health effects are the result of exposure to high concentrations in the workplace over many years. However, the short-term and generally lower airborne asbestos concentrations found in an outdoor environmental setting still may increase a person's chances of developing cancer.

All types of asbestos fibers are a health hazard when they are disturbed, become airborne and are then inhaled. Asbestos fibers are breathed deep into the sensitive lung tissue and become imbedded in the cell walls. Once asbestos fibers enter the lung, they remain trapped there. These fibers are irritants, and cause the human body to develop scar tissue over individual fibers. The medical term for this disease is called asbestosis; it usually develops over long periods of time and is related to the amount of asbestos fibers inhaled.

Asbestosis, or lung scarring, increases the difficulty in breathing, reduces the oxygen uptake in the lung and can also strain the heart muscle. This disease can develop after 10-15 years after first exposure to asbestos and is a permanent condition with no known cure. Several types of cancer are associated with asbestos exposure, including lung cancer, mesothelioma and gastrointestinal cancers of the stomach, colon or esophagus. All of these diseases have been associated with both occupational and non-occupational exposures to asbestos. The chances or risk of contracting these asbestos-related diseases depends upon several risk factors. These factors include exposure concentration (quantity),

exposure duration, exposure frequency, individual risk factors, and the size, shape, and chemical makeup of asbestos fibers.

BLM employees are required to follow OSHA regulations related to exposure to asbestos. These procedures include, personal air monitoring for exposure to asbestos, personal decontamination, and vehicle and equipment decontamination. This has provided BLM with a database of asbestos air concentrations in the CCMA for the years 1988-1992. Additional studies in 1978 and 1979 were conducted by the University of California at Berkeley, in which air samples were collected, laboratory analysis was performed, and a report of all findings submitted to the BLM.

BLM's Technical Assistance Contractor, PTI Environmental Services, prepared a Human Health Risk Assessment report that estimated the risk to the public from asbestos exposure in the ACEC. This report is contained in the FEIS (1995) for the CCMA. Based upon the amount of asbestos inhaled during activities, an individual who visits the Clear Creek Management Area repeatedly can expect to incur some increased amount of health risk. When evaluating these risk estimates, the reviewer should be aware of the various uncertainties in the data that may exist and consider how these uncertainties may affect the actual human health risks resulting from exposure at this site.

Although these risks have been estimated based upon the average frequency of exposure per year by an individual, there are uncertainties associated with these numbers. For example, increased visits per year, an individual's age and heredity and other lifestyle habits such as tobacco smoking could increase an individual's risk. The secondary risks from the exposure outside the Clear Creek Management Area via offsite transport of asbestos into the homes and communities have not been quantified. This secondary exposure cannot be accurately determined, but risks from secondary exposure are expected to be less than those associated with onsite exposure.

Human health effects associated with asbestos result primarily from chronic exposure to airborne asbestos via inhalation. According to the Agency for Toxic Substances and Disease Registry (ATSDR), it is likely that health effects seen in children exposed to high levels of asbestos will be similar to the effects seen in adults. Children are generally believed to receive higher doses than adults from inhalation of airborne asbestos, and may be at greater risk than adults. The Environmental Protection Agency will be preparing a new health risk assessment for airborne asbestos in 2004. As new risk assessments and information become available, BLM will incorporate them into its management of the CCMA.

According to EPA, recent work with asbestos exposure studies in Libby, Montana indicates brief exposures to high concentrations may lead to various asbestos related diseases. This information is a result of EPA's Libby, Montana Evaluation (2001) of Risk Assessment values, related to asbestos exposure. Based on an analysis of the data, EPA calculated that lifetime continuous exposure to asbestos air concentrations of 0.0001 fiber/mL could result in up to 2-4 cancer deaths (lung cancer or mesothelioma) per 100,000 people. This air concentration is within reported ranges of ambient air levels (0.00001 to 0.0001 fiber/mL). The EPA analysis has been extensively discussed and reviewed in the scientific literature. BLM's 1992 Risk Assessment concluded that the employees & visitors would have a statistical chance of 5 cancer deaths per 100,000. Based on airborne concentrations from a 0.2– 0.12 fiber/mL, using only chrysotile asbestos. Upon completion of EPA's asbestos exposure study in 2004, they will be reviewing and possibly updating their cancer risk estimates for asbestos.

In August 2003, Amphibole asbestos, identified as tremolite asbestos or actinolite asbestos, was reported to be a minor contaminant in some deposits of chrysotile in the Clear Creek Management

Area. The evidence that tremolite asbestos exists is from TEM analysis taken based upon a report to BLM that tremolite asbestos fibers may be present near the now abandoned KCAC asbestos mine. The significance of this finding is that inhaled tremolite asbestos fibers are more persistent in lungs than inhaled chrysotile fibers. A recent EPA and ATSDR evaluation of the Libby, Montana tremolite asbestos exposure has raised additional awareness as to the cancer potency of other types of asbestos mineral, such as tremolite. Some investigators have proposed that amphibole asbestos fibers, such as tremolite asbestos, are more potent than chrysotile fibers in inducing fibrotic lung disease and lung cancer, while others propose that differences in the latency of chrysotile and amphibole-asbestos fibers in inducing lung cancer, cannot be reliably discerned from available data (ATSDR). Despite the dispute in the scientific literature concerning these issues, there is wide concurrence that exposure to any type of asbestos including chrysotile, can increase the risk for asbestosis, mesothelioma, and lung cancer in humans.

### **Metals**

Soil analytical results (Dynamac, 1998) revealed that the concentration of metals detected within the CCMA, are inherent to a highly mineralized area. Thirteen of the 15 abandoned mine lands sites sampled, contained metal concentrations that exceeded EPA proposed Soil Screening Levels (SSL's) for either ingestion or inhalation. Arsenic, mercury, and nickel were consistently detected at levels that exceeded the ingestion SSLs, while mercury was also detected at levels that exceeded the inhalation SSLs. To evaluate the potential threat to human health, the surface water analytical results were compared to Federal drinking water regulations. Six downgradient surface water samples contained concentrations of antimony, cadmium, chromium, mercury, and nickel that exceeded the Maximum Contaminant Levels (MCL's). On Clear Creek and the San Benito River, where multiple sampling points were established, cumulative, increasing concentrations did not appear to occur downstream. In general, the metal concentrations detected in the Clear Creek watershed were very low, with the exception of chromium which had two occurrences where MCLs were exceeded. Downstream sediment sampling suggests that the transport of metals may be limited to areas just downstream of a confluence of the mine drainage and the receiving stream. Metals detected in Clear Creek appear to be fairly stable, with only a small fraction entering solution. The highest metal concentrations were detected in the San Carlos and Larios Canyon watersheds. The results of analysis revealed that the media samples collected from the San Carlos watershed consistently exhibited the greatest concentrations of metals, both in background and down gradient samples. Water sampling at Hernandez Reservoir indicates the presence of mercury and asbestos exceeding drinking water standards.

A cause for environmental concern is the appearance of mercury in waters and agricultural soils in the San Luis River to the north and in the Panoche Fan to the east of the Management Area. The source of the mercury is the New Idria mine works in the Management Area that between 1858 and 1972 yielded the second largest mercury production in North America. High levels of mercury in soils likely come from a combination of natural dispersion and human mining activity.

Ganguli et al. (2000) have measured mercury concentrations and cation species composition from streams impacted by the New Idria mercury mine in the Management Area. They estimate a baseline flux of  $1.5 \text{ kg yr}^{-1}$  of mercury from acid mine drainage from the mine and hypothesize that the source of the mercury in the San Carlos Creek comes from mine tailings. Most mercury exported from the New Idria mine and other point sources in the Management Area leaves as methylated mercury. In a comparative study of degradation of microbially created methylated mercury by Marvin-Dipasquale et al. (2000), in three ecosystems impacted by mercury contamination, San Carlos Creek has the highest degradation rate of methylated mercury corresponding to the highest amount of total mercury

in the creek water. Degradation results principally from both aerobic and anaerobic reductive demethylation, producing methane. Outputs of mercury from the Management Area appear to increase during high water flows as iron hydroxide does not adsorb mercury and methylmercury as efficiently as during low flows. The cumulative downstream impacts of mercury transport from the Management Area on human populations are not known at present.

Coolbaugh et al. (2002) have done field studies at the New Idria Mine to calculate emissions of mercury to the atmosphere. Averaged inputs at New Idria are  $9.2 \text{ ng m}^{-2} \text{ h}^{-1}$  of mercury ions and comprise a previously unquantified but significant source of mineralized mercury to atmosphere.

Cr(VI), also referred to as hexavalent chromium Cr+6, exists in several forms: chromic acid, calcium chromate, chromium trioxide, lead chromate, strontium chromate, zinc chromate, and potassium dichromate. Chromium(VI), a naturally occurring oxidative source of occurs in the San Benito Mountains. For more information on chromium(VI) connect to Flegal and Abu-Saba at: <http://www.msi.ucsb.edu/msilinks/CRC/CRCtexts/Toxics/ucsc1.html>. Chromium(VI) concentrations exceed EPA water quality criteria in San Carlos Creek, upstream from the abandoned New Idria mercury mine. Apparently, oxidation of chromite inclusions in the serpentinite deposits abundant in that region, yield the toxic form of chromium. San Carlos Creek mixes with acid mine drainage from the New Idria mine, lowering the ambient pH and introducing substantial amounts of iron(II). Consequently, dissolved chromium(VI) reduces to chromium(III) and adsorbs to ferric oxide surfaces. Flegal and Abu-Saba remark on this a curious example of an anthropogenic impact mitigating a naturally occurring contaminant.

### **3.4 BIOLOGICAL RESOURCES**

Serpentine soils in the CCMA have given rise to a unique assemblage of plants and plant communities. One example is the San Benito evening primrose, a federally protected species. Some plant communities such as the San Benito Mountain Forest are also unique and warrant special management. While vegetation within the Serpentine ACEC is specially adapted to serpentine soils, the overall vegetative cover tends to be sparse. Many slopes are devoid of vegetation entirely, or have very little vegetative cover. These "barren" hillslopes are a striking feature of the CCMA.

The serpentine watershed and riparian areas in the CCMA have been subject to widespread surface disturbances over the last century. The riparian zones around the perennial streams and some intermittent streams, and the barren or sparsely-vegetated serpentine slopes, all exhibit a fragile ecology and unusual diversity of plants. In addition, the four special status animal species (foothill yellow-legged frog, two-striped garter snake, bald eagle, and western pond turtle) are known to occur in the CCMA and are dependent in some stage of their life cycles on quality stretches of creeks and streams. In total, the Clear Creek and surrounding watersheds support plant and animal communities that are important from a California biodiversity perspective.

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 (such as mining, road building and maintenance, and OHV recreation) has negatively impacted soil and vegetative resources over the years.

A high priority for management of the CCMA is to protect existing populations of the San Benito evening primrose and attempt to expand its range to areas that have moderate and high potential

habitat for the species. This includes managing to ensure that sensitive species and communities maintain or enhance their condition. The San Benito evening-primrose (*Camissonia benitensis*) is a federally listed threatened plant species which occurs on 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 endangered or threatened species. The only known locations of the San Benito evening-primrose are limited to serpentine-derived alluvial deposits within the vicinity of the CCMA.

The long-term management of the occupied and potential habitat of *Camissonia benitensis* has included fencing and pipe barrier construction, and a variety of administrative controls, including visitor education, personal contacts, signing, law enforcement, and administrative closures. Monthly compliance monitoring of occupied and high and moderate potential habitat documents the level of compliance, and assists in assigning appropriate priority to repair and protective measures. While the majority of *Camissonia benitensis* habitat areas remain in compliance for protection, some sites continue to receive non-compliance. As a result of monitoring during the 2003-2004 use season, the BLM Hollister Field Office implemented an emergency closure in November 2003 for the Larious Canyon Terrace in the CCMA to protect this species. A Federal Register Notice published on February 18, 1998, also closed Upper Clear Creek Canyon ("Upper Hillclimb Canyon") to all vehicle use to protect *Camissonia benitensis* and sensitive riparian habitat. The closed area is encompassed by routes R001, T124, R010, T151, and R008. The San Benito Mountain Research Natural Area has been closed to OHV use since 1972 except for R011, R010, and T158 to protect sensitive resources. Several *Camissonia benitensis* occurrences are located along Upper Clear Creek and San Carlos Creek within these areas. These areas are a high priority for further protection as a result of continued damage by OHV use in sensitive species habitat.

### **3.4.1 Vegetation Communities**

Vegetation communities occurring within the Clear Creek Management Area are described in the Clear Creek Management Area RMP Amendment and FEIS (BLM 1995). The naming of plant communities throughout this document is intended to be as consistent as possible with the classification of Terrestrial Plant Communities of California (Holland, 1986). Individual plant species nomenclature follows The Jepson Manual, Higher Plants of California (Hickman, ed. 1993). Vegetation within the CCMA is divided into two groups based on soil types. The first is vegetation growing on soils derived from sedimentary rock, and includes Non-Serpentine Foothill Pine-Chaparral Woodland, Chamise Chaparral, Valley Oak Savannah, and Non-Native Grassland. The vegetation associated with sedimentary soils mostly occurs outside of the Serpentine ACEC and will henceforth be referred to as non-serpentine. These non-serpentine vegetation communities are not discussed in detail as they have had limited impact due to relatively low OHV recreation use.

The second group consists of vegetation growing on soils derived from serpentine rock, the dominant soil type within the 30,000 acre Clear Creek Serpentine ACEC. Areas with soils derived from serpentinitic rocks are recognized world-wide for their unique flora and fauna, primarily due to the nutrient-poor and chemically harsh composition of these soils. Vegetation communities supported on these soils include Serpentine Barrens, Serpentine Foothill Pine-Chaparral Woodland, the unique Southern Ultramafic Jeffrey Pine Forest (also referred to as the "San Benito Forest" [Kuchler, 1997], comprising a Jeffrey-Coulter-foothill pine and incense cedar association), Serpentine Riparian Vegetation, Serpentine Vernal Pools, and Serpentine Chaparral (more specifically leather oak [*Quercus durata*] chaparral). A description of these serpentine vegetation communities follows.

### **Serpentine Barrens**

Griffin and Yadon 1989 and Taylor, 2000 have noted that the serpentine barrens are the most striking vegetation feature of the San Benito Mountain landscape. In this document, "serpentine barrens" generally applies to barren talus slopes and openings in wooded and chaparral areas that support little herbaceous or woody vegetation. Approximately ten percent (2,876 acres) of the Serpentine ACEC consists of serpentine barrens ten acres or larger, which have been delineated and mapped formally as barrens within the CCMA. This plant community exhibits slow growth and replacement rate because of naturally poor soil conditions. For example, comparisons between 1932 and 1990 photos of the same hillsides show the same individual trees with little change in their height. These barrens have a living surface layer referred to as a biological crust, which is also referred to as armoring. This biological crust results from a close association between soil particles and micro-organisms such as algae, cyanobacteria, and fungi, which provide critical nutrients to the soil surface such as nitrogen and calcium. Biological crusts are important components for soil cohesion and vegetation establishment in the nutrient poor serpentine soils. Off-highway vehicle use on serpentine barrens breaks down this crust and armoring, and has caused accelerated erosion and negative impacts to plant growth and regeneration. Once these barrens are "scarred," the recovery period appears to be extremely slow. Vegetation on the serpentine barrens throughout the CCMA is particularly sensitive to direct and indirect impacts from intensive OHV recreation use.

### **Serpentine Foothill Pine-Chaparral Woodland**

Serpentine foothill pine-chaparral woodland is the most abundant vegetation community on serpentine soils in the CCMA as elsewhere in California. Typical serpentine endemic plants in this community are leather oak (*Quercus durata*), interior silk tassel (*Garrya congdonii*), and twistflower (*Streptanthus insignis* ssp. *insignis*), as well as non-endemic species such as foothill pine (*Pinus sabiniana*), Mexican (pointleaf) manzanita (*Arctostaphylos pungens*), and California (shining netvein) barberry (*Mahonia dictyota*). The CCMA supports 27 serpentine-endemic plant species that vary in their degree of rarity. Most of these species grow within openings between chaparral shrubs. Four species only occur in the CCMA and in nearby serpentine sites outside the CCMA: the San Benito evening primrose (*Camissonia benitensis*), rayless layia (*Layia discoidea*), San Benito monardella (*Monardella antonina* ssp. *benitensis*), and San Benito onion (*Allium howellii* var. *sanbenitensis*). A small population of a scrub oak species, Palmer oak, (*Quercus palmeri*), which normally grows in non-serpentine chaparral, occurs at one location in the CCMA. The nearest population of this oak otherwise is 60 miles away, west of Paso Robles.

Several other species, while not restricted to the CCMA or serpentine soils, comprise the bulk of herbaceous species for this community in the CCMA:

prairie flax (*Linum lewisii*),  
clustered broomrape (*Orobanche fasciculata*),  
California groundcone (*Boschniakia strobilacea*),  
western wallflower (*Erysimum capitatum* var. *perenne*),  
Andrew's bedstraw (*Galium andrewsii*), stiffbranch,  
bird's beak (*Cordylanthus rigidus* ssp. *rigidus*),  
goosefoot violet (*Viola purpurea*).



San Benito monardella (*Monardella antonina* ssp. *benitensis*)

These herbaceous plants grow primarily on sparsely vegetated slopes and openings between chaparral, and under forest stands that may also experience OHV recreation use. Because roots of herbaceous plants are shallower and smaller than those of woody shrubs and trees, herbaceous plants are easily severed or dislodged when disturbed, especially on the loose soils and steep slopes found in the CCMA. In localized areas they have been impacted by road construction, OHV travel, and camping. However, their overall survival is not currently threatened, as they remain abundant and are wide-ranging. In many areas, chaparral species are natural obstacles to off route vehicle travel. Where typical chaparral species occur on serpentine barrens or in openings, these species may appear degraded or declining in vigor due to off-road vehicle travel or recreational camping.

#### **Southern Ultramafic Jeffrey Pine Forest**

The southern ultramafic Jeffrey pine forest includes a unique assemblage of conifers only known to co-occur in the area of San Benito Mountain in San Benito County. Conifer species in this vegetation type include:

Jeffrey pine (*Pinus jeffreyi*),  
foothill pine (*P. sabiniana*),  
Coulter pine (*P. coulteri*), and  
incense cedar (*Calodrocedrus decurrens*).

This forest within the CCMA has the only central coast population of Jeffrey pine and the largest populations of incense cedar in the region. Coulter pine and Jeffrey pine, and possibly foothill pine hybridize here (Sawyer, Keehler-Wolfe, 1995).

Forested areas throughout the CCMA, including the southern ultramafic Jeffrey pine forest, are threatened by intensive off-highway vehicle cross country travel. At present the stands of mixed conifer in this unique forest are dominated by mature trees with very low seedling and sapling

recruitment. Open OHV use in the Jeffrey pine forest increases the rate of soil loss on forested slopes, exposing tree roots, uprooting saplings and seedlings.

### **Serpentine Riparian Vegetation**

Riparian communities occur where surface water flows all or most of the year, and include adjacent areas of vegetation that are dependent on water tables at or near the ground's surface. Riparian communities are critically important for aquatic plants and animals as well as for terrestrial wildlife for food, water, shelter, and habitat corridors for travel. The serpentine riparian community within the CCMA supports an unusual assemblage of plant species along Clear Creek, the San Benito River, Picacho Creek, San Carlos Creek, Sawmill Creek, White Creek, and many smaller tributaries that flow into Clear Creek and the San Benito River.

Creeks in the CCMA exhibit varying degrees of quality in riparian habitat. Creek areas in proper functioning condition contain a series of small pools one to four feet deep, connected by a slightly meandering but stable streambed that is not deeply down-cut or altered, and provide habitat for plant species not found elsewhere in the CCMA. Brewer's willow (*Salix breweri*), an uncommon serpentine-restricted species, dominates the overstory, and two low-growing grasses, scratchgrass (*Muhlenbergia asperifolia*) and inland saltgrass (*Distichlis spicata*), dominate the ground cover. Interspersed among the willows and grasses are uncommon plants such as:

shortspike hedgenettle (*Stachys pycnantha*),  
Hernandez's bluecurls (*Trichostema rubisepalum*), and  
Guirado's goldenrod (*Solidago guiradonsis*).

More common riparian plants in the CCMA include:

marsh grass-of-Parnassus (*Parnassia palustris*),  
giant red Indian paintbrush (*Castilleja miniata*), and  
Van Houtte's columbine (*Aquilegia eximia*).

Pools, meandering streams, and productive vegetative growth all serve to slow down flowing water and retain it longer in the soil, trap and hold sediments, reduce the channelization of stream banks, and raise the water table so that water is available to plants farther from the creek. Examples of riparian areas in proper functioning condition are the upper two miles of Picacho Creek and portions of Clear Creek and Sawmill Creek.

Riparian areas in unsatisfactory condition in the CCMA include areas alongside creeks where riparian vegetation is partially or completely absent, and streambanks and soils have been highly disturbed as a result of vehicle and camping use. Camping activity has greatly reduced populations of riparian herbs along Clear Creek (Griffin, 1989). Also, disturbance is most obvious in areas where intense vehicle traffic occurs on barren serpentine slopes that lead directly into creeks. When riparian vegetation and soil in and adjacent to creeks are impacted from human disturbance, habitat for invertebrates, fish, and aquatic amphibians and reptiles also deteriorates. Areas in upper Clear Creek Canyon, Sawmill Creek, on the north side of Indian Hill, and north of Staging Area 5 are four examples of such degradation.

Roads constructed in the past within floodplains in the CCMA, such as along Sawmill, San Carlos, and Clear Creeks also impact stream habitats through direct deposition of sediments into creeks. In the past, in extreme cases, road construction and maintenance actually resulted in burying portions of

creeks and surrounding vegetation. These areas are a high priority to implement Best Management Practices (Appendix D) to minimize watershed impacts and restore riparian conditions.

Impacted riparian areas in the CCMA include segments of creeks which are shallow and wide, in which sediments accumulate from sources of erosion upstream, such as collapsing hillsides or severely gullied roads. Sediment buildup can divert stream flows into the bottom of adjacent hillsides, and may inundate plants and eventually cause hillside failures. As a result, additional large sediment deposits move downstream and amplify the erosion cycle in the watershed. Past landslides into Clear Creek are visible below some road cuts where the cohesive integrity of unstable hillsides has declined.

### **Serpentine Vernal Pools**

These pools, which typically dry out by late summer, support several plant species not found elsewhere in the CCMA. BLM recognizes that over 90% of vernal pool habitat has been removed from California and considers the protection of remaining pools a high priority. Four vernal pool areas in the CCMA occur in the Spanish Lake area and on the north side of Clear Creek Canyon. Fencing and surrounding chaparral have successfully protected vernal pools in Clear Creek Canyon to eliminate OHV use. In FY 2003, BLM installed pipe barriers by Spanish Lake and small vernal pools nearby to prevent vehicle disturbance.



Spanish Lake vernal pool

### **Serpentine Chaparral**

This vegetation community, serpentine chaparral, is scattered throughout Central and Northern California, wherever serpentine outcrops occur. This sclerophyllous scrubland is divided into two groups: Mesic Serpentine Chaparral, dominated by chamise (*Adenostoma fasciculatum*) and toyon (*Heteromeles arbutifolia*); and Leather oak chaparral dominated by Leather Oak (*Quercus durata*), a serpentine endemic. Both chaparral types occur within the CCMA, where soils are shallow, stony, and derived from serpentine. This vegetation community is usually found below 5,000 feet elevation.

### **3.4.2 Special Status Plant Species**

Special status plant species are those species which are: (1) Federally listed as Threatened or Endangered; (2) Federally proposed as Threatened or Endangered; (3) Federal candidates for listing as Threatened or Endangered; (4) State listed as Endangered, Threatened, or Rare; or (5) designated as sensitive by the BLM California State Director.

Seven different special status plant species occur within the CCMA. One of these species, the San Benito evening-primrose (*Camissonia benitensis*), is listed as federally threatened (Appendix F). These plant species are either locally rare populations (geographic endemism) or are only known to exist on serpentine soils (edaphic endemism). The BLM considers special status species in planning any BLM-authorized activity, to ensure that the BLM does not contribute to negative impacts and declines of the species populations and their habitats.

The species described below are also listed by the California Native Plant Society as List 1B. List 1B includes plants that are rare, threatened, or endangered in California; therefore, it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA). All of the plants that make up List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Extensive inventory and monitoring by protocols is underway for the San Benito evening-primrose and the rayless layia (*Layia discoidea*); the remaining special status plant species in the CCMA will be part of an inventory and monitoring program scheduled for implementation Spring 2004.

Section 7 of the Endangered Species Act (ESA), of 1973, as amended directs Federal departments and agencies to ensure that actions authorized, funded or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats. The ESA mandates agencies to consult when actions may affect listed species or critical habitat and to confer with the appropriate Secretary whenever an action is likely to jeopardize the continued existence of any species proposed for listing as threatened or endangered, or whenever an action might result in adverse modification of critical habitat proposed for listing (50 CFR 402).

On January 25, 1996 the BLM HFO requested formal consultation with the U.S. Fish and Wildlife Service on the Clear Creek Management Area/ Resource Management Plan Amendment and Final Environmental Impact Statement and the Proposed Administrative Site Development Plan (1-8-96-F-20). A Biological Opinion was issued in 1997. It was the Service's biological opinion that the Bureau's continued management of the Clear Creek Management Area is no not likely to jeopardize the continued existence of *Camissonia benitensis*. No critical habitat was designated for this species. The BLM continues to manage the CCMA in conjunction with this Biological Opinion

#### **Federally Listed Plant Species**

##### **San Benito Evening Primrose (*Camissonia benitensis*)**

The San Benito evening-primrose grows on serpentine alluvial flats, terraces, and debris flows adjoining the creeks and tributaries throughout the Clear Creek Management Area in San Benito and Fresno counties. The substrate for most of the species range is the largest serpentine formation in the southern Coast Ranges (Jennings 1977, USFWS 1998), the New Idria serpentine landform in San Benito County.



San Benito evening-primrose (*Camissonia benitensis*), Federally Threatened

The US Fish and Wildlife Service proposed to list the San Benito evening-primrose as an endangered species on October 31, 1983 (48 FR 50126) based primarily on the threats to the species from off-highway vehicle (OHV) recreation in the Clear Creek Management Area (CCMA). With respect to protective measures proposed and implemented by the BLM, the Service designated the San Benito evening-primrose as a threatened, rather than endangered, species on February 12, 1985 (50 FR 5758). Additional threats to the species include road construction, recreation activities such as camping along stream terraces, vandalism, mining, and random environmental events (intense rain and flood events). First described by Raven (1969), this small, annual serpentine endemic plant lacks a basal rosette but occasionally has clusters of linear, villous leaves near the base of its wiry purplish-green stem. The inflorescences are either erect or decumbent and are covered with glandular-pubescent and villous hairs. The nodding, radial flowers open at dawn, and rarely at sunset as is typical of the genus *Camissonia*. Although the petals are bright yellow, often with red dots at their base, the species can be cryptic during inclement weather when flowers often remain closed. Excellent descriptions and instructions for distinguishing the *Camissonia* and *Oenothera* species are part of a report to the Bureau about the ecology and life history of the San Benito evening-primrose by Taylor (1990).

Fifty two populations of the primrose are currently known to exist and their distribution is as follows;

<b>Populations by Sub-Watershed</b>	<b>Approximate Acres</b>
29 (42 percent) in the Clear Creek (all public)	213.6
11 in the San Benito River (9 public)	120.8
2 in the Larios Canyon (all public)	12.0
2 in San Carlos Creek (public)	2.3
1 in Lorenzo Vasquez Creek (private)	1.0
5 in the White Creek (1 public)	75.6
2 in the Laguna Creek (both private)	1.5
52 TOTAL (47 on public lands within the CCMA)	426.8 ac (423.3ac in CCMA)

*Camissonia benitensis* sites exhibit a wide range in size (147.3 acres to 1.0) due to several possible factors, including; amount of surrounding available habitat, terrace size and stability, density of surrounding vegetation, and degree of disturbance to the area. The populations existing in Clear Creek Canyon occur at approximately 2,000' elevation on remnant terraces in proximity to OHV staging and camping areas. The two San Carlos Creek populations grow at nearly 5,000' elevation in deeper soils in an environment with greater moisture than the populations growing on lower canyon terraces. The number of individuals at each population may vary widely from year to year due to climatic conditions. When environmental conditions are conducive for germination, (e.g. amount and timing of precipitation), population counts can be high at many sites, however, other populations may not manifest any germination that year.

The San Benito evening-primrose habitat occurs in the following vegetation communities; serpentine foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest and serpentine riparian.

### **Special Status Species**

In addition to the San Benito evening-primrose six other special status species occur in the CCMA. These species are:

Rayless Layia - *Layia discoidea*,  
Mount Diablo Phacelia - *Phacelia phacelioides*,  
San Benito Spineflower - *Chorizanthe biloba* var. *immemora*,  
San Benito Fritillary - *Fritillaria viridea*,  
Talus Fritillary - *Fritillaria falcata*, and  
Slender Pentachaeta - *Pentachaeta exilis* ssp. *Aeolica*.

These species are described in detail in Appendix F

### **Other Plant Species of Concern (CNPS List 4)**

In addition to the above special status plant species, several uncommon plant species that are typically associated with serpentinic soils occur throughout the CCMA as well. The following species are on the CNPS List 4, a watch list for species of limited distribution. These species are:

Carlotta Hall's Lace Fern – *Aspidotis carlotta-halliae*,  
Hernandez BlueCurls – *Trichostema rubisepalum*,  
San Benito Thornmint - *Acanthomintha obovata* ssp. *Obovata*,  
Santa Clara Thornmint – *Acanthomintha lanceolata*,  
San Benito Monardella - *Monardella antonina* ssp. *Benitensis*,  
Guirado's Goldenrod – *Solidago guiradonis*,  
Western Heermann's Buckwheat – *Eriogonum heermannii* var. *occidentale*, and  
South Coast Range Morning Glory - *Calystegia collina* ssp. *Venusta*.

These species are described in detail in Appendix F.

### **3.4.3 Special Status Animal Species**

#### **Native Animals of Management Concern in Clear Creek Management Area**

The occurrence of any native animal species of management concern on public lands is a factor considered in planning for the CCMA. Bureau wildlife biologists queried the California Natural Diversity Data Base for twenty USGS 7.5-minute quadrangles, including the CCMA and the surrounding region, to augment information in BLM files on native animals species of management concern that do occur and could occur in the CCMA. Biologists did not consider animals such as the California tiger salamander, or rare invertebrates, which have not been found within ten miles of the CCMA or that occupy habitats not found in the CCMA. California state species of special concern may not have extensive data to include in this document. All sensitive animal species are part of the CCMA Wildlife Habitat Protection Plan (BLM, 2003). Monitoring programs are currently being developed. Species descriptions come from the following Internet sources: [www.dfg.ca.gov](http://www.dfg.ca.gov), [www.sdnhm.org](http://www.sdnhm.org), [www.sacramento.fws.gov](http://www.sacramento.fws.gov), [www.endangered.fws.gov/wildlife.html](http://www.endangered.fws.gov/wildlife.html), and [www.ca.blm.gov/pa/biology/index.html](http://www.ca.blm.gov/pa/biology/index.html).

#### **Special Status Animal Species, Confirmed Occurrences**

Five special status animal species (Appendix F) occur in the CCMA. Special status animal species are those species that are: (1) Federally listed as Threatened or Endangered; (2) Federally proposed as Threatened or Endangered; (3) Federal candidates for listing as Threatened or Endangered; (4) State listed as Endangered or Threatened; or (5) designated as sensitive by the BLM California State Director.

California red-legged frog – *Rana aurora draytonii*

Foothill yellow-legged frog - *Rana boylei*,

Northwestern pond turtle (*Clemmys marmorata marmorata*),

Southwestern pond turtle (*Clemmys marmorata pallida*),

(The two subspecies of the Western pond turtle (*Clemmys marmorata*) are considered together here due to the difficulty in field identification and overlapping ranges)

Two-striped garter snake - *Thamnophis hammondi*, and

Bald eagle - *Haliaeetus leucocephalus*

#### **Amphibians**

##### **California red-legged frog – *Rana aurora draytonii***

The California red-legged frog is a federally listed species (threatened), with critical habitat proposed in the federal register. California's largest native frog, it ranges from 1.5 to 5 inches in length. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. The adults require dense riparian vegetation closely associated with still or slow moving water. The historic range of the California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico.

### **Foothill Yellow-Legged Frog - *Rana boylei***

The foothill yellow-legged frog is a BLM sensitive species and a California Species of Special Concern. This frog usually ranges in size from that of a nickel to a 50-cent piece. Formerly, it occurred from western Oregon south along coastal mountains to Los Angeles County, California and in the Sierra Nevada foothills. It is now rare or absent south of northwestern San Luis Obispo County and the southern Sierra Nevada foothills. The foothill yellow-legged frog inhabits rocky streams, creeks, and rivers in chaparral, woodland, and forest. This frog is associated with the riparian vegetation community, and occurs in all major creeks of the CCMA, with the largest population in Picacho Creek. During warm months, foothill yellow-legged frogs occupy the entire length of Clear Creek.

### **Reptiles**

#### **Northwestern Pond Turtle (*Clemmys marmorata marmorata*) and Southwestern Pond Turtle (*Clemmys marmorata pallida*)**

These two subspecies of the Western pond turtle (*Clemmys marmorata*) are considered together here because the two intergrade and are difficult to distinguish in some localities. The Southwestern pond turtle is a BLM sensitive species and a California species of special concern. The Northwestern pond turtle is a California Species of Special Concern. It ranges in size from three to seven inches long. This pond turtle is mainly found east of the Cascade-Sierra Nevada crest in northwest California, with outlier populations in southern California. For part of its life cycle, this turtle depends on streams, or lakes and reservoirs in open woodland, grassland, or open forest associated with the riparian vegetation community, of the CCMA. In the CCMA, the western pond turtle occurs in lower Clear Creek and in the San Benito River but has not been documented in any other CCMA creeks, perhaps because of the lack of large enough pools.

#### **Two-Striped Garter Snake - *Thamnophis hammondi***

The two-striped garter snake is a BLM sensitive species and a California Species of Special Concern. This snake ranges in size from seven to eighteen inches and occurs in perennial fresh water locations such as streams with rocky beds. It can be found from the vicinity of Salinas (Monterey County, California) to northwestern Baja California. Within the riparian vegetation community of the CCMA, the two-striped garter snake occurs in Clear Creek and White Creek sub-watersheds and may occur in all other creeks in the CCMA.

### **Birds**

#### **Bald Eagle - *Haliaeetus leucocephalus***

The bald eagle was listed as endangered in 1970 and declassified as threatened on July 12, 1995. This species has no designated critical habitat. Original declines in bald eagles were attributed to the use of DDT. In 1978, only 40 nest territories were known in California. As of 1997, 142 bald eagle nests were known from the six northern California National Forests, and public and private lands sites in California (CDFG 1998). In the BLM Hollister Field Office area, bald eagles are found during the winter and are generally associated with open bodies of water, such as reservoirs.

Wintering habitat for bald eagles is varied but requires a food source close by, with proximity probably the most important factor influencing perch selection. Favored perch trees are invariably

located near feeding areas, and individual eagles consistently use preferred branches (Stalmaster 1976). Winter surveys seem to indicate that bald eagles roost singly in larger trees that may be characteristic for open areas (Isaacs and Anthony 1983). There is no evidence of a communal bald eagle roost within the BLM Hollister Field Office area. Bald eagles winter along open bodies of water in the CCMA area, in particular the San Benito River and the Hernandez Reservoir near the CCMA. U S Geological Survey and California Department of Toxic Substance Control are currently measuring mercury levels in Clear Creek to characterize potential threat to bald eagles in the Hernandez Reservoir. These monitoring studies are ongoing and will be used in adaptive management of the CCMA. Vegetative communities within the CCMA that may serve as roosts or perches can be found in the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas.

### **Special Status Species, Potential for Occurrence**

Fourteen special status animal species have a potential to occur in the CCMA. These species are described in detail in Appendix F. Future monitoring, confirmed sightings, or specimens recovered from the CCMA will establish a known occurrence. These new occurrences will become a factor considered in future planning for the CCMA. These species are:

Ciervo Aegialian Scarab Beetle – *Aegialia concinna*,  
San Joaquin Dune Beetle – *Coelus gracilis*,  
Valley Elderberry Longhorn Beetle – *Desmocerus californicus dimorphus*,  
Vernal Pool Fairy Shrimp – *Branchinecta lynchi*,  
Conservancy Fairy Shrimp – *Branchinecta conservation*,  
Vernal Pool Tadpole Shrimp – *Lepidurus packardi*,  
California Condor - *Gymnogyps californianus*,  
Western Mastiff-bat – *Eumops perotis californicus*,  
Townsend’s Western Big-eared Bat – *Plecotus townsendii townsendii*,  
Pallid Bat – *Antrozous pallidus*,  
Long-eared Myotis – *Myotis evotis*, and  
Yuma Myotis – *Myotis yumanensis*  
Fringed Myotis- *Myotis thysanoides*  
Small-footed Myotis – *Myotis ciliolabrum*

### **Other Animal Species of Management Concern**

The HFO –BLM notes observations and is developing monitoring protocol for the six DFG California Species of Special Concern which occur in the CCMA. "Species of Special Concern" (SSC) status applies to animals not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist. These species are described in detail in Appendix F.

Coast Horned Lizard – *Phrynosoma coronatum* ssp. *frontale*,  
Sharp-shinned Hawk – *Accipiter striatus*,  
Golden Eagle – *Aquila chrysaetos*,  
Prairie Falcon – *Falco mexicanus*,  
Bell’s Sage Sparrow – *Amphispiza belli* ssp. *belli*, and  
Big-Eared Kangaroo Rat - *Dipodomys elephantinus*



Coast Horned Lizard – *Phrynosoma coronatum* ssp. *frontale*

### 3.4.4 Invasive Weeds

Executive Order 13112 requires BLM to detect, control, and eradicate existing populations of invasive weeds and to prevent further introductions of invasive weeds on BLM managed lands. The most threatening and abundant invasive non-native plant species found within the Clear Creek Management Area is yellow starthistle (*Centaurea solstitialis*). This highly invasive species grows up to three feet high and is well armed with spines throughout the plant. Yellow starthistle displaces native vegetation and wildlife, renders grasslands and rangelands uninhabitable to humans and livestock and is toxic to horses. The CCMA has an existing infestation of yellow starthistle (*centaurea solstitiatius*) that is expanding in coverage. Approximately 300 acres on the western edge of the CCMA are infested by yellow starthistle, including stabilized terraces that support the San Benito evening-primrose.

At one time yellow starthistle was thought to be intolerant of ultramafic soils, such as those in the CCMA serpentine ACEC, however, ongoing plant surveys indicate the spread of this weed up Clear Creek Canyon on serpentine and sedimentary soils. In addition to the increase in yellow starthistle infestation, rare plant and animal habitat is at risk. Yellow starthistle is most abundant in the oak savannah, stabilized riparian terrace and sedimentary inclusion. At the present time, no yellow starthistle is present in areas to the east of Clear Creek Canyon within the CCMA. Non-serpentine soils are more quickly colonized by yellow starthistle than are serpentinitic soils, most likely because non-serpentine soils have more plant nutrients and a deeper organic layer. However, yellow starthistle is found throughout the Clear Creek Canyon on both serpentine and non-serpentine soils. The primary agents for long-distance seed dispersal, are road maintenance equipment and the undercarriage of motor vehicles (Bossard, et al, 2000.) Yellow starthistle thrives on disturbed sites. A comprehensive weed management program for the CCMA and surrounding area is currently being developed and is a component of the management for the CCMA.



Yellow starthistle (*centaurea solstitialis*)

### 3.4.5 Grazing

#### Range Management:

Below is a listing of the BLM Grazing Leases within the boundary of the area addressed within the Clear Creek Management Plan. The listing includes the BLM Allotment Number, the Allotment Name, the number of acres included in the BLM grazing lease (note: allotments which also have public lands leased outside of the boundary of the area addressed within the Clear Creek Management Plan are indicated below with an asterisk), the number of acres included in the BLM lease which are within the boundary of the area addressed within the Clear Creek Management Plan, the number of Animal Units Months (AUMs) assigned to each lease, the number of private acres included in the grazing allotment, the season of livestock use and the type of livestock authorized.

Allot. Number	Allotment Name	Total Public Acres	Public Acres Within CCMA	Total Public AUMs	Private Acres	Season of Use	Livestock Class
4301	AKERS	368	368	69	3,060	Yearlong	Cows
4308	BIRDWELL	* 1,389	1,302	72	20,600	Yearlong	Cows
4319	LEWIS FLAT	* 190	47	19	80	Yearlong	Cows
4352	WILLOW SPRING	940	940	80	880	Yearlong	Cows
4359	QUARTER CIRCLE A-1	3,348	3,348	155	2,401	Yearlong	Cows

<b>Allot. Number</b>	<b>Allotment Name</b>	<b>Total Public Acres</b>	<b>Public Acres Within CCMA</b>	<b>Total Public AUMs</b>	<b>Private Acres</b>	<b>Season of Use</b>	<b>Livestock Class</b>
4374	JOAQUIN ROCKS	* 3,568	1,270	275	8,000	Yearlong	Cows
4379	UPPER LOS GATOS CREEK	4,317	4,317	1,036	895	1/1 - 5/31	Yearlings
4398	ADOBE	* 2,124	1,680	162	6,307	Yearlong	Cows
4401	WILLIAMSON	1,920	1,920	126	859	Yearlong	Cows
4409	BAR B	* 1,957	1,884	129	2,606	Yearlong	Cows
4410	HERNANDEZ	2,823	2,823	159	1,185	Yearlong	Cows
4411	ASHURST	* 12,759	2,385	1,965	18,500	Yearlong	Cows
4414	DIAMOND A	* 7,135	3,560	1,804	47,160	1/1 - 4/30	Cows
4418	GOAT MOUNTAIN	440	440	32	420	Yearlong	Cows
<b>TOTALS:</b>		<b>43,278</b>	<b>26,284</b>	<b>6,083</b>	<b>112,953</b>		

Issuance of the grazing authorizations is in conformance with the Hollister Resource Management Plan (RMP) approved in August 1984 and as further amended for Central California Rangeland Health Standards and Guidelines for Livestock Grazing, approved in April 1998. The issuance of the leases has been determined to be in conformance with the RMP as required by regulation (43 CFR §1610.5-3(a)). All public lands authorized livestock grazing and assigned AUMs of permitted use have been determined to be “suitable” for livestock grazing, as defined in the Hollister RMP.

Below is a Table showing the types of public recreational use which has historically occurred on the public lands within each allotment and the type of public access (i.e. foot or equestrian, 4 wheeled vehicles “4WV”, motorcycles “2WV”).

<b>Allot Number</b>	<b>Allotment Name</b>	<b>Types of Recreational Use</b>	<b>Types of Access</b>
4301	AKERS	hunting, hiking	foot, equestrian
4308	BIRDWELL	hunting, hiking	foot, equestrian
4319	LEWIS FLAT	hunting, hiking	foot, equestrian
4352	WILLOW SPRING	hunting, hiking	foot, equestrian
4359	QUARTER CIRCLE A-1	hunting, hiking	foot, equestrian
4374	JOAQUIN ROCKS	hunting, hiking	foot, equestrian
4379	UPPER LOS GATOS CREEK	hunting, hiking	foot, equestrian, 4WV
4398	ADOBE	hunting, hiking	foot, equestrian
4401	WILLIAMSON	hunting, hiking	foot, equestrian
4409	BAR B	hunting, hiking	foot, equestrian
4410	HERNANDEZ	hunting, hiking	foot, equestrian
4411	ASHURST	hunting, hiking, OHV	foot, equestrian, 4WV, 2WV
4414	DIAMOND A	hunting, hiking	foot, equestrian
4418	GOAT MOUNTAIN	hunting, hiking, OHV	foot, equestrian, 4WV, 2WV

For the following allotments with public vehicular access, 4379 Upper Los Gatos Creek, 4411 Ashurst and 4418 Goat Mountain the following Table lists the proposed designated routes occurring in the allotments.

Allot Number	Allotment Name	Proposed Designated Routes
4379	UPPER LOS GATOS CREEK	Trails 171A, 171B, 219, 221, 220, Roads 016, 017, 018
4411	ASHURST	Trails 125, 194, 195
4418	GOAT MOUNTAIN	Trails 122, 123, 140

For all of the other allotments there are roads and jeep trails which do not have public access. The roads and jeep trails are designated or proposed to be designated “closed”, with only BLM administrative access. Through the grazing lease authorizations, the BLM grazing lessees are granted administrative access to the roads and jeep trails for the purposes of administrating their livestock grazing. Through their grazing lease authorization they are with specific approval, given the authority to do maintenance of the roads and jeep trails. The roads and jeep trails on the public lands in the grazing authorizations, within the boundary of the area addressed within the Clear Creek Management Plan are listed in the Table below (note: these roads and trails either have not yet been assigned numbers or are not listed/displayed within the Clear Creek Management Area Plan).

Allot Number	Allotment Name	Roads Trails Within Allotment Without Public Access
4301	AKERS	none
4308	BIRDWELL	Pine Canyon Road
4319	LEWIS FLAT	unnamed jeep trail
4352	WILLOW SPRING	KCAC Road, Florence Mack Mine Road
4359	QUARTER CIRCLE A-1	Atlas Mine Road, Upper White Creek jeep trail
4374	JOAQUIN ROCKS	Joaquin Ridge Road, Pine Canyon Ridge Road
4379	UPPER LOS GATOS CREEK	none
4398	ADOBE	Can Carlos Bolsa jeep trail
4401	WILLIAMSON	3 unnamed ridge top jeep trails
4409	BAR B	Cane Canyon Ridge Road
4410	HERNANDEZ	Byles Canyon jeep trail, Tucker Gulch jeep trail, Baker canyon jeep trail
4411	ASHURST	Baker Canyon jeep trail
4414	DIAMOND A	Idria - San Carlos Bolsa jeep trail, San Carlos Bolsa jeep trail, Upper Cantua jeep trail
4418	GOAT MOUNTAIN	none

### **3.5 RECREATION RESOURCES**

The Clear Creek Management Area (CCMA) has been an important weekend recreational destination for central California residents for the past 35 years. Clear Creek is among the top five most popular areas cited by California off-highway-vehicle (OHV) users in a 1990 study conducted by the California Department of Parks and Recreation (CDPR, 1990). The CCMA continues to be popular with motorcyclists who use the area for hill climbing, trail riding, and camping. Other common activities include 4-wheel drive off-highway vehicle touring, hobby gem/mineral collecting, hunting, hiking/backpacking, and sightseeing.



Hiking in the CCMA

Visitor use is most prevalent during the winter months (November – April), because winter rainfall keeps the dust levels lower and cooler temperatures. With the onset of deer season in August through mid-September, visitor use increases. Because of the distance to most urban areas in central California, visits to the CCMA require considerable highway driving. Overall, total recreation use drops off about two-thirds during the summer months. The number of OHV visitors (where one visitor may visit for any portion of the day) is approximately 50,188 per year. Over the last three years there has been an average increase in the number of visitors of five percent per year. This gradual increase should continue, but the rugged terrain, extreme climate, and the asbestos hazard may be constraints to broader visitor use.

<b>Number of Visitors per Month and Yearly Total</b>										<b>Nine Year Average</b>
	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	
<b>Nov</b>	4513	3954	5113	5403	4582	4340	4582	4582	4175	4582
<b>Dec</b>	3174	3905	4354	4230	4354	3726	4796	4354	6272	4352
<b>Jan</b>	3616	3754	4092	4402	3698	4285	4368	5230	6155	4400
<b>Feb</b>	4816	5824	4920	5106	2539	4478	4202	4085	4299	4474
<b>Mar</b>	5168	1490	5879	4768	5168	6383	5251	5693	6728	5170
<b>Apr</b>	3988	3836	3926	2684	4678	3560	3857	4775	4568	3986
<b>May</b>	3160	3422	2843	2381	2939	3236	2698	2857	2939	2942
<b>June</b>	2208	2429	2519	1891	4071	3036	1863	2477	2091	2509
<b>July</b>	4789	2608	2753	2063	2877	2877	2408	2229	3284	2877
<b>Aug</b>	2995	3574	2753	3312	3830	3526	2353	4920	3547	3423
<b>Sep</b>	3174	2719	2443	3022	3022	3022	3491	3609	2712	3024
<b>Oct</b>	2477	2815	2443	2684	2657	2657	3098	2429	2657	2657
	<b>44077</b>	<b>40331</b>	<b>44036</b>	<b>41945</b>	<b>44415</b>	<b>45126</b>	<b>42966</b>	<b>47237</b>	<b>49425</b>	<b>44395</b>

Most motorcycle users are from the San Jose/San Francisco metropolitan areas with normal travel time of approximately three hours to get to the CCMA. These users travel very close to the 6,800-acre Hollister Hills State Vehicle Recreation Area (SVRA) en route to Clear Creek. This intensively managed OHV use area is one and one-half hours closer, but the unique challenge of the serpentine soils and the amount of area available for OHV recreation use continue to draw motorcycle riders to Clear Creek.

According to the California State Parks, Taking the High Road issued in 2002, off-highway motor vehicle recreation demand has increased dramatically in the last decade. California has the highest population in the nation (34 million) and the highest number of OHV enthusiasts (3.5 million, or 14.2 percent of all California households). San Benito County has seen a population increase of 45 percent and a 113 percent increase in OHV registrations. Increases over the last decade in OHV registrations by vehicle type statewide are: dirt bikes 30 percent (from 153,304 to 199,142), all-terrain vehicles 96 percent (from 91,984 to 180,273), and dune buggies and sand rails 96 percent (from 17,500 to 34,243). Street licensed 4-wheel drive vehicle registrations have increased 74 percent (from 290,651 to 506,585). During this same period OHV land availability has decreased 48 percent (from 13.5 million to 7.0 million acres). About 100,000 miles of routes and trails are available for OHV use throughout California. Of these 100,000 miles, 10,000 miles (10 percent) represent single-track trails and 16,000 miles (16 percent) represent trails of interest to 4-wheel drive enthusiasts. The remaining 74,000 (74 percent) miles are connector routes for those pursuing a variety of forms of recreation.

**Facilities**

Visitor facilities are limited to Oak Flat Campground, Jade Mill Area, and six staging areas that have trash receptacles and pit toilets. Bulletin boards with general information and regulatory information are present at these areas and at the entrances to the CCMA. Information posted details upcoming events, campfire requirements, asbestos warnings, and user maps showing routes and other geographic points of interest.



Kiosk, restroom, and trash bins at a staging area

### 3.5.1 Motorized Vehicle Access Network

Motorized vehicles used throughout the area include two-wheeled drive vehicles, four-wheeled drive trucks and jeeps, all-terrain vehicles (ATV, quads), and motorcycles (MC). There are more than 420 miles of primitive roads and trails currently available for OHV use. There are 189 miles of routes designated on the user map for the CCMA. These routes are designated as paved, improved/unpaved, four-wheeled drive recommended, jeep trail, ATV/MC trail, and single track trail. Of these 189 miles of routes, 50 miles are single track which are accessible by motorcycle, 17 miles are ATV/MC trails which are accessible by quads and motorcycles, and the remaining 122 miles are jeep trails, four-wheeled drive recommended, improved/unpaved, or paved roads which are accessible by four – wheeled drive, ATV, and motorcycle. Only major routes are accessible by two-wheeled drive vehicles which constitute 28 miles of routes.

Motorcycle and ATV riding are the most prevalent recreation activities in the CCMA with almost all of the use occurring within the 30,000 acre ACEC where asbestos is found and the majority of the use occurs within the lower six miles of Clear Creek Canyon. While motorcycle and ATV riding are the most common recreational activities, four-wheeled drive vehicles participate in a variety of recreational activities. Several large organized OHV events are conducted annually in the CCMA. These include, Molina Ghost Run 4-wheel drive tour sponsored by California 4-Wheel Drive Association, the Quicksilver Enduro sponsored by the Salinas Ramblers Motorcycle Club, and the Wild Boar sponsored by the Timekeepers Motorcycle Club.

A combination of regulatory signs, route number signs, directional signs, and fencing is used to direct visitors along the trails identified on the user map. BLM Park Rangers patrol the CCMA, providing visitor assistance and information, and warning visitors about regulatory violations. A BLM Law Enforcement Ranger conducts patrols in the area, warning, citing, and/or arresting regulatory

violators as appropriate. San Benito County Sheriff's Department provides additional law enforcement patrols.



Motorcycle trail riding

Although the BLM Hollister Field Office has not yet conducted specific visitor surveys concerning motorized travel to the Area or about motorized recreation within the Area, the BLM is able to analyze existing data in the public domain to characterize benefits and the clientele for the Area. In time, BLM will be conducting surveys to collect information on public opinions and values to provide a sharper characterization of the visitor use, value of recreation activities, and the public willingness to pay for recreation services in the Area.

Publicly available data from government agencies can, however, characterize the importance of motorized access and recreation in the Area. To this end, BLM considers the people living within the area roughly equal to a 150-mile radius as the potential client base for recreation visits. The client “visitor shed” is depicted in figure 1. Areas considered include all or parts of 21 California counties extending from Santa Barbara County in the south to San Francisco County in the north, and then east to the divide of the Sierra Nevada from Amador County in the north to Kern County in the south. Some 10,310,000 people reside within the visitor shed. (US Census 2000 data at [www.census.gov/epcd/www/zipstats.html](http://www.census.gov/epcd/www/zipstats.html)). This population comprises about thirty percent of the total population of California.

Fourteen Metropolitan Statistical Areas lie entirely or partly within the visitor shed. As defined by the United States Office of Management and Budget (OMB), an MSA is made up of at least one large city (50,000 population or more), and includes the county or counties in which it is located. Adjacent and other nearby counties meeting certain criteria are also included in the MSA. The MSAs present in the visitor shed are: Bakersfield, Fresno, Merced, Modesto, Oakland, Sacramento, Salinas, San

Francisco, San Jose, San Luis Obispo – Atascadero – Paso Robles, and Santa Barbara – Santa Maria – Lompoc, Santa Cruz – Watsonville, Stockton – Lodi, and Visalia – Tulare Porterville. Ninety-three percent of the population in the visitor shed resides in the MSAs. The population is overwhelmingly urban.

Rural and wildland landscapes are becoming increasingly less common as urbanization expands, especially in the San Francisco Bay Area, Central Coast communities, and in the San Joaquin Valley. The wildland experiences in the Clear Creek Management Area are increasingly valuable as the supply of open space decreases in the visitor shed.

The BLM has not estimated the economic benefits generated from recreation-related expenditures by visitors to the Management Area alone. However, the major portion of the Management Area lies inside San Benito County. In San Benito County, the major travel and recreation opportunities involve destinations to the Mission at San Juan Bautista, the Pinnacles National Monument, and to the two major OHV recreation sites at the Hollister Hills State Vehicle Recreation Area and the Clear Creek Management Area. No information at present is available to describe the share of total visitors at these four major visitor destinations in San Benito County. But, in aggregate, travel and recreation in San Benito County generate some \$76,000,000 in spending in the county, \$21,800,000 in earnings, and 1,220 jobs in the county (directly and indirectly). These amounts rank San Benito in place 47 of 58 counties for revenues generated and place 52 of 58 for the number of jobs created (Dean Runyon Associates 2003). The growth in jobs for the travel and recreation-related sectors since 1992 has been less than 150. Jobs related to travel and recreational tourism account for 5.7 percent of all jobs in San Benito County.

Much of the economic benefit for income and employment, from people's expenditures for motorized recreation, appears closer to the urban homes of visitors to the CCMA, than in the communities near the Management Area. Other factors with respect to economic benefit are long distances to the north and south, separate restaurants, lodging, and gas stations from entry points to the Management Area. Purchases of vehicles for recreation use are prime examples of big-ticket expenditures that occur at considerable distances from the Area.

Motorcycles are popular vehicles for motorized recreation in the CCMA. The US Census Bureau 2001 Zip Code Business Patterns (<http://censtats.census.gov/cbpnaic/cbpnaic.shtml>) provide information by zip code, for the number of businesses and categories of numbers of employees at these businesses. The pertinent North American Industry Classification System (NAICS) category 441221 covers vendors of all-terrain vehicles, mopeds, motorbikes, motorcycles, and motorcycle parts and equipments, both new and used.

Within the visitor shed, motorcycle retail outlets concentrate close to their customers. The Business Patterns Report does not specify the actual numbers of employees in each business but sorts businesses by classes based on ranges of numbers of employees. At a minimum, the visitor shed for the Management Area has 1031 jobs in retail motorcycle businesses. Communities with comparatively high employment in retail motorcycle sales are most likely to have impacts if cumulative changes occur in access to motorized recreation on public lands, including the Management Area. The geographic areas most likely to have economic impacts are those currently with high numbers of employees in retail motorcycle sales. Table 2 lists the top ten zip code areas provide the largest number of jobs related to retail sales of motorcycles.

**Table 2** – Top ranked communities within the visitor use region by zip code, with the greatest employment in retail sales of new and used motorcycles (NAICS 441221) in 2001. Source: US Census Bureau Zip Code Business Patterns 2001

City	Zip Code Area	Minimum Estimate of Number of Employees
Santa Cruz	95062	62
Modesto	95351	45
Visalia	93292	42
San Francisco	94103	42
Bakersfield	93301	32
Redwood City	94063	30
Livermore	94550	26
Hayward	94544	24
San Jose	95112	24
San Francisco	94109	22
Concord	94520	22
Fremont	94538	22
Walnut Creek	94596	22
San Jose	95124	22

The California Department of Motor Vehicle tracks information on motor vehicles with green-sticker registrations by zip code by month. This information helps the BLM to know where significant populations of OHV recreational users live and, in the absence of visitor profile data specifically collected from visitors while they are visiting the Management Area, what the demographic profile of visitors is and how it differs or is similar to the population as a whole. Table 3 shows the top-ten ranked zip code areas within the visitor shed region, with: the highest total green-sticker registrations, the highest frequency of registrations among rural communities (populations between 1,000 and 5,000), among suburban communities (populations less than 25,000), and among urban communities (populations greater than 25,000). These areas represent significant populations with vehicles used in OHV and other motorized recreation.

**Table 3** – Communities with the largest absolute number of green-sticker registrations and with the highest frequency of green-sticker registrations by community size, located within the visitor use region.

Communities with the Highest Number of Registered Green Sticker Vehicles			Rural Communities with the Highest Frequency of Green Sticker Registrations in the Population		
City	Zip Code	Number of Registered Vehicles	City	Zip Code	Per Capita Frequency of OHV vehicles in the population
1. Bakersfield	93312	2457	1. Friant	93626	14.8%
2. Hollister	95023	2318	2. Creston	93432	11.1%
3. Livermore	94550	1822	3. Hickman	95323	10.6%
4. Tulare	93274	1712	4. Prather	93651	10.5%
5. Clovis	93611	1705	5. Lebec	93243	10.3%

Communities with the Highest Number of Registered Green Sticker Vehicles			Rural Communities with the Highest Frequency of Green Sticker Registrations in the Population		
City	Zip Code	Number of Registered Vehicles	City	Zip Code	Per Capita Frequency of OHV vehicles in the population
6. Paso Robles	93446	1542	6. Frazier Park	93225	9.5%
7. Wasco	93230	1540	7. La Grange	95329	8.9%
8. Gilroy	95020	1415	8. Herald	95638	8.6%
9. Bakersfield	93308	1371	9. Linden	95236	8.6%
10. Porterville	93257	1350	10. Santa Margarita	93453	8.0%

Suburban Communities with the Highest Frequency of Green Sticker Registrations in the Population			Urban Communities with the Highest Frequency of Green Sticker Registrations in the Population		
City	Zip Code	Per Capita Frequency of OHV vehicles in the population	City	Zip Code	Per Capita Frequency of OHV vehicles in the population
1. Wilton	95693	7.8%	1. Bakersfield	93312	6.1%
2. San Martin	95046	7.6%	2. Hollister	95023	4.8%
3. Templeton	93465	6.9%	3. Paso Robles	93446	4.3%
4. Denair	95316	6.5%	4. Oakley	94561	3.9%
5. Santa Ynez	93460	6.5%	5. Brentwood	94513	3.9%
6. Acampo	95220	6.3%	6. Atascadero	93422	3.8%
7. Pioneer	95666	6.3%	7. Clovis	93611	3.6%
8. Escalon	95320	6.2%	8. Visalia	93292	3.6%
9. Byron	94514	6.0%	9. Sonora	95370	3.2%
10. Hughson	95326	5.7%	10. Bakersfield	93313	3.1%

From comparisons of the communities with high frequency of green-sticker vehicles with the entire population of the visitor shed, the BLM can develop an initial profile of the economic and social characteristics of OHV recreation users and of similarities and differences with the entire population of the visitor shed. Table 4 displays selected characteristics of communities where OHV ownership and registration are high as contrasted with the entire population of the Management Area visitor shed.

**Table 4** – Comparison of selected demographic characteristics of communities identified in Table 3, with high frequencies of registered green-sticker vehicles. Source: US Census Bureau, Census 2000 data

Community Groups as Defined in Table 2	Population percentage self-identified as white race	Median Age in Years (both sexes)	Average Number of People in Households	Average Number of People in Families	Population Percent of People > 16 years old and employed	Median Number of Rooms in Houses	Per Capita Income 1999
Top 10 Rural Communities	86.9	39.4	2.7	3.6	41.3	5.2	\$20,131
Top 10 Suburban Communities	86.1	38.4	2.3	2.8	43.6	5.7	\$25,334
Top 10 Urban Communities	83.8	34.4	3.0	3.8	44.0	5.6	\$21,294
All Communities in the Visitor Shed	58.5	33.8	2.9	4.3	44.2	4.9	\$25,012
All California	59.5	33.3	2.9	3.4	43.0	4.8	\$22,711

Significant clusters of communities with high percentages of green-sticker vehicle registration occur in the Bakersfield, San Luis Obispo – Atascadero – Paso Robles, eastern Contra Costa County, and Stanislaus County. In communities with relatively high proportions of green-sticker registrations for off-highway vehicles, the populations appear to differ from the total population of California. The proportion of people who identify themselves as white racially is higher than in the population at large. Also, the populations of the rural and suburban communities where OHVs are most common tend to be somewhat older and have smaller families in comparison the total population of the visitor shed.

### **3.5.2 Barrens**

There are approximately 2,800 acres of barren areas scattered throughout the CCMA. The user map identifies seven open play areas which are located on a portion of these barrens. The barrens are used primarily by quads and motorcycles as open play areas with some of more gradual sloped barrens being used for open play areas by 4-wheel drive vehicles. These unique areas provide visitors with challenging hill climbs and more gradual slopes for enjoyment by riders of all skill levels. The majority of the barrens are located adjacent to routes of travel or routes that traverse across the barren complex making them accessible to the various user groups.

### **3.5.3 Non-OHV Recreation Opportunities**

Other recreational opportunities include hobby gem/mineral collecting, hunting, hiking/backpacking, and sightseeing.

Hobby gem and mineral collectors are drawn to the Clear Creek area by the presence of over 100 semi-precious minerals and gemstones. This is one of the most highly mineralized areas in

California. Collectable minerals include jadeite, cinnabar, andradite, tremolite, melanite, topazolite, barkevikite, clinocllore, vesuvianite, artinite, natrolite, neptunite, and benitoite. Some minerals such as benitoite are extremely rare and the CCMA is practically the only place in the world where they can be found.

Highly mineralized areas generally occur along faults and inclusions/intrusions in and around the serpentine body. Hobby gem/mineral collecting (or rockhounding as it is commonly called) accounts for about five percent of the total recreation use in the CCMA.



Benitoite

Several commercial gem collectors also maintain mining claims and work infrequently in the area. The only known commercial deposit of benitoite is found on a patented mining claim (private land) in the CCMA. The area's unique geology also attracts geology students and researchers from local and national universities including Stanford and Harvard.

Hunting activities occur primarily on the outskirts of the ACEC boundary. Hunters require access through the Clear Creek Canyon to the remote edges of the CCMA to the east and south of the ACEC. The primary game animals sought are wild boar and deer. Deer season occurs during the months of August and September with boar season occurring throughout the year.

Hiking/backpacking and sightseeing occurs throughout the year. Visitors are drawn to the area to see the unique ecosystems and experience the rugged terrain present on the CCMA. Sport utility vehicles are used by weekend sightseers to traverse the more commonly used routes. These routes provide views of the unique habitats and geological formations found within the CCMA, and views of the Central Valley and the Sierra Nevada.

### **3.6 CULTURAL RESOURCES**

The Clear Creek Management Area (CCMA) is a unique complex of geology, botany, and archeology creating a special cultural landscape. Situated in the CCMA there are complexes of small prehistoric habitation, processing, and interment sites dating back at least five hundred years, perhaps several thousand. The combination of these sites represents the physical remains of Native Californian seasonal villages or extended family residences. There is also a rich historical record of intensive mercury mining that one time reflected the second largest mercury producing area in the United States.

Set in the Diablo range of the Coast Range mountains, the CCMA rests on the divide of two watersheds: the San Benito - Pajaro Rivers and San Joaquin River systems. A variety of upland game resides in this portion of the Diablo Range, including California mule deer and Columbian black-tailed deer, wild pigs, and valley quail, with the highest densities of quail in the grassy openings within the chaparral and the annual grassland/shrubland areas. The current plant regime is characterized as a mixed Blue Oak-Foothill Pine woodland and chaparral, with serpentine endemic plants (such as leather oak) as well as non-endemic species like foothill pines, Mexican manzanita, Indian Valley bush mallow and California barberry. Chaparral also occurs in quite large areas, which includes manzanita, scrub oak, ceanothus, chia, and chamise. Botanical impacts as a result of European colonization have left their imprint on the native ecosystem. Non-native grasses have replaced much of the existing native bunch grasses. European colonization also introduced cows and feral pigs into the region.

The CCMA is predominantly defined by the New Idria serpentine soil body (e.g., Serpentine ACEC), which is surrounded by a Franciscan sandstone formation. Both geological deposits offered a variety of lithic raw materials for prehistoric use and trade. Mercury, cinnabar, cryptocrystalline cherts, and steatite schists would have been readily available for extraction and processing.

Ethnographically, the area may lie within the Chalon Costanoan/Ohlone region. The Chalon were known to have occupied the area around Chalone Creek - bounded to the west towards the Salinas River (Salinan country) and east to headwaters of the San Benito River in the Diablo Mountains that flanks the San Joaquin Valley (towards Tachi Yokuts country). The northern and southern extent of their occupation is less well defined, bounded by the Mutsun Costanoan to the north and the Salinan Indians to the south.

However, it can also be argued that the region lies in an area where exact Native Californian tribal affiliation is unclear. The classic ethnographic literature ascribes the region to the Tachi band of Yokuts Indians, largely on the basis of hydrographic provenance. In the past, watersheds were typically used in Native Californian ethnographic research, as a defining boundary line for much tribal territorial delineation. More current archeological research in the region has yielded a different interpretation. It is possible that the Chalon band of Costanoan (or Ohlone) Indians may have inhabited the area, based upon material culture identification and mortuary practices observed at CA-Fre-1333. A less investigated hypothesis relies on ethnohistoric data obtained from the baptismal records at Missions of San Antonio de Padua, Mission San Miguel, Mission San Juan Bautista, and Mission Soledad. Based upon general village location information supplied to the padres by the neophytes, the district may belong to the Chene band of the Salinan Indians. Ethnographically the Chene are not recognized as a distinct group, but this may only be a function of limited ethnographic details. The Salinans could only be loosely identified to either a Migueleno dialect (southern Salinan) or an Antoniano dialect (northern Salinan).

With respect to artifacts, the sites appear to be inter-related based upon regional bead and projectile point typologies. Functionally the combination of sites represent a range of domestic subsistence behavior that included plant collection and processing, animal hunting and processing, trade material manufacture, intensive short-term habitation, and interment. The full extent of prehistoric time depth is not fully understood for the CCMA. Based upon observed surface indices in concert with previous excavations and collections, the sites date to approximately 1500-1690 AD. Archeologically, this correlates to Phase 2a of California's Late Period as defined by the Central California Taxonomic System, also referred to as California's Protohistoric period.

There have been two archeological investigations at prehistoric sites conducted in the CCMA. These studies attempted to mitigate the effects of vandalism (at site CA-Fre-1333) and provide invaluable baseline data for the region, as part of a newly drafted management plan (1986) for the CCMA. Current research (2003) involves a Masters-level archeological investigation at site CA-Fre-1331. Information from this project will greatly improve our understanding of the patterns of subsistence, trade, and inter-ethnic socio-cultural affiliation nearly five hundred years ago. Hopefully, tribal affiliation for the region will be clearer as well. This research is also compliant with the CCMA management goals.



Archaeological site in the CCMA

Historically, the region was known as the New Idria Mining district. Discovered in the late 1840s – early 1850s by Mexican prospectors, large portions of the Clear Creek Management Area were mined for mercury to produce quicksilver during the California Gold Rush era. Later in time, the district's mercury was used in medical products, paint, and even munitions for World War I. Other materials such as asbestos, magnesite, nickel, and chromium were also extracted. The rare gem Benitoite (California State Gem) is almost exclusively found in this region and nowhere else in the world (save trace amounts found in Kern County, California, and Japan).

The Aurora mine site CA-SBn-192H (also known as the Morning Star mine) was discovered by Mexican prospectors in 1853 looking for silver, but who instead found mercury. The Aurora was mined throughout its history primarily for mercury, and later for chromium. It was worked

intermittently until 1911, with other concentrated mining efforts occurring between 1915-1917 and 1930-1943. Smaller scale production continued into the mid-1950s. In 1911 a rotary furnace was installed, but due to technical and logistic supply problems the furnace only ran for one day. Several structures that related to the mining industry at Aurora have been destroyed by other miners seeking material to reuse, dismantled by the BLM for safety reasons, or vandalized by visiting users to the CCMA. The Aurora Mine was part of the New Idria mining district, which was the inspiration for Bret Harte's literary work *The Story of a Mine* (1878).

Another example of historic mercury production was the Alpine Mine, once known as the Esmeralda mine. Regular mercury production began here in 1912, with concentrated output generated sporadically from 1912-1914, 1916-1917, 1928, 1932-1936, and finally in 1945-1950's. In 1915, a 20-ton capacity Scott furnace and four brick condensers were installed to process the mercury (in addition to two pipe retorts already being used) but the furnace only operated until 1917.

## **3.7 SPECIAL MANAGEMENT AREAS**

### **3.7.1 Area of Critical Environmental Concern**

In 1984, the BLM designated approximately 30,000 acres of the New Idria Serpentine Formation within the CCMA as the Clear Creek Serpentine Area of Critical Environmental Concern (ACEC). This ACEC is sometimes referred to as the Hazardous Asbestos Area (HAA). Areas of Critical Environmental Concern are areas of concern where special management attention is required 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. This Serpentine ACEC was designated because of the health concerns associated with the naturally occurring asbestos within the serpentine soils and because of the unique vegetation and forest types associated with serpentine soil.

Human induced changes within this geologically unique area, and the presence of distinctive plant species associated with the serpentine formation, established the need for special management attention. 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. Additionally, plant regeneration is slow, and accelerated erosion from human activities (such as mining, road building and maintenance, and recreation) has negatively affected soil and vegetative resources. Minimizing soil erosion and damage to sensitive plant populations is a management priority. The Serpentine ACEC provides visitors with a variety of recreation experiences. However, due to the high concentrations of naturally occurring asbestos, public health concerns persist over the use of this popular recreation area.

### **3.7.2 San Benito Mountain Research Natural Area**

The San Benito Mountain area was designated as an Outstanding Natural Area in the early 1970's, and lies within the larger Clear Creek Serpentine ACEC. In 1996, the BLM designated the San Benito Mountain Natural Area as a Research Natural Area to encourage research and provide protection of the unique conifer forest on and around San Benito Mountain. The ROD (1999) approved expansion of the SBMRNA to 4,082 acres. Vehicle travel is only allowed on the County roads and "ridge route" within the RNA. Cross-country or off-route vehicle travel is not allowed.

An RNA is an area where natural processes are allowed to predominate and which is preserved for the primary purposes of research and education because the land has one or more of the following characteristics: (1) A typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil, or water features; or (5) outstanding or unusual geologic, soil, or water features (43 CFR 8223 - Research Natural Areas). The BLM created the San Benito Mountain Research Natural Area to provide special resource management protection for this unique area with three management goals: 1) to ensure survival of the pine forests in the CCMA; 2) to maintain the vegetation and soil resources in as natural a condition as possible; and 3) to provide opportunities for scientific and academic research in this unique ecosystem.

The San Benito Mountain Forest is the only forest in the world that supports Jeffrey (*Pinus jeffreyi*), Coulter (*P. coulteri*), and foothill (*P. sabiniana*) pines, and incense cedar (*Calocedrus decurrens*) at the same location. The San Benito Mountain population of Jeffrey pine is the only population of this species in the California Coast Range south of northern Lake County (Kuchler 1977, p. 151). The Jeffrey x Coulter pine hybrids around San Benito Mountain are an important natural source of genetic combinations and have been used in the past for genetic research and breeding programs. This forest also contains groves of incense cedars, the only incense cedars in the inner central California Coast Range. The nearest stands of incense cedars found elsewhere, are in the coastal Santa Lucia Mountains 60 miles to the west and in Napa County 175 miles to the north. The rare talus fritillary (*Fritillaria falcata*) occurs at only nine locations in the world and two of those, including the largest population, occur in the understory of the San Benito Mountain Forest. These distinctions represent the function of CCMA forests to conserve the biodiversity represented by the unusual genetic and species assemblages of this Research Natural Area. Research and education conducted within the CCMA includes programs and studies by the University of California Davis, the California Native Plant Society, the Audubon Society and the United States Geological Services.

In 1986, the BLM started fencing the boundaries of the Research Natural Area easily accessible to vehicle trespass (due to unauthorized OHV use). Continued unauthorized OHV use in the Research Natural Area, primarily on the sparsely vegetated or barren hillsides, adversely affects this unique environment and the values for which it was established. The BLM recently completed an additional three miles of fence to protect the RNA and adjacent Upper Clear Creek Canyon. The chapter on Environmental Consequences discusses these impacts.

### **3.7.3 Wilderness Study Area**

The San Benito Wilderness Study Area designation covers 1,500 acres within the existing SBMRNA. On July 29, 1971, the Director of the Bureau of Land Management officially designated the San Benito Mountain Natural Area. It was designated an "Instant" Study Area with the passage of the Federal Land Policy and Management Act of 1976, due to the pre-existing status as a Natural Area. While Congress considers whether to designate a WSA as permanent wilderness, the BLM manages the WSA in a manner as to prevent impairment of the area's suitability for wilderness designation.

The BLM's management policy is to continue resource uses on lands under wilderness review in a manner that maintains the area's suitability for preservation as wilderness. The Interim Management Policy (IMP) for Lands under Wilderness Review (H-8550-1) will remain in effect on all congressionally mandated Wilderness Study Areas until Congress acts on the Secretary's recommendations. There are six practical effects of provisions in The Federal Land Policy and Management Act (FLPMA) of 1976 with respect to "interim management" of lands under wilderness review ( 1976 FLPMA Sec 603. (C)).

- The general standard for interim management is that lands under wilderness review must be managed “in a manner so as not to impair the suitability of such areas for preservation as wilderness” (non-impairment standard). This applies to all uses and activities except those specifically exempted from this standard by FLPMA (such as grandfathered uses).
- Permitted activities in WSAs (except grandfathered and valid existing rights (VERs) are temporary uses that create no new surface disturbance, or involve permanent placement of structures.
- Grazing, mining, and mineral leasing uses that existed on October 21, 1976 continue in the same manner and degree as on that date.
- Lands under wilderness review may not be closed to appropriation under the mining laws in order to preserve their wilderness character.
- Valid existing rights (VERs) must be recognized.
- All lands must be managed to prevent unnecessary or undue degradation (1976 FLPMA SEC 302. (B))

An overriding consideration is that the preservation of wilderness values within a WSA is paramount and should be the primary consideration when evaluating any proposed action or use that may conflict with or be adverse to those wilderness values. In other words, the wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness suitability and other competing uses (DM H-8550-1(1)B).

Most recreational activities are allowed on lands under wilderness review. However, some activities may be prohibited or restricted because they require permanent structures, or depend on cross-country use of motor vehicles. The IMP for Lands under Wilderness Review provides the following guidance regarding recreational activities:

- No new, permanent recreational ways, trails, structures, or installations will be permitted, except those that are the minimum necessary for public health and safety in the use and enjoyment of public lands’ wilderness values and that are necessary to protect wilderness resource values.
- Hobby collection of mineral and vegetation specimens may be allowed for personal, but not commercial, use, as long as the collection activity methods meet the non-impairment criteria.
- Environmental educational and interpretative programs may be conducted so long as no permanent facilities are required and the use does not cause surface disturbance.
- Camping with recreational vehicles may occur on existing ways as long as this use meets the non-impairment criteria. Primitive campsites for recreational use may be established anywhere in the WSA as long as they meet the non-impairment criteria.
- Cross-country skiing may also be allowed. Downhill (alpine) may be permitted only if any support facilities within the WSA satisfy the non-impairment criteria.

- Aerial activities such as ballooning, sailplaning, hang gliding, and parachuting (sky diving), may be allowed as long as they do not require cross-country use of motorized vehicles or mechanical devices to retrieve equipment, except in areas designated as "open" before October 21, 1976.
- Except for emergency situations, vehicle designations in WSAs are to be handled through the land-use planning process. In general, no vehicle designation in a WSA may allow vehicles to travel off existing ways and trails.
- Organized vehicle events will not be allowed unless they can meet the non-impairment criteria, and are contained on existing ways and trails.

Some lands under wilderness review, particularly among the instant study areas, were subject to stricter protection prior to approval of FLPMA than the IMP requires. In these cases, any use will be controlled by the more strict protection of the wilderness resource, regardless of whether that is provided by the IMP or by a pre-FLPMA withdrawal or regulation that is still in effect.

## **3.8 SOCIAL AND ECONOMIC CONDITIONS**

### **3.8.1 Social**

The North Central Coast comprised of Monterey, Santa Cruz, and San Benito Counties, the southern portion of San Francisco Bay, and the San Joaquin Valley are believed to be the most frequent users of the CCMA. The North Central Coast region occupies an area of more than 5,100 square miles with a population of 710,000 people. Monterey County accounts for 57% of the population, followed by 36% in Santa Cruz County, and 7% in San Benito County. The region is forecast to grow to about 921,000 persons by 2020.

The San Francisco Bay Area, located two to three hours from the CCMA, has a population of 6,800,000 and is expected to grow to 7,400,000 by 2010. Based upon 2000 census data, approximately 50% of the population was classified as White, 19% Hispanic, 19% Asian, and 7% Black or African American in the Bay Area. The median household income is \$62,000 with 8% of the population at the poverty level. Primary occupations for the area are management/professional (44%), sales/office (26%), service (13%), and production and transportation (10%). Santa Clara County is the largest county in the San Francisco Bay Area, measuring approximately 1,316 square miles, and ranks as the fifth highest populated county in the state. Santa Clara County and San Jose have a population of 1,680,000 with similar demographics. Santa Clara's economic base is dominated by services and manufacturing industries.

Fresno County, located in the San Joaquin Valley has a population of 800,000 with an ethnic make-up of Hispanic (44%), White (40%), Asian (8%), and Black or African American (5%). The median household income is \$34,700 with the primary occupations being management/professional (30%), sales/office (26%), service (16%), and production and transportation (13%). Leading industry sectors for employment are education, health, and social services; retail trade, agriculture, and manufacturing.

San Benito County covers 1,397 square miles with a population of 53,200 persons. San Benito County is one of the state's fastest growing counties with a 45.1 percent increase over 1990 census data. Hollister, the largest city and county seat, recorded a growth of 79.1 percent over a ten-year

period. San Benito County's total population is expected to increase 63 percent by 2020 to a population of 86,800. San Benito's civilian workforce is 28,000 with an unemployment rate of 8.3 percent. The varied economic base is dominated by the government, retail trade, and manufacturing industries, with the following primary occupations, management/professional (30%), sales/office (25%), service (15%), and production and transportation (13%). The ethnic percentage of the population is Hispanic (48%), White (46%), Asian (2%), and Black or African American (1%). Median household income is \$57,500.

The dominant land use within the North Central Coast region is agriculture with approximately 1,626,000 agricultural acres (393,000 farmed acres). About 81 percent of the farmed agriculture land is in the Salinas Valley with 14 percent in San Benito County. The region has a significant amount of land in open space and recreation, including County and State parks, wilderness, National Forest, and Department of Interior lands, totaling over 500,000 acres. In Monterey and Santa Cruz counties urbanized development occupies about three percent of the land area. Approximately 97 percent of San Benito County is unincorporated land, with 90 percent being used as farmland, rangelands, forest, and public lands.

### **3.8.2 Economic**

California encompasses a number of distinct economies and labor markets. According to 2000 Census data, California had the largest population growth of all fifty states. California's labor force echoed a similar growth trend, bringing the total labor force to over 17 million persons. Current industry projections indicate total non-farm employment will increase by an estimated 22 percent, with the majority of growth in the services, trade, and government industries.

Major industry components of the North Central Coast region are tourism, agriculture and related food processing, manufacturing, commercial fishing, quarrying, and power and oil production. The gross agricultural crop value for 1999 was \$2.5 billion in Monterey County, \$180 million in San Benito, and \$256 million in Santa Cruz.

Historically, San Benito is a largely agricultural county, possessing a varying landscape of vineyards, crop land, fruit and nut orchards, and grazing pastures for cattle and sheep. The agricultural industry supports 14.1 percent of industry employment and occupies over half of the county's land area. Government employment is the largest industry in the county (18%), and has been growing steadily over the past five years. Non-farm industry projections estimate government employment will increase by 420 jobs by 2006. Retail trade provides 17 percent of industry employment, with wholesale trade providing 8.4 percent. According to industry projections, the counties trade industry is expected to grow by 31 percent or 1160 jobs by 2006. An equal number of gains is projected for both wholesale and retail trade. With 16 percent of the total employment, manufacturing is the third largest industry in San Benito, and experienced moderate growth in 2001 (up 1.6%). Manufacturing is expected to grow by 660 jobs by 2006, with the durable goods component estimated to gain the most. San Benito's labor market future presents new opportunities and challenges to the region. In addition to industry growth, out-of-county employment is a significant factor in the local economy as many residents commute to Santa Cruz, Monterey and Santa Clara counties. Residential expansion, development of transportation systems, and proximity to the Silicon Valley, continue to encourage economic development and support job growth. Job growth creates opportunity and is considered to be one measure of economic health. San Benito County has recorded consistent job growth since 1997.

There are nine counties which significantly contribute to the economy of the San Francisco Bay Area; Alameda, Contra Costa, San Mateo, Marin, Napa, San Francisco, Solano, Santa Clara, and Sonoma. Santa Clara County borders Santa Cruz and San Benito counties to the south. The civilian labor force in Santa Clara County is just over 1 million. Services are the largest industry in the county, accounting for 35 percent of total employment. Projections forecast that services in the county will increase by 35 percent from 1999-2006. The business services component is expected to account for the largest share of this growth. Another major industry expected to increase employment in Santa Clara's future is manufacturing. Currently accounting for almost 25 percent of total employment, industry projections forecast an increase of 14,300 jobs from 1999-2006, primarily in the durable goods sector. Santa Clara is part of the Silicon Valley with dense concentrations of electronics and computer companies. After several years of strong employment growth, in the last two years there has been an increase in the civilian workforce at a time of decline in this industry sector. These factors have resulted in a substantial increase in unemployment; however industry projections forecast growth in all major industries through 2006.

OHV recreation use contributes more than \$3 billion statewide to the California economy, including generating 1.6 billion in personal income and 43,000 jobs. OHV recreation users spend considerable sums purchasing the specialized vehicles and support equipment needed to participate in this recreation activity. It is estimated that Californians spend \$1.2 billion annually to purchase off-road-vehicles. A portion of these expenditures contributes to the regional economy in the form of purchases for off-highway vehicles; parts, repairs, accessories, and equipment; fuel; and groceries and restaurants. No studies have been conducted to determine local expenditures by Clear Creek recreation users. Studies have been conducted by the State Off-Highway Vehicle Commission and California State Parks to determine expenditures by visitors to OHV recreation areas. These studies indicated that the average OHV recreation user expended about \$50 per visitor day. Applying these figures to Clear Creek users would indicate that off-road-vehicle recreation use in the area could contribute as much as \$2.5 million annually to the regional economy. With 3.5 million OHV recreation users statewide, per capita spending averages approximately \$1,000 per year. Other recreation use of the CCMA also contributes to the local economy, through expenditures for gas, food, and miscellaneous supplies.

### **3.8.3 Environmental Justice**

Executive Order 129898, requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. The planning area is comprised of a diverse racial and ethnic make-up. San Benito County is 46 percent non-Hispanic White and 48 percent Hispanic, with small percentages of other minorities. Fresno County is 40 percent non-Hispanic White, 44 percent Hispanic, 8 percent Asian, and 5 percent Black or African American. The San Francisco Bay Area's racial-ethnic group includes 50 percent non-Hispanic White, 19 percent Hispanic/19percent Asian, and 7 percent Black or African American. Median household income ranges from \$35,000 in Fresno County to \$57,000 and \$62,000 respectively for San Benito County and the San Francisco Bay Area. Individuals living below the poverty level range from 8.6 percent of the population in the San Francisco Bay Area, to 10 percent in San Benito County, and 23 percent in Fresno County.

## Chapter 4 – Environmental Consequences

4.1	Introduction.....	4-1
4.2	Air Quality.....	4-1
4.3	Watershed Resources.....	4-5
	4.3.1 Water Quality.....	4-5
	4.3.2 Soil Loss and Erosion.....	4-8
4.4	Human Health.....	4-12
4.5	Biological Resources.....	4-15
	4.5.1 Affected Vegetation Communities.....	4-15
	4.5.2 Affected Special Animal Species.....	4-34
	4.5.3 Invasive Weeds.....	4-36
4.6	Recreation Resources.....	4-37
	4.6.1 Motorized Vehicle Access Network.....	4-38
	4.6.2 Barrens.....	4-42
	4.6.3 Non-OHV Recreation Opportunities.....	4-44
4.7	Cultural Resources.....	4-45
4.8	Special Management Areas.....	4-47
	4.8.1 Serpentine Area of Critical Environmental Concern.....	4-47
	4.8.2 San Benito Mountain Research Natural Area.....	4-47
	4.8.3 San Benito Wilderness Study Area.....	4-51
4.9	Social and Economic Conditions.....	4-51
	4.9.1 Socio-Economic.....	4-51
	4.9.2 Environmental Justice.....	4-55
4.10	Adaptive Management.....	4-56
	4.10.1 Adaptive Management Implementation Strategy.....	4-56

## **CHAPTER FOUR ENVIRONMENTAL CONSEQUENCES**

### **4.1 INTRODUCTION**

This chapter provides a description of the environmental impacts of each of the four alternatives described in Chapter Two, and focuses on the anticipated physical, biological and social consequences of implementing the land use decisions described under each alternative. The following resources are analyzed for each of the alternatives:

- Air Quality
- Watershed Resources
- Human Health
- Biological Resources
- Recreation Resources
- Cultural Resources
- Special Management Areas
- Social Economic Conditions
- Environmental Justice

An analysis of the environmental impacts of each alternative is discussed under each of the individual resource element headings. The actions proposed under the alternatives did not appear to have significant impacts on mineral, visual, prime farmlands, wilderness, wild and scenic rivers, wildlife (except for sensitive plants and animals), rangeland management, or Native American relations, and therefore were dropped from further analysis and discussion.

The impact analysis of the various alternatives is based on an average of 50,000 visitors annually. Based on population trends and OHV recreation demand, it is expected that moderate increases in visitation would occur at the CCMA, though significant increases may be constrained relative to the asbestos hazard, remote location, and lack of facilities.

### **4.2 AIR QUALITY**

Impacts would be in the form of gaseous and particulate matter that is released in the air as a result of the activities being analyzed. All of the pollutants subject to analysis are addressed in Federal, State, and local laws, regulations, and rules. Motorized vehicles are the primary source of emissions associated with this project. Motorized vehicle use of routes of travel and barrens, directly emits air pollutants from the vehicle exhaust, as well as from the particulate matter produced by driving on dirt

surfaces. The principal pollutants of concern are PM<sub>10</sub> and airborne asbestos resulting from motorized OHV use on unpaved surfaces. Soil disturbance activities, such as motorized vehicle travel, can contribute substantial sources of fugitive dust depending on the level of activity, the specific activity being conducted, and the type of soil. On-site emissions are proportional to the length of activity and season (wet/dry conditions) of use. Road maintenance, grading, and construction activities are also a potential source of PM<sub>10</sub> and asbestos emissions, however the BLM is required to conform to the Monterey Bay Unified Air Pollution Control District (MBUAPCD) ATCM for airborne asbestos by implementing Best Management Practices and dust control measures to prevent the generation of visible emissions.

This analysis will be primarily limited by the need to consider changes in emissions that would occur as a result of the various alternatives. The activities associated with this Designation project that would have an impact on air quality include OHV activities, vehicle route and area designations, and restoration of closed routes. Changes in these activities would result in changes to soil disturbance rates and corresponding changes in PM<sub>10</sub> emissions. The effects of asbestos emissions, is covered in section 4.3 Human Health. Both ozone and PM<sub>10</sub> emissions are important considerations because the project area is classified as a non-attainment area for these pollutants.

State Implementation Plans (SIP) are prepared for Federal non-attainment and maintenance areas. These SIPs are designed to result in compliance with the National Ambient Air Quality Standards, and are implemented through a series of rules. Air quality is highly regulated by a number of Federal, State, and regional regulations which apply to many of the activities considered in the alternatives. It is assumed that all activities must be conducted in compliance with the applicable rules and regulations, and attainment plans for ozone and PM<sub>10</sub> for the North Central Coast and the San Joaquin Valley Air Basins, and that emissions generated as a result of the alternatives would not be regionally significant. Based upon previous computer modeling done in the 1990's by MBUAPCD, the BLM was in conformity with the air standards for non-attainment areas for the two air basins as analyzed in the 1995 CCMA Plan Amendment and DEIS. BLM's National Science and Technology Center recently analyzed PM<sub>10</sub> and PM<sub>2.5</sub> emissions related to OHV use. This analysis took into account miles traveled, soil type and silt content, loading, and moisture, among other factors for each alternative, and is included in Appendix G. The emissions estimates are similar under all action alternatives due to assumptions that visitor use and miles traveled would remain fairly constant regardless of the alternative.

### **Alternative A: Proposed Action**

This alternative would allow OHV use on 218 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, the air quality should improve marginally under this alternative with potential reductions in emissions of particulate matter and corresponding declines in PM-10 concentrations. This would be due to restrictions and reductions of activities and disturbed areas that have a potential to emit pollutants, and stricter emission standards for vehicles and motorcycles. There will be fewer roads, trails, and barren areas designated as open compared to current conditions. Overall, there will be a reduction of approximately 48 percent of the miles of unpaved routes available for use, and an 84 percent reduction in acres of barren play areas. In addition, the designation of routes and areas and the enforcement of these designations should result in less off route travel and route proliferation. Off route travel creates new roads, which increases the particulate matter emissions due to vehicle use and wind blown emissions. This alternative also includes the mitigation requirement to restore closed routes to a natural landscape. This will result in fewer emissions due to the inability to easily use closed roads and in a reduction in emissions due to wind. Restrictions on use during high dust levels and dust suppression with the use of water trucks

on main routes will also contribute to reducing the level of particulate matter emissions. Compliance with the ATCM for airborne asbestos, by implementing Best Management Practices and dust control measures related to road maintenance will also contribute to a reduction in airborne emissions for these operations. Under this alternative, all barren play areas within the San Joaquin Valley Air Basin portion of the CCMA will be closed, and would contribute to a reduction in particulate matter emissions from these lands for the air basin. Environmental impacts related to ozone precursor emissions would likely remain unchanged from present conditions.

### **Proposed Mitigation Measures**

- Special Recreation Permit OHV events and organized activities authorized by BLM would only be allowed when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL). Events would only be allowed from 1 November through 15 April.
- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme dusty conditions. These restrictions would include limiting vehicle access to maintained routes, and, or to the type of vehicle. If the PEL is reached in any given week, signs would be posted warning the public of high dust levels and exposure to asbestos. If the PEL is reached in two consecutive weeks, vehicle travel would be restricted to routes R001 – R019. These restrictions would remain in force until readings were recorded below the PEL.
- Construction and use of a public vehicle wash facility to reduce transport of asbestos dust and indirect impacts related to off-site contamination and secondary exposure.
- Augment existing public asbestos hazard information program through improved signing, handouts, advisories, monitoring, public contact, and education programs. Any new risk assessments completed by EPA would be incorporated into the educational materials.
- Designated Closed routes would be selected and prioritized for restoration and reclamation, to allow return to natural state to reduce vehicle and wind generated emissions.
- BLM will comply with all provisions of the Monterey Bay Unified Air Pollution Control District's ATCM regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.
- Dust suppression with the use of water trucks on main routes during high use periods in dry dusty conditions.

### **Alternative B: Enhanced Recreation**

This alternative would allow OHV use on 239 miles of unpaved roads and trails and 813 acres of barren play areas. Compared to existing conditions, the air quality should improve marginally under this alternative with reductions in emissions of particulate matter and corresponding declines in PM-10 concentrations. Environmental impacts would be as described for Alternative A, except as specifically noted. The primary difference in impacts from the other action alternatives would be the designation of 347 additional acres of barren play areas available for OHV use, resulting in a smaller decrease in particulate matter and asbestos emissions from existing conditions. This alternative would also designate 40 acres of barrens as open in the San Joaquin Valley Air Basin, compared to 0 acres under other action alternatives, resulting in a marginal increase in particulate matter emissions for that basin relative to the other action alternatives.

**Proposed Mitigation Measures – Same as Alternative A**

**Alternative C: Enhanced Resource Protection**

This alternative would allow OHV use on 199 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, the air quality should improve moderately under this alternative with reductions in emissions of particulate matter and corresponding declines in PM-10 concentrations. Environmental impacts would be as described for Alternative A, except as specifically noted. Additional reductions in particulate matter emissions would result from vehicle restrictions during the dry season from June 1 – Sept. 1. Though vehicle use is light during the dry season, this period accounts for nearly half of the annual emissions inventory for particulate matter. Restricting vehicle travel during the dry season to a smaller subset of main (improved) routes which have better road surfaces should result in reduced particulate emissions. Restricting vehicle access to a smaller network of main routes would likely result in some level of reduced visitation and corresponding vehicle miles traveled, which are key components in the emission inventory. Additional opportunities for restoration under this alternative could also contribute to reduced particulate matter emissions from wind generated sources over time.

**Proposed Mitigation Measures – Same as Alternative A, except as noted below.**

- From June 1 – September 1 all vehicle use would be restricted to routes R001 – R019 except for administrative use in order to reduce airborne asbestos emissions and public exposure.

**Alternative D: No Action**

This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2800 acres of barren play areas. Direct impacts to the air quality and human health would result primarily from unrestricted vehicle use in the area, resulting in no change in current air quality conditions or potential for reduction in particulate matter and asbestos emissions. Particulate matter emissions would continue to contribute to air quality impacts for the San Joaquin Valley. All mine areas would continue to be closed reducing potential exposure of recreation users to hazardous contaminants.

**Proposed Mitigation Measures**

- Special Recreation Permit OHV events and organized activities authorized by BLM would only be allowed when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL).
- Augment existing public asbestos hazard information program through improved signing, handouts, advisories, monitoring, public contact, and education programs. Any new risk assessments completed by EPA would be incorporated into the educational materials.
- BLM will comply with all provisions of the Monterey Bay Unified Air Pollution Control District's ATCM regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.

## 4.3 WATERSHED RESOURCES

### 4.3.1 Water Quality

#### Alternative A: Proposed Action

This alternative would allow OHV use on 218 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, water quality should exhibit a gradual improving trend over a number of years. Impacts related to OHV use of the barrens would be limited to the Clear Creek watershed. By eliminating unregulated use, eliminating vehicle access to all remaining abandoned mines, continuing completion of abandoned mine remediation projects, and by completing significant road repairs and improvements, the BLM would minimize the potential for additional human-caused impacts to the subject waterways. Reducing the number of miles of unpaved roads by 45 percent, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos. The extent of the contribution of heavy metals and asbestos into the Hernandez Reservoir remains an issue, and some continued natural contribution of mercury and asbestos may be unavoidable. Recent water sampling data indicates a possible overall slight downward trend in mercury concentrations in Clear Creek. As additional data becomes available, this information will be valuable in monitoring the implementation of management actions, to determine whether restricting use in mine areas and reducing the miles of routes available for vehicle use, is having the desired effect of reducing contaminated sediment delivery downstream. The Aurora Mine site area would be completely closed between the Aurora grade and SBMRNA reducing soil disturbance and the potential for off-site transport of contaminants.

This alternative would reduce the miles of available routes in the Larious and San Carlos watershed where the highest levels of background concentrations of hazardous metals are present, thereby reducing the potential for human exposure and contaminated sediment delivery. Additional routes accessing the following mine areas (Chromium, Mercury, Asbestos) would be closed: Larious watershed – Larious, Sampson, Spanish, and Wonder Mines; San Carlos watershed – San Carlos and Molina Mine; Cantua watershed – Del Mexico, Anita, Sec. 28 asbestos, and Coalinga asbestos Mines; San Benito watershed – Big Ridge Mine; White Creek watershed – Big Ridge, Tromby, Archer, Byles, and Butler Mines. Any motorized OHV use on highly erosive areas such as barren slopes and on unpaved roads and trails, would disturb soils containing hazardous metals, and increase erosion and transport of sediment above natural background levels. Closure of routes accessing these mines and a corresponding reduction in soil disturbance from OHV's at these areas, would contribute to improvements in water quality by reducing the potential for contaminated sediment delivery.

In general, designated beneficial water uses identified for streams associated with the CCMA would be enhanced through a reduction in miles of routes and acres of barrens available for OHV use, reductions in stream crossings, and implementation of Best Management Practices to minimize watershed impacts. This alternative includes 5.04 miles of routes within riparian areas<sup>1</sup>, which is a 59 per cent reduction from existing conditions. The 152 stream crossings in this alternative represent a 53 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery. BLM and the USGS will monitor the volume of sediment measured in tons, on a daily and monthly

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

basis. This information will assist in evaluating the effectiveness of route designation & barren area closures, along with other watershed restoration projects. Historical water quality data for Clear Creek is in Appendix H.

### **Proposed Mitigation Measures**

- All remaining mine areas would be closed to OHV use through route closure or construction of fencing and physical barriers.
- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions and during periods of extreme dusty conditions.
- Designated Closed routes would be selected and prioritized for restoration and reclamation.
- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges, and are contained in Appendix D. These site treatments are incorporated into BLM's annual corrective route maintenance plan.
- Implement barren area protection plan to minimize off-site sediment transport through repair of erosion scars, construction of drainage improvements, sediment control and trapping treatments, and re-vegetation of vegetative buffers. Designated Closed barrens would be selected and prioritized for restoration and reclamation employing these same techniques.
- Construct fence and barriers to preclude access to riparian areas and closed barrens to prevent vehicle disturbance and off-site transport of metals and sediments.

### **Alternative B: Enhanced Recreation**

This alternative would allow OHV use on 245 miles of unpaved roads and trails and 813 acres of barren play areas. Compared to existing conditions, water quality should exhibit a gradual improving trend over a number of years. By eliminating unregulated use, eliminating vehicle access to all remaining abandoned mines, continuing completion of abandoned mine remediation projects, and by completing significant road repairs and improvements, the BLM would minimize the potential for additional human-caused impacts to the subject waterways. Environmental impacts would be as described for Alternative A, except as specifically noted. Reducing the number of miles of unpaved roads by 38 percent, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos.

The primary difference in impacts from the other action alternatives would be the designation of 347 additional acres of barren play areas available for OHV use, resulting in an average increase of 1735

tons per year of sediment yield to CCMA watersheds. These impacts relating to OHV use of the barrens would contribute to the delivery of sediments containing asbestos affecting the following streams: Sawmill Creek, San Benito River, Cantua Creek, Clear Creek, and the East Fork of Larios Creek. This alternative includes 5.13 miles of routes within riparian areas<sup>1</sup>, which is a 58 per cent reduction from existing conditions. The 159 stream crossings in this alternative represent a 51 per cent reduction from the existing route inventory. This alternative would allow a greater number of miles of routes available in the San Carlos watershed where the highest levels of background concentrations of hazardous metals are present, and also additional mileage in the Cantua watershed. The San Carlos and Molina Mines would still be accessible to motorized vehicles and would have to be corridor fenced in these areas. Sediment yield is discussed in more detail in the following section.

**Proposed Mitigation Measures** – Same as Alternative A.

**Alternative C: Enhanced Resource Protection**

This alternative would allow OHV use on 199 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, water quality should exhibit a gradual improving trend over a number of years. Impacts related to OHV use of the barrens would be limited to the Clear Creek watershed. By eliminating unregulated use, eliminating vehicle access to all remaining abandoned mines, continuing completion of abandoned mine remediation projects, and by completing significant road repairs and improvements, the BLM would minimize the potential for additional human-caused impacts to the subject waterways.

Environmental impacts would be as described for Alternative A, except as specifically noted. Reducing the number of miles of unpaved roads by 49 percent, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos. This alternative includes 4.91 miles of routes within riparian areas, which is a 60 per cent reduction from existing conditions. The 144 stream crossings in this alternative represent a 56 per cent reduction from the existing route inventory. The primary difference in impacts from the other action alternatives would be further vehicle restrictions in the San Carlos, Cantua, and Arroyo Leona watersheds, resulting in minor improvements to water quality.

**Proposed Mitigation Measures** – Same as Alternative A.

**Alternative D: No Action**

This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2800 acres of barren play areas. Direct impacts to the water quality and human health would result primarily from unrestricted vehicle use in the area, resulting in no change in current water quality conditions or potential for reduction in off-site transport of hazardous contaminants. This alternative includes 12.2 miles of routes within riparian areas and 326 stream crossings.

Routes accessing the following mine areas (Chromium, Mercury, Asbestos) would not be closed: Larios watershed – Larios, Sampson, Spanish, and Wonder Mines; San Carlos watershed – San Carlos and Molina Mine; Cantua watershed – Del Mexico, Anita, Sec. 28 asbestos, and Coalinga asbestos Mines; San Benito watershed – Big Ridge Mine; White Creek watershed – Big Ridge,

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

Tromby, Archer, Byles, and Butler Mines. Public recreation access to these closed mine areas would continue to provide the potential for human exposure and contaminated sediment delivery of hazardous metals to waterways. This would continue to contribute to impairment of Clean Water Act Section 303 (d) Water Quality Limited Segments for the following streams; Clear Creek (mercury), San Benito River (fecal coliform and sedimentation), and Hernandez Reservoir (mercury). The BLM's ability to meet the requirements of the recent California Regional Water Quality Control Board resolution related to TMDL for Mercury in Clear Creek and Hernandez Reservoir could be jeopardized should OHV use continue on the full inventory of routes and barrens.

Water quality impacts related to designated beneficial uses identified for streams associated with the CCMA would likely improve only minimally, primarily due to completion of existing mine rehabilitation projects and current corrective route maintenance. Unregulated motorized OHV use on highly erosive areas such as barren slopes and on unpaved roads and trails, would continue to disturb soils containing hazardous metals, and result in erosion and transport of these sediments. Sediment yields containing asbestos from the barrens would be 287 – 500 per cent above levels in the action alternatives and would continue to impact water quality.

### **Proposed Mitigation Measures**

- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions and during periods of extreme dusty conditions.
- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges.

### **4.3.2 Soil Loss and Erosion**

When soil is disturbed by human caused activities, such as OHV recreation use, it is more susceptible to erosion. Erosion increases the sediment available for transport by surface waters. Intense OHV use in steep areas and barren play areas (hillclimbs), yields significant increases in erosion, sediment yield to streams, and mechanical displacement of soils. For all alternatives, continued motorized OHV use at any level, use on highly erosive areas such as barren slopes and on unpaved roads and trails, would disturb soils, and increase erosion and transport of sediment above natural background levels. This analysis will be primarily limited by the need to consider changes in erosion and sediment delivery that would occur as a result of the various alternatives. The activities associated with this Designation project that would have an impact on soil loss and erosion, include OHV activities, vehicle route and area designations, and restoration of closed routes. Changes in these activities would result in changes to soil disturbance rates and corresponding changes in sediment yields to CCMA watersheds, relative to existing conditions. The sediment yield at the mouth of Clear Creek from undisturbed soil conditions is estimated to be approximately 31,000 tons/year or approximately 3 tons/acre per year.

Table 4-1. Sediment Yield from Trails and Barrens

	ALTERNATIVE			
	A. Proposed Action	B. Enhanced Recreation Opportunities	C. Enhanced Environmental Protection	D. No Action
<b>Route Designation (miles)</b>				
Open	209	230	198	398
Limited	9	15	5	0
<b>Total Miles – Recreation Use</b>	<b>218</b>	<b>245</b>	<b>203</b>	<b>398</b>
Limited Administrative Use	28	25	27	0
Paved	Na	Na	Na	Na
<b>Trail Types</b>				
<b>Sediment Yield – Tons per year from roads</b>				
Improved	4656	4656	4656	4887
4-wheel Drive	2272	2272	2272	2618
Jeep	4072	4479	3530	5430
ATV	1800	2033	1629	3258
Single Track	3880	4559	3636	8776
<b>Sub-Total Tons per Year (sediment)</b>	<b>16,680</b>	<b>17,999</b>	<b>15,723</b>	<b>24,969</b>
<b>Barrens</b>				
<b>Sediment Yield – Tons per year from barrens</b>				
Open Barren	<b>2330</b>	<b>4065</b>	<b>2330</b>	<b>14,000</b>
<b>Total Disturbed Soils</b>				
<b>Sediment Yield – Tons per year from disturbed soils</b>				
Total	<b>19,010</b>	<b>22,064</b>	<b>18,053</b>	<b>38,969</b>

**Alternative A: Proposed Action**

This alternative would allow OHV use on 218 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, this alternative would result in a reduction in erosion and sediment yield to streams within the CCMA and planning area. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, and reducing soil disturbing activities by reducing the number of miles of unpaved roads by 45 percent and reducing the acres of barren play areas by 84 percent. A key component of the long term reduction in sediment yields is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Over 150 miles of roads and trails would be closed and restored under this alternative over a 5 year period. Route and barren closures in high erosion sub-watersheds, including Upper Clear Creek Canyon, South Fork of Clear Creek, and Larious Canyon would contribute to reductions in sediment delivery in these sensitive areas. A portion of R008 contributing significant amounts of sediment to the sub-watershed, riparian areas, and sensitive habitat would be closed. In addition, the designation of routes and areas and the enforcement of these designations, should result in less off route travel and route proliferation. Limiting camping to within 40 feet of the centerline of designated open routes, could contribute to minor reductions in soil disturbing activities. Wet season closures would also contribute to reducing erosion.

Under this alternative, only the Clear Creek watershed would have designated barren play areas. In the other watersheds, all barrens would be closed to OHV use. Barrens within the three Clear Creek

sub-watersheds with the highest erosion would be closed, contributing to a reduction in sediment yield. Concentrating OHV use on the designated open barrens in the Clear Creek watershed may diminish some of the expected reduction in erosion; however, barrens selected in this alternative typically have high hydrographic positions, natural vegetation buffers, and sediment trapping capabilities. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, with a corresponding reduction in sediment yield of 1750 tons per year to the Clear Creek watershed. The remaining watersheds would see a reduction of approximately 11,670 tons per year over existing conditions.

The impacts of OHV recreation use on approximately 466 acres of barrens and on approximately 218 miles of unpaved vehicle roads and trails would continue to contribute to erosion and sediment yields over existing natural conditions. The erosion and sediment yield associated with roads, would contribute approximately 16,680 tons per year, affecting watersheds within the CCMA. This is a reduction of 33 percent compared to existing conditions. The erosion associated with barren play areas, would contribute approximately 2,330 tons of sediment per year affecting the Clear Creek watershed only. Overall roads and barren play areas would contribute approximately 19,010 tons of sediment per year to streams within the CCMA, above the natural background sediment delivery from undisturbed soils. However, this is a reduction of approximately 19,959 tons per year for watersheds within the CCMA, compared to existing conditions. The 152 stream crossings in this alternative represent a 53 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery. Based upon watershed erosion estimates, this alternative is expected to decrease erosion and sedimentation by approximately 51 per cent from the existing baseline conditions.

### **Proposed Mitigation Measures**

- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions.
- Designated Closed routes would be selected and prioritized for restoration and reclamation.
- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges, and are contained in Appendix D. These site treatments are incorporated into BLM's annual corrective route maintenance plan.
- Implement barren area protection plan to minimize off-site sediment transport through repair of erosion scars, construction of drainage improvements, sediment control and trapping treatments, and re-vegetation of vegetative buffers. Designated Closed barrens would be selected and prioritized for restoration and reclamation employing these same techniques.

- Construct fence and barriers to preclude access to riparian areas and closed barrens to prevent vehicle disturbance and off-site transport of sediments.

### **Alternative B: Enhanced Recreation**

This alternative would allow OHV use on 245 miles of unpaved roads and trails and 813 acres of barren play areas. Compared to existing conditions, this alternative would result in a reduction in erosion and sediment yield to streams within the CCMA and planning area. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, and reducing soil disturbing activities by reducing the number of miles of unpaved roads by 38 percent and reducing the acres of barren play areas by 71 percent.

Environmental impacts would be as described for Alternative A, except as specifically noted. The primary difference in impacts would be the designation of 347 additional acres of barren play areas available for OHV use, resulting in an average increase of 1735 tons per year of sediment yield to the Larious, Cantua, and San Benito watersheds, compared to the other action alternatives. The erosion and sediment yield associated with roads, would contribute approximately 17,999 tons per year to watersheds within the CCMA. This is a reduction of 28 percent compared to existing conditions. The erosion associated with barren play areas, would contribute approximately 4065 tons of sediment per year affecting four CCMA watersheds. Overall roads and barren play areas would contribute approximately 22,064 tons of sediment per year to streams within the CCMA, above the natural background sediment delivery from undisturbed soils. However, this is a reduction of approximately 16,905 tons per year for watersheds within the CCMA, compared to existing conditions. The 159 stream crossings in this alternative represent a 51 per cent reduction from the existing route inventory. Based upon watershed erosion estimates, this alternative is expected to decrease erosion and sedimentation by approximately 43 percent from the existing baseline conditions.

### **Proposed Mitigation Measures – Same as Alternative A.**

- Additional barren area erosion and sediment control measures would be implemented to address impacts from sediment yields for the 347 acres of additional barrens.

### **Alternative C: Enhanced Resource Protection**

This alternative would allow OHV use on 199 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, water quality should exhibit a gradual improving trend over a number of years. By eliminating unregulated use, eliminating vehicle access to all remaining abandoned mines, continuing completion of abandoned mine remediation projects, and by completing significant road repairs and improvements, the BLM would minimize the potential for additional human-caused impacts to the subject waterways.

Environmental impacts would be as described for Alternative A, except as specifically noted. There would be further vehicle restrictions in the San Carlos, Cantua, Sawmill Creek, and Arroyo Leona watersheds, and the Condon Peak area, resulting in reduced sediment yields to those watersheds. Route and area designations would reduce the number of miles of unpaved roads by 49 percent and the acres of barren play areas by 84 percent. The impacts of OHV recreation use on approximately 466 acres of barrens and on approximately 203 miles of unpaved vehicle roads and trails would continue to contribute to erosion and sediment yields over existing natural conditions. The erosion and sediment yield associated with roads, would contribute approximately 15,723 tons per year,

affecting watersheds within the CCMA. This is a reduction of 37 percent compared to existing conditions. The erosion associated with barren play areas, would contribute approximately 2,330 tons of sediment per year affecting the Clear Creek watershed only. Overall roads and barren play areas would contribute approximately 18,053 tons of sediment per year to streams within the CCMA, above the natural background sediment delivery from undisturbed soils. However, this is a reduction of approximately 20,916 tons per year for watersheds within the CCMA, compared to existing conditions. The 144 stream crossings in this alternative represent a 56 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery. Based upon watershed erosion estimates, this alternative is expected to decrease erosion and sedimentation by approximately 54 per cent from the existing baseline conditions.

**Proposed Mitigation Measures** – Same as Alternative A.

#### **Alternative D: No Action**

This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2,800 acres of barren play areas. Direct impacts to soil loss and sediment delivery would result primarily from unrestricted vehicle use in the area, resulting in no change in current sediment yield conditions or potential for reductions in erosion and off-site transport of sediment. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds, above yields from natural background levels. This alternative includes 12.2 miles of routes within riparian areas and 326 stream crossings. The 2800 acres of barrens would contribute 14,000 tons of sediment to the CCMA annually. The route network would contribute 24,969 tons of sediment affecting CCMA watershed resources. High erosion sub-watersheds would continue to contribute to resource impacts, particularly in the Clear Creek and Larios watersheds.

#### **Proposed Mitigation Measures**

- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions.
- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges.

## **4.4 HUMAN HEALTH**

Under all alternatives, management of the CCMA would continue to accommodate 50,000 visitor use days per year, and users would continue to have an increased risk of contracting asbestos-related diseases based upon their frequency of use. For the average Clear Creek OHV user (primarily

motorcycle user) this increased risk has been estimated to affect five persons out of 100,000 visitors. Direct impacts to air quality and human health would result primarily from continued vehicle use in the area, causing asbestos dust and particulate matter generation, and human exposure via the inhalation of asbestos fibers. The result of long-term exposure from the inhalation of asbestos fibers could result in serious illnesses such as lung cancer and other asbestos related diseases.

### **Alternative A: Proposed Action**

This alternative would allow OHV use on 218 miles of unpaved roads and trails and 466 acres of barren play areas. Continued OHV use on unpaved roads, trails, and barrens would generate asbestos emissions, and visitors in these areas could have increased cancer risks from exposure to naturally occurring asbestos. An overall reduction in the area available for vehicle access may have little effect to reduce airborne asbestos emissions. Closure of 2410 acres of barrens would contribute to an overall reduction in asbestos dust generation and transport from wind sources, and would contribute to lower levels of asbestos transported to watercourses and impacts to beneficial uses. Potential health risks and air quality impacts from airborne asbestos emissions associated with this alternative are moderately reduced compared to existing conditions, but still include an elevated risk of contracting serious and/or life-threatening asbestos-related diseases from exposure to asbestos fibers. Any reductions in impacts to human health would come primarily from mitigation and administrative measures. Vehicle caused airborne asbestos emissions and public exposure would be reduced by dust suppression with water trucks or other surfactants, on six miles of the lower Clear Creek Canyon road during periods of high use. The impacts from off-site transport of asbestos by OHV user vehicles and subsequent exposure, could be substantially reduced by the construction and use of a public vehicle wash rack for the removal of dust, mud and other asbestos-containing materials from vehicles. Furthermore, surface disturbing activities would only be permitted during periods when air concentrations of asbestos fall below OSHA action levels for a given activity. All BLM road maintenance and grading activities would be conducted in compliance with MBUAPCD ATCM for airborne asbestos, to prevent visible emissions during these operations. Education programs related to asbestos exposure and hazards would be expanded, and any new risk assessments would be incorporated into informational materials. Closure of all remaining mine areas and restricting vehicle access to these areas would further reduce public exposure to hazardous contaminants and transport of hazardous metals to streams. The result of long-term exposure and short term exposure of high concentrations of asbestos through the inhalation of asbestos fibers, could result in serious asbestos related diseases and cancer. It is estimated that OHV use on unpaved roads, trails, and barrens would still generate airborne asbestos emissions and potential exposure, which would increase the probability of an individual's risk to contracting cancer by 5 in 100,000.

### **Proposed Mitigation Measures**

- Special Recreation Permit OHV events and organized activities authorized by BLM would only be allowed when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL). Events would only be allowed from 1 November through 15 April.
- Construction and use of a public vehicle wash facility to reduce transport of asbestos dust and indirect impacts related to off-site contamination and secondary exposure.
- Seasonal access closures and restrictions would be enforced to limit vehicle use during periods of extreme wet and muddy conditions and during periods of extreme dusty conditions. These restrictions would include limiting vehicle access to maintained routes, and, or to the type of vehicle. If the PEL is reached in any given week, signs would be posted warning the public of high dust levels and exposure to asbestos. If the PEL is reached in two

consecutive weeks, vehicle travel would be restricted to routes R001 – R019. These restrictions would remain in force until readings were recorded below the PEL. Augment existing public asbestos hazard information program through improved signing, handouts, advisories, monitoring, public contact, and education programs. Any new risk assessments completed by EPA would be incorporated into the educational materials.

- Designated Closed routes would be selected and prioritized for restoration and reclamation, to allow return to natural state to reduce vehicle and wind generated emissions.
- BLM will comply with all provisions of the Monterey Bay Unified Air Pollution Control District's ATCM regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.
- Dust suppression with the use of water trucks on main routes during high use periods in dry dusty conditions
- All remaining mine areas would be closed to OHV use through route closure or construction of fencing and physical barriers.

#### **Alternative B: Enhanced Recreation**

This alternative would allow OHV use on 239 miles of unpaved roads and trails and 813 acres of barren play areas. Compared to existing conditions, impacts to air quality and human health should marginally improve under this alternative with reductions in airborne asbestos emissions, primarily from mitigation and administrative measures. Environmental impacts would be as described for Alternative A, except as specifically noted. The primary difference in impacts from the other action alternatives would be the designation of 347 additional acres of barren play areas available for OHV use; resulting in a moderate increase in airborne asbestos emissions from surface disturbance, and a corresponding smaller decrease in particulate matter and asbestos emissions from existing conditions.

**Proposed Mitigation Measures** – Same as Alternative A

#### **Alternative C: Enhanced Resource Protection**

This alternative would allow OHV use on 199 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, impacts to air quality and human health should moderately improve under this alternative with reductions in airborne asbestos emissions and particulate matter. Environmental impacts would be as described for Alternative A, except as specifically noted. Additional reductions in airborne asbestos emissions and resulting public exposure would result from vehicle restrictions during the dry season from June 1 – Sept. 1. Though vehicle use is light during the dry season, this period accounts for nearly half of the annual emissions inventory for particulate matter and corresponding airborne asbestos emissions. Restricting vehicle travel during the dry season to a smaller subset of main (improved) routes which have better road surfaces should result in reduced particulate and asbestos emissions. Restricting vehicle access to a smaller network of main routes would likely result in some level of reduced visitation and corresponding vehicle miles traveled, which are key components in the emission inventory.

**Proposed Mitigation Measures** – Same as Alternative A, except as noted below.

- From June 1 – September 1 all vehicle use would be restricted to routes R001 – R019 except for administrative use in order to reduce airborne asbestos emissions and public exposure.

### **Alternative D: No Action**

This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2800 acres of barren play areas. Direct impacts to the air quality and human health would result primarily from unrestricted vehicle use in the area and associated asbestos emissions from OHV use, resulting in no change in current air quality and human health conditions or potential for reduction in asbestos emissions and exposure. Particulate matter and asbestos emissions would continue to contribute to air quality impacts for the North Central Coast and the San Joaquin Valley Air Basins. Secondary exposure from the offsite transport of asbestos fibers from wind, water and vehicles would continue, causing indirect impacts to non-users of the Clear Creek Management Area. Users of the CCMA would continue to transport asbestos dust out of the area via their clothes and vehicles, potentially exposing their families to the health risks associated with asbestos. All mine areas would continue to be closed reducing potential exposure of recreation users to hazardous contaminants.

### **Proposed Mitigation Measures**

- Special Recreation Permit OHV events and organized activities authorized by BLM would only be allowed when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL).
- BLM will comply with all provisions of the Monterey Bay Unified Air Pollution Control District's ATCM regulation for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities.
- All remaining mine areas would be closed to OHV use through route closure or construction of fencing and physical barriers.

## **4.5 BIOLOGICAL RESOURCES**

### **4.5.1 Affected Vegetation Communities**

The Clear Creek Management Area (CCMA) includes 30,000 acres of the Idria serpentine formation (ACEC) that supports serpentine vegetation communities that are the occupied or potential habitat of 37 sensitive plant and animal species and the globally unique San Benito Mountain conifer forest. Public lands surrounding the serpentine ACEC include approximately 33,000 acres of sedimentary soils that extend into areas with relatively limited public motorized access, and are lacking adequate soil, plant and animal surveys. The non-serpentine vegetation communities are not discussed in detail as they have had limited impact due to relatively low OHV recreation use. All routes on sedimentary soils considered for designation in this plan amendment have undergone assessment according to State soil loss and monitoring protocols. Implementation of resource management decisions will be subsequent to this environmental analysis. Under each alternative there are routes, trails and barren areas within habitat that sensitive species are dependant upon.

All of the action alternatives (A, B, and C) will provide greater resource protection throughout the serpentine ACEC by way of limiting and designating OHV use. Under alternative D (No Action) the existing conditions would continue. The following table lists the different acres, and miles under

each alternative. Because all routes were analyzed through the same designation criteria, there are only minor variations in mileages between the action alternatives among the various vegetation types. The most significant differences occur in designation of the barrens and boundaries of the expanded SBMRNA.

Table 5. Designated OHV Use in Each Vegetation Type

Alt.	Serpentine Barrens (acres)	Serpentine Foothill Pine / Chaparral Woodland (miles)	Southern Ultramafic Jeffrey Pine Forest (miles)	Serpentine Riparian Vegetation (miles)	Serpentine Vernal Pools	Serpentine Chaparral (miles)	Non-Serpentine (miles)
A	466	2.3	53	6.5	0	142	18
B	813	2.45	56	7	0	147	30
C	466	0	49	6.5	0	137	11
D	2800	3.1	92	13.5	0	256	54

**Alternative A: Proposed Action**

This alternative would allow OHV use on 218 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, this alternative will enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, reducing the number of stream crossings and miles of routes in riparian areas, and reducing soil disturbing activities by reducing the number of miles of unpaved roads by 45 percent and reducing the acres of barren play areas by 83 percent.

A key component of the long term reduction in sediment yields benefiting riparian areas is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Over 150 miles of roads and trails would be closed and restored under this alternative over a 5 year period. Closure and restoration of barrens would benefit riparian vegetation and increase the acreage of barrens which would be able to support vegetation and special status species. Route and barren closures in high erosion sub-watersheds, including Upper Clear Creek Canyon, south fork of Clear Creek, and Larious Canyon would contribute to reductions in sediment delivery and impacts to sensitive species habitat. A portion of R008 contributing significant amounts of sediment to the sub-watershed, riparian areas, and sensitive habitat would be closed. In addition, the designation of routes and areas and the enforcement of these designations should result in less off route travel and route proliferation.

The 152 stream crossings in this alternative represent a 53 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat. This alternative includes 5.15 miles of routes within riparian areas<sup>1</sup>, which is a 58 per cent reduction from existing conditions.

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

In Alternative A there are 3.85 miles of routes in proximity to potential habitat polygons for the San Benito evening-primrose. This is a reduction of 39 percent compared to existing conditions. Routes affecting this habitat are primarily lower Clear Creek Road and R015 (KCAC, paved.) There is an 80 percent reduction in single track trails (STT) affecting these habitat polygons from existing conditions. Remaining STT (0.35 miles) affecting this potential habitat, occur primarily where trails connect with Clear Creek Road and R015. There is a significant reduction of routes in these polygons, including the closure of a portion of R008 (south fork of Clear Creek) and several trails that intersect with R015 in the San Benito River watershed.

In Alternative A there are 5.70 miles of routes in proximity to potential habitat polygons for rayless layia (*Layia discoidea*). This is a reduction of 46 percent compared to existing conditions. There is an 82 percent reduction in single track trails (STT) affecting these habitat polygons from existing conditions. There is a significant reduction of routes in these polygons, including the Larios and San Benito River watersheds. An overall reduction of 43 percent of routes in San Benito evening-primrose and rayless layia potential habitat would substantially increase the protection given to these habitats.

Several Staging areas (terrace sites) in lower Clear Creek Canyon would continue to experience impacts related to camping and day-use activities. Fencing and barriers protect most sensitive resources in these areas. The continued erosion of topsoil in high vehicle use areas would decrease the productive soil horizons and inhibit natural re-vegetation of some areas.

Under Alternative A, the current status of known San Benito evening-primrose populations on public lands in the CCMA would be maintained or enhanced due to route closure, avoidance through routing away from sensitive areas, fence protection, habitat manipulation, and public education. A discussion of environmental impacts related to vegetation communities follows.

### **Serpentine Barrens**

Alternative A would allow open OHV (primarily motorcycle) use on 466 acres of serpentine barrens and would close approximately 2300 acres throughout the CCMA.

Under this alternative, only the Clear Creek watershed would have designated barren play areas. In the other watersheds, all barrens would be closed to OHV use. Barrens within the three Clear Creek sub-watersheds with the highest erosion would be closed, contributing to a reduction in sediment yield. Concentrating OHV use on the designated open barrens in the Clear Creek watershed may diminish some of the expected reduction in erosion, however, barrens selected in this alternative typically have high hydrographic positions, natural vegetation buffers, and sediment trapping capabilities. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, with a corresponding reduction in sediment yield of 1750 tons per year to the Clear Creek watershed. Barrens within the Clear Creek watershed would contribute 2330 tons per year of sediment yield. All barrens within ¼ mile of Clear Creek would remain closed. The remaining watersheds would see a sediment reduction of approximately 11,670 tons per year over existing conditions.

Most routes and all barrens would be closed in the Larios Canyon watershed benefiting watershed resources, sensitive species habitat, and the Federally Threatened San Benito evening-primrose. Continuing OHV non-compliance into protected areas in this watershed, require closure of this area to OHV recreation. OHV use of barrens and trails within the Larios watershed have contributed to route proliferation, non-compliance, and trespass into sensitive resource areas, requiring

implementation of more stringent management protection measures. Closure of these barrens will also contribute to reductions in sediment yield to terraces with occupied and potential habitat for the San Benito evening-primrose. Barrens in the south fork of Clear Creek will be closed in this high erosion sub-watershed reducing sediment yields and benefiting riparian vegetation, the San Benito evening primrose, and sensitive species habitat.

In all remaining watersheds in the CCMA, including the San Benito River, Sawmill Creek, and San Carlos Creek, barrens would be closed and slated for restoration, substantially reducing impacts to resources in this vegetation community. Closure and rehabilitation of some roads associated with barrens and closure of off-road vehicle open use areas would increase the total acreage of protected serpentine barrens. The rate of soil erosion on closed barrens would lessen and soil formation would increase over the long-term as the biotic crust reforms.

### **Affected Plant Species**

The following species will benefit by reducing the numbers of open barren acres to 466 and protecting 350 acres in the Clear Creek watershed 1989 acres outside of the Clear Creek watershed from OHV use; Brewer's streptanthus (*Streptanthus breweri*), Carlotta Hall's Lace Fern (*Aspidotis Carlotta-halliae*), rayless layia (*Layia discoidea*), Santa Clara thornmint (*Acanthomintha obovata* ssp *obovata*), San Benito evening-primrose (*Camissonia benitensis*), San Benito monardella (*Monardella antonina* var. *benitensis*), Talus fritillary (*Fritillaria falcata*), San Benito fritillary (*F. viridea*).

Open barren use proximal to Clear Creek Canyon would limit OHV use to barrens easily accessible for soil erosion control. Sediment deposition on Clear Creek stream terraces, which is San Benito evening-primrose (*Camissonia benitensis*) primary occupied and potential habitat, would continue and would need to be closely monitored and controlled. All San Benito evening-primrose populations would continue to be protected and monitored.

### **Serpentine Foothill Pine-Chaparral Woodland**

Under Alternative A, 2.45 miles of designated routes and trails would be designated as open in the serpentine foothill pine-chaparral woodland, which is a 26 percent reduction from existing conditions. Overall the implementation of Alternative A would allow for recovery of areas that have been impacted by OHV recreation use in the Serpentine Foothill Pine – Chaparral Woodlands.

### **Affected Plant Species**

There would be increased protection given to the Carlotta Hall's lace fern, Mt. Diablo phacelia, south coast morning glory, talus fritillary, San Benito fritillary, rayless layia, Santa Clara and San Benito thornmint, and San Benito monardella because of the reduction in routes and trails throughout this vegetation community.

Some populations of San Benito fritillary and San Benito morning glory and some habitat for these species could continue to be impacted; however these impacts would be moderately less than existing conditions. There appears to be sufficient numbers of populations distributed over a large enough area that impacts to some populations or habitat should not jeopardize these species, which may soon be removed from the federal list of special-status species.

### **Southern Ultramafic Jeffrey Pine Forest**

The Southern Ultramafic Jeffrey Pine Forest would gain protection by increasing the total acreage within the San Benito Mountain Research Natural Area to 3991 acres. The added upland habitat would include all of upper Clear Creek, and most of the San Carlos Creek and Sawmill Creek watersheds, which supports significant forest stands, and all the pine forest and woodland beyond the northern and eastern perimeters of the existing SBMRNA. This transition zone between the serpentine and non-serpentine areas on the northeast side of the SBMRNA will provide additional protection for this vegetation community. Open use within the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. There would be a substantial reduction in motorized access in this community with the only routes authorized for OHV access being R011 (Spanish Lake Road), T158B (Sawmill Creek Road), and R013, reducing disturbance to this forest community. This forest community in the Sawmill Creek watershed would also see increased protection. Overall there would be a 42 percent reduction of routes within this vegetation community.

### **Affected Plant Species**

There would be increased protection given to Coulter pine, Foothill pine, Jeffrey pine, Incense cedar, Brewer's streptanthus, San Benito fritillary, talus fritillary and the rayless layia, because of the reduction in routes and trails throughout this vegetation community. Likewise, the health of the entire herbaceous community in this vegetation community would be benefited.

### **Serpentine Riparian Vegetation**

Overall the implementation of Alternative A would reduce the number of miles along riparian corridors in the CCMA from approximately 13.5 miles to 6.5 miles. Closure of riparian areas to OHV access throughout the CCMA would allow for the recovery of some riparian areas that have been impacted by intensive motorized recreation activities. Without implementation of Best Management Practices, sediment delivery could continue in those locations where OHV use is permitted on slopes above creeks and drainages. There would be 152 stream crossings under Alternative A, representing a 53 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat, and particularly to habitat for the San Benito evening-primrose.

A key component of the long term reduction in sediment yields benefiting riparian areas is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Closure and restoration of barrens would benefit riparian vegetation and special status species habitat in the majority of sub-watersheds within the CCMA. Route and barren closures in high erosion sub-watersheds, including Upper Clear Creek Canyon, south fork of Clear Creek, and Larious Canyon would contribute to reductions in sediment delivery and impacts to the San Benito evening primrose and riparian habitat. All barrens of low hydrographic position were screened out through the designation criteria. A portion of R008 contributing significant amounts of sediment to the sub-watershed, riparian areas, and sensitive habitat would be closed. Closure of this sub-watershed would directly benefit habitat for the San Benito evening-primrose. In addition, the designation of routes and areas and the enforcement of these designations should result in less off route travel and route proliferation. There would be a significant reduction of routes affecting this vegetation community in the Larious watershed, and in

particular closure of all routes in the upper east fork of Larious Creek affecting rayless layia within this riparian community.

Concentrating OHV use on the designated open barrens in the Clear Creek watershed may diminish some of the expected reduction in erosion and related impacts to riparian areas; however, barrens selected in this alternative typically have high hydrographic positions, natural vegetation buffers, and sediment trapping capabilities. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, with a corresponding reduction in sediment yield of 1750 tons per year to the Clear Creek watershed. All barrens within ¼ mile of Clear Creek would remain closed. The remaining watersheds would see a reduction of approximately 11,670 tons per year over existing conditions providing a significant benefit to the Serpentine Riparian vegetation community.

### **Affected Plant Species**

Nearly all remaining suitable San Benito evening-primrose habitat (both terrace sites and temporary streamside habitat) along Clear Creek would be maintained or enhanced due to enforced limited use vehicle restrictions, fence protection, habitat manipulation, and public education. Management actions related to the introduction of the San Benito evening primrose at 33 medium- and high-priority terrace sites could increase the number of populations. Additional protected riparian habitat within the expanded SBMRNA would also benefit this species.

Greater protection of the San Benito evening-primrose potential and occupied habitat would occur under the proposed alternative because of significantly reduced route, trail, and barren designations within this vegetation community. Roads and areas that impact this species would be rerouted or closed. The Larious watershed would be closed to motorized vehicles, providing enhanced long-term protection for this important species population there and contribute to recovery efforts. Upper Clear Creek Canyon would be included in the expanded RNA and coupled with further vehicle restrictions in the RNA, would facilitate and enhance management to protect this species there. Large proportions of Clear Creek Road, Sawmill Creek Road, San Benito River Road, and San Carlos Creek Road would be managed for introducing the primrose into suitable habitat.

Portions of Clear Creek terraces used for camping and as off-road vehicle staging areas and portions of 28 terraces used for main roads would remain unsuitable as San Benito evening-primrose habitat. OHV use in lower Clear Creek Canyon would remain relatively unchanged compared to existing conditions and would therefore see the smallest change in riparian impacts as a result of the route designation process. Most of the serpentine riparian habitat in lower Clear Creek is fenced; however additional fencing and protection measures may be required.

The substantial reduction in stream crossings and 52 percent reduction in miles of routes in this riparian vegetation community, would have significant beneficial impacts by reducing sediment delivery to habitat for the San Benito evening-primrose and the following riparian plant species; rayless layia, Guirado's goldenrod, Heerman's buckwheat, Hernandez bluecurls, and Brewer's salix; particularly outside lower Clear Creek Canyon.

### **Serpentine Vernal Pools**

All known vernal pools within the CCMA are currently protected by fencing and pipe barriers to prevent disturbance by OHV recreation activities. Vernal pools will continue to be protected under this alternative.

### **Affected Plant Species**

All serpentine vernal pool plant species will benefit by the existing protection measures.

#### **Serpentine Chaparral**

Route designations within the serpentine chaparral would result in 142 miles of routes and trails for OHV recreation under Alternative A. This is a reduction of 45 percent in this vegetation community, compared to existing conditions. Designation of routes and trails will have long-term benefits within the serpentine chaparral by implementing closure and restoration of routes and trails, and eliminating unregulated use, cross-country travel, implementing Best Management Practices, completing significant road repairs and improvements, and reducing soil disturbing activities.

### **Affected Plant Species**

There would be increased protection given to the Carlotta Hall's lace fern, Mt. Diablo phacelia, south coast morning glory, talus fritillary, San Benito fritillary, rayless layia, Santa Clara and San Benito thornmint, and San Benito monardella because of the reduction in routes and trails throughout this vegetation community. Chaparral shrub and herbaceous plant species remain quite extensive in this vegetation community within the CCMA, and while small localized areas may experience impacts from OHV recreation and camping, their overall survival is not threatened because they remain abundant, and in many areas serve as natural obstacles to off-route travel.

#### **Non-Serpentine Vegetation Communities**

Under Alternative A, 18 miles of routes and trails have been identified for OHV use on non-serpentine vegetation types. This is a 67 percent reduction in the miles of routes compared to existing conditions. These routes are primarily in the Condon Peak area and a small area on the east side of the CCMA in the Cantua Creek watershed. As in all vegetation communities, route and trail designation will be beneficial to the biological resources by limiting motorized use and disturbance. The sedimentary soils outside of the serpentine ACEC generally exhibit lower erosion rates than serpentine soils and corresponding impacts to vegetation related to OHV use.

### **Affected Plant Species**

The following plant species would benefit by OHV designations, a reduction in the miles of routes, and ongoing protection in the non-serpentine vegetation communities; Mt. Diablo Phacelia, San Benito monardella, San Benito thornmint, Santa Clara thornmint, slender pentachaeta, south coast range morning glory, San Benito fritillary, talus fritillary and San Benito spineflower.

#### **Proposed Mitigation Measures**

- Portions of Clear Creek, Sawmill Creek, San Benito River, and San Carlos Creek would be managed for introducing the San Benito evening-primrose into suitable habitat.
- All populations of the San Benito evening-primrose and protection measures in place would be monitored for compliance relating to OHV trespass and adaptive management would determine additional management actions to protect this species.
- Designated Closed routes would be selected and prioritized for restoration and reclamation to minimize impacts to vegetation communities.

- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges, and are contained in Appendix D. These site treatments are incorporated into BLM's annual corrective route maintenance plan.
- Implement barren area protection plan to minimize off-site sediment transport through repair of erosion scars, construction of drainage improvements, sediment control and trapping treatments, and re-vegetation of vegetative buffers. Designated Closed barrens would be selected and prioritized for restoration and reclamation employing these same techniques.
- Construct fence and barriers to preclude access to riparian areas and closed barrens to prevent vehicle disturbance and off-site transport of sediments. Specifically fence along R002 to control OHV access into the Larious watershed and fence along T113 to controls access to closed barrens in a high erosion watershed on the south side of Clear Creek.
- Monitor all unprotected populations of rayless layia, Mount Diablo phacelia, and talus fritillary for possible adverse impacts from vehicles and other uses and implement protective actions as warranted.
- Inventory suitable habitat for all sensitive plant species
- Monitor any new populations of these species documented during future inventories for adverse impacts and implement protective actions as warranted.
- Implement long-term studies to determine how disturbances such as human use, storms, and erosion, impact the viability of the above species. Employ adaptive management in the CCMA to help improve conditions for these species.

### **Alternative B – Enhanced Recreation**

This alternative would allow OHV use on 245 miles of unpaved roads and trails and 813 acres of barren play areas. Compared to existing conditions, this alternative will enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, reducing the number of stream crossings and miles of routes in riparian areas, and reducing soil disturbing activities by reducing the number of miles of unpaved roads by 38 percent and reducing the acres of barren play areas by 71 percent.

The 159 stream crossings in this alternative represent a 51 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in

substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat. This alternative includes 5.29 miles of routes within riparian areas<sup>1</sup>, which is a 57 per cent reduction from existing conditions.

In Alternative B there are 3.85 miles of routes in proximity to potential habitat polygons for the San Benito evening-primrose. This is a reduction of 39 percent compared to existing conditions. Routes affecting this habitat are primarily lower Clear Creek Road and R015 (KCAC, paved.) There is an 80 percent reduction in single track trails (STT) affecting these habitat polygons from existing conditions. Remaining STT (0.35 miles) affecting this potential habitat, occur primarily where trails connect with Clear Creek Road and R015. There is a significant reduction of routes in these polygons, including the closure of a portion of R008 (south fork of Clear Creek) and several trails that intersect with R015 in the San Benito River watershed.

In Alternative A there are 5.79 miles of routes in proximity to potential habitat polygons for rayless layia (*Layia discoidea*). This is a reduction of 45 percent compared to existing conditions. There is an 82 percent reduction in single track trails (STT) affecting these habitat polygons from existing conditions. There is a significant reduction of routes in these polygons, including the Larios and San Benito River watersheds. An overall reduction of 43 percent of routes in San Benito evening-primrose and rayless layia potential habitat would substantially increase the protection given to these habitats.

Biological consequences are expected to be similar as those addressed in Alternative A with the exceptions discussed below.

### **Serpentine Barrens**

The 813 acres of serpentine barrens designated as open areas under this alternative are dispersed throughout the CCMA (Appendix J) and exceed the other action alternatives by 347 acres. The primary difference in impacts would be the designation of 347 additional acres of barren play areas available for OHV use, resulting in an average increase of 1735 tons per year of sediment yield to the Larios, Cantua, Sawmill Creek, and San Benito watersheds, compared to the other action alternatives. The erosion associated with barren play areas, would contribute approximately 4065 tons of sediment per year affecting four CCMA watersheds. The CCMA watersheds would see a sediment reduction of approximately 9935 tons per year over existing conditions, benefiting impacts to riparian areas and several different plant and animal populations and habitat.

The majority of barrens in the Larios Canyon watershed would be closed, benefiting watershed resources, sensitive species habitat, and the Federally Threatened San Benito evening-primrose. Three barrens would remain open in the east fork of Larios Creek watershed and would continue to contribute to potential impacts to sensitive species habitat including the San Benito evening-primrose. Six barrens would remain open in San Benito River, Sawmill Creek, and Cantua Creek watersheds and continue contributing sediment to these watersheds.

All closed barrens would be slated for restoration, substantially reducing impacts to resources in this vegetation community. Closure and rehabilitation of some roads associated with barrens and closure of off-road vehicle open use areas would increase the total acreage of protected serpentine barrens.

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

Under this alternative there would be 347 less acres available for restoration. The rate of soil erosion on closed barrens would decrease and the rate of soil formation could eventually increase as the biotic crust reforms.

Designation of “The Bowl”, a serpentine barren-Jeffrey pine habitat mosaic, for OHV recreation use, would increase Jeffrey pines root exposure, Jeffrey pine seedling and sapling damage by vehicles, as well as soil compaction and soil loss that would inhibit germination. Erosion and sediment transport related to OHV use from this barren would continue to impact this unique forest community and watershed resources in Cantua Creek. OHV use of barrens in this area would need to be controlled to prevent unauthorized use within the SBMRNA, and is also proximal to non-serpentine areas that are considered pristine because of limited motorized vehicle access.

### **Affected Plant Species**

The following species will benefit by reducing the numbers of open barren acres to 813 and protecting 1987 acres from OHV use; Brewer’s streptanthus (*Streptanthus breweri*), Carlotta Hall’s Lace Fern (*Aspidotis Carlotta-halliae*), rayless layia (*Layia discoidea*), Santa Clara thornmint (*Acanthomintha obovata* ssp *obovata*), San Benito evening-primrose (*Camissonia benitensis*), San Benito monardella (*Monardella antonina* var. *benitensis*), Talus fritillary (*Fritillaria falcata*), San Benito fritillary (*F. viridea*).

### **Serpentine Foothill Pine-Chaparral Woodland**

Environmental impacts are essentially the same as for Alternative A.

### **Southern Ultramafic Jeffrey Pine Forest**

The Southern Ultramafic Jeffrey Pine Forest would gain protection by increasing the total acreage within the San Benito Mountain Research Natural Area to 3522 acres. This is from 439 to 1058 less acres than the other action alternatives. The added upland habitat would include most of the upper Clear Creek watershed which supports significant forest stands. No additional acreage would be added in the Sawmill Creek watershed, and only a very small amount of acreage would be added in the San Carlos Creek watershed, providing less protection to the pine forest and woodland in these areas. A transition zone between the serpentine and non-serpentine areas on the east side of the SBMRNA would provide additional protection for this vegetation community. Open use within the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. There would be a slight reduction in motorized access in this community with T155 and a few other small trail segments, the only routes closed compared with existing conditions. The Ridge Route (R010) would remain open and unless completely corridor fenced would likely continue to contribute to off-route travel and associated impacts within the RNA and this forest community. Most reductions in route mileage in this community for this alternative would occur outside the RNA. Overall there would be a 39 percent reduction of routes within this vegetation community.

Open OHV use in the “Bowl” (southeast corner of RNA) would continue to contribute to impacts to this barren-Jeffrey pine forest mosaic, by allowing use in and contiguous to this sensitive Jeffrey pine vegetation community, unless substantial mitigation measures were implemented.

### **Affected Plant Species**

There would be increased protection given to Coulter pine, Foothill pine, Jeffrey pine, Incense cedar, Brewer's streptanthus, San Benito fritillary, talus fritillary and the rayless layia, because of the reduction in routes and trails throughout this vegetation community. However, within the RNA there would be less protection afforded to affected plant species, and corresponding reduction in impacts in this forest community would be moderately less than the other action alternatives. The health of the herbaceous community in this vegetation community would be benefited.

### **Serpentine Riparian Vegetation**

Overall the implementation of Alternative B would reduce the number of miles along riparian corridors in the CCMA from approximately 13.5 miles to 7.0 miles. Closure of riparian areas to OHV access throughout the CCMA would allow for the recovery of some riparian areas that have been impacted by intensive motorized recreation activities. Without implementation of Best Management Practices, sediment delivery could continue in those locations where OHV use is permitted on slopes above creeks and drainages. There would be 159 stream crossings under Alternative B, representing a 51 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat

A key component of the long term reduction in sediment yields benefiting riparian areas is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Closure and restoration of barrens would benefit riparian vegetation and special status species habitat in the majority of sub-watersheds within the CCMA.

The 813 acres of serpentine barrens designated as open areas under this alternative are dispersed throughout the CCMA (Appendix J) and exceed the other action alternatives by 347 acres. The primary difference in impacts would be the designation of 347 additional acres of barren play areas available for OHV use, resulting in an average increase of 1735 tons per year of sediment yield to the Larios, Cantua, Sawmill Creek, and San Benito watersheds, compared to the other action alternatives. The erosion associated with barren play areas, would contribute approximately 4065 tons of sediment per year affecting four CCMA watersheds, which is a 43 percent increase over the other action alternatives. The CCMA watersheds would see a sediment reduction of approximately 9935 tons per year over existing conditions, benefiting impacts to riparian areas and several different plant and animal populations and habitat.

The majority of barrens in the Larios Canyon watershed would be closed, benefiting watershed resources, sensitive species habitat, and the Federally Threatened San Benito evening-primrose. Three barrens would remain open in the east fork of Larios Creek watershed and would continue to contribute to potential impacts to riparian areas and sensitive species habitat including the San Benito evening-primrose. Six barrens would remain open in San Benito River, Sawmill Creek, and Cantua Creek watersheds and continue contributing sediment to these watersheds.

With OHV use of barrens not confined to the Clear Creek watershed, there would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, with a corresponding reduction in sediment yield of 1750 tons per year to the Clear Creek watershed. All

barrens within ¼ mile of Clear Creek would remain closed. Most barrens of low hydrographic position were screened out through the designation criteria.

### **Affected Plant Species**

The substantial reduction in stream crossings and 48 percent reduction in miles of routes in this riparian vegetation community, would have significant beneficial impacts to the San Benito evening-primrose and the following riparian plant species; rayless layia, Guirado's goldenrod, Heerman's buckwheat, Hernandez bluecurls, and Brewer's salix; except for the east fork Larios Creek. However, the 43 percent increase in sediment yield from open barrens, over the other action alternatives, would continue to contribute to potential impacts to this riparian community and the affected plant species.

### **Serpentine Vernal Pools - Same as Alternative A.**

#### **Serpentine Chaparral:**

There would be 5 or 10 additional miles of open routes and trails (less than a 2 percent difference) in the serpentine chaparral vegetation community compared to the other action alternatives. Differences in affects to plant and animal species are negligible. The 43 percent reduction of miles of routes in this vegetation community would have long-term benefits within the serpentine chaparral compared to the existing condition.

**Affected Plant Species** – Same as Alternative A

### **Non-Serpentine Vegetation Communities**

Under Alternative B, 30 miles of routes and trails would be designated for OHV use on non-serpentine vegetation types. This is a 44 percent reduction in the miles of routes compared to existing conditions. These routes are primarily in the Condon Peak area and a small area on the east side of the CCMA in the Arroyo Leona watershed. As in all vegetation communities, route and trail designation will be beneficial to the biological resources by limiting motorized use and disturbance. Continuing OHV use on existing routes in some peripheral non-serpentine areas, particularly in the eastern portion of the CCMA, may increase the potential of impacting some species prior to inventory.

**Affected Plant Species** - Same as Alternative A

**Proposed Mitigation Measures** – Same as Alternative A, except as noted

- Corridor fence R010 and T153 (7 miles)
- Fence the north and west side of the “Bowl” to prevent cross country travel into the RNA and control impacts to the Southern Ultramafic Jeffrey Pine forest.
- Construct perimeter fence to prevent cross country travel from five barrens in the San Benito watershed.
- Construct sediment control and trapping treatments control treatments for three open barrens in the east fork Larios Creek.

### **Alternative C – Enhanced Resource Protection**

This alternative would allow OHV use on 203 miles of unpaved roads and trails and 466 acres of barren play areas. Compared to existing conditions, this alternative will most enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, reducing the number of stream crossings and miles of routes in riparian areas, and reducing soil disturbing activities by reducing the number of miles of unpaved roads by 49 percent and reducing the acres of barren play areas by 83 percent. There is a substantial increase in acreage for the SBMRNA, including a larger portion of the San Carlos Bolsa watershed. Most OHV use would be eliminated in the Condon Peak area, and all motorized vehicle use would be eliminated outside the serpentine ACEC in the Cantua and Arroyo Leona watershed.

The 144 stream crossings in this alternative represent a 56 per cent reduction from the existing route inventory. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat. This alternative includes 4.95 miles of routes within riparian areas<sup>1</sup>, which is a 60 per cent reduction from existing conditions.

In Alternative C there are 3.85 miles of routes in proximity to potential habitat polygons for the San Benito evening-primrose. This is a reduction of 39 percent compared to existing conditions. Routes affecting this habitat are primarily lower Clear Creek Road and R015 (KCAC, paved.) There is an 80 percent reduction in single track trails (STT) affecting these habitat polygons from existing conditions. Remaining STT (0.35 miles) affecting this potential habitat, occur primarily where trails connect with Clear Creek Road and R015. There is a significant reduction of routes in these polygons, including the closure of a portion of R008 (south fork of Clear Creek) and several trails that intersect with R015 in the San Benito River watershed.

In Alternative C there are 5.35 miles of routes in proximity to potential habitat polygons for rayless layia (*Layia discoidea*). This is a reduction of 49 percent compared to existing conditions. The primary reduction within this habitat is attributed to slightly less miles in 4-WD and jeep routes. There is a significant reduction of single track trails in these polygons, including the Larious and San Benito River watersheds. An overall reduction of 45 percent of routes in San Benito evening-primrose and rayless layia potential habitat would substantially increase the protection given to these habitats.

Biological consequences are expected to be similar as those addressed in Alternative A with the exceptions discussed below.

#### **Serpentine Barrens**

The acreage and location of serpentine barren designation in Alternative C is the same as Alternative A. Affects to both plant and animal species is discussed in Alternative A.

#### **Serpentine Foothill Pine-Chaparral Woodland**

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

Under Alternative C there would be no OHV use designated in the Foothill Pine-Chaparral Woodland providing the greatest protection and benefit for this community. Plant and animal species would not be affected by OHV recreation use. Implementation of this alternative would allow for recovery of areas that have been historically impacted by OHV recreation use in the Serpentine Foothill Pine – Chaparral Woodlands.

### **Affected Plant Species**

There would be significant protection given to the Carlotta Hall's lace fern, Mt. Diablo phacelia, south coast morning glory, talus fritillary, San Benito fritillary, rayless layia, Santa Clara and San Benito thornmint, and San Benito monardella within this vegetation community.

### **Southern Ultramafic Jeffrey Pine Forest**

There would be the largest amount of this forest community protected under this alternative; however, in general impacts would be similar as Alternative A.

The expansion of the San Benito Mountain Research Natural Area to 4580 acres would increase protection of the existing unique Southern Ultramafic Jeffrey Pine forest habitat and provide the greatest protection for the values for which the RNA was established. The added upland habitat would include most of the upper Clear Creek, Sawmill Creek watersheds, and the largest portion of the San Carlos watershed; all of which support significant forest stands and important riparian habitat. All of the pine forest and woodland beyond the northern and eastern perimeters of the existing SBMRNA would be protected in the transition zone between the serpentine and non-serpentine areas. In addition to providing a high value for scientific study, this transition zone also contains one of only two known populations of the Mt. Diablo phacelia within the CCMA. Open use or cross-country travel within the forested ecosystem would be prohibited, which would assist in forest regeneration and sensitive plant and animal protection.

Inclusion of buffer zones contiguous to the existing RNA would enhance the integrity of the Southern Ultramafic Jeffrey Pine Forest and the San Benito Mountain Research Natural Area, and would aid in preventing OHV trespass into sensitive areas. The BLM would protect the SBMRNA from any future mineral exploration to ensure long-term protection of this unique forest ecosystem. The overall integrity of the RNA would increase because boundary adjustments would include the largest portion of whole sub-watersheds, instead of only portions of them.

**Affected Plant Species** – Same as Alternative A

### **Serpentine Riparian Vegetation**

This alternative includes 4.95 miles of routes within riparian areas<sup>1</sup>, which is a 60 per cent reduction from existing conditions. Miles of routes within this vegetation community would be reduced from 13.5 miles under existing conditions to 6.5 miles. There would be 144 stream crossings representing a 56 per cent reduction from the existing route inventory. Closure of riparian areas to OHV access throughout the CCMA would allow for the recovery of some riparian areas that have been impacted

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

by intensive motorized recreation activities. The remaining benefits to this vegetation community resulting from limiting OHV use in these areas are described in Alternative A.

**Affected Plant Species** – Same as Alternative A

**Serpentine Vernal Pools** - Same as Alternative A

**Serpentine Chaparral**

There would be 137 miles of open routes and trails in the serpentine chaparral vegetation community. Compared to the other action alternatives, this is less than a 2 percent difference. Differences in affects to plant and animal species are negligible. The 46 percent reduction of miles of routes in this vegetation community would have long-term benefits within the serpentine chaparral compared to the existing condition.

**Affected Plant Species** – Same as Alternative A

**Non-Serpentine Vegetation Communities**

Under Alternative C, 11 miles of routes and trails would be designated for OHV use on non-serpentine vegetation types. This is a 80 percent reduction in the miles of routes compared to existing conditions. Most OHV use would be eliminated in the Condon Peak area, and all motorized vehicle use would be eliminated outside the serpentine ACEC in the Cantua and Arroyo Leona watershed. As in all vegetation communities, route and trail designation will be beneficial to the biological resources by limiting or eliminating motorized use and disturbance in these areas.

**Affected Plant Species** - Same as Alternative A

All route would be closed to OHV use except for Spanish Lake Road (R011) resulting in significant reductions in off-route and cross country travel in these areas, thus affording greatest protection to the plant communities within the SBMRNA.

Within the expanded boundaries of the SBMRNA, three of the known San Benito evening primrose populations would be protected instead of the one currently protected; and the number of acres of primrose terrace habitat would increase to thirteen acres from one acre. Three additional miles of streambank primrose habitat along upper Clear Creek would be incorporated into the RNA, furthering the long-term protection of this species.

**Proposed Mitigation Measures** – Same as Alternative A, except additional corridor fencing for routes within the RNA would not be necessary.

**Alternative D – No Action**

Route and barren designations would not be completed. Without a designated route network, implementing and enforcing measures to protect biological resources would be difficult. This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2,800 acres of barren play areas. Direct impacts to soil loss and sediment delivery would result primarily from unrestricted vehicle use in the area, resulting in no change in current sediment yield conditions or potential for reductions in erosion and off-site transport of sediment, and associated impacts to

riparian areas and vegetation communities. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds, above yields from natural background levels and continue to impact vegetation resources and sensitive species habitat. This alternative includes 12.4 miles of routes within riparian areas<sup>1</sup> and 326 stream crossings. Considering that a substantial amount of sediment yield and associated impacts to riparian habitat is attributed to stream crossings, implementing Best Management Practices to mitigate these impacts on this large number of crossings would be difficult. The 2800 acres of barrens would contribute 14,000 tons of sediment to the CCMA annually affecting riparian habitats. The route network would contribute 24,969 tons of sediment affecting CCMA watershed resources. High erosion sub-watersheds would continue to contribute to resource impacts, particularly in the Clear Creek and Larios watersheds. Implementing mitigation measures for this magnitude of erosion and sediment yield affecting biological resources throughout the CCMA, is likely beyond the ability of the BLM. Continued resource impacts from OHV use in the Larios watershed could be especially serious and jeopardize species populations and habitat for the Federally threatened San Benito evening-primrose. Protection of the San Benito evening primrose in all locations, including Upper Clear Creek Canyon could continue to be problematic without the ability to limit the route network. Additional administrative closures of areas or sub-watersheds may be necessary to protect this species if impacts from non-compliant OHV use continue. These impacts could contribute to potential listing as endangered. Under the current management situation, non-compliant OHV use in occupied and potential habitat for the San Benito evening-primrose has reached levels that threaten closure of the CCMA. These impacts would be significant should they continue. Direct impacts from vehicle use and indirect impacts from erosion would affect special status species in upland areas and other sensitive plant habitat in riparian areas, as a result of a route network that is not sustainable. The 181 miles of single track trails in particular, would present significant challenges related to controlling non-compliant use and off-route travel. Restoration of closed routes and areas would not be accomplished to reduce erosion and sediment yields to background levels.

In Alternative D there are 6.29 miles of routes in proximity to potential habitat polygons for the San Benito evening-primrose, including 1.79 miles of single track trails (STT) affecting this habitat. There are 10.49 miles of routes in proximity to potential habitat polygons for rayless layia (*Layia discoidea*), including 4.84 miles of single track trails (STT) affecting this habitat.

Degradation of suitable habitat and loss of some populations of talus fritillary, San Benito fritillary, rayless layia, slender pentachaeta, San Benito spineflower, and Mt. Diablo phacelia could occur due to continued vehicle impacts from the existing route and barren network, and contribute to listing as threatened or endangered.

The SBMRNA would be expanded as proposed in the CCMA FEIS (1995) and similar to the expansion in Alternative B.

### **Serpentine Barrens**

The 2800 acres of barrens within the CCMA would continue to contribute 14,000 tons of sediment annually to all watersheds in the CCMA, and contribute to loss of habitat for several sensitive plant species and impacts to riparian areas. Serpentine barrens throughout the CCMA would continue to degrade under intensive vehicle use, and continue loss of the biologic crust, slow the rate of soil

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

formation, increase erosion and sedimentation, and decrease plant cover and soil productivity. High erosion sub-watersheds would continue to contribute to resource impacts affecting riparian and upland vegetation, particularly in the Clear Creek and Larious watersheds. Few closed barrens would be available for restoration to provide the potential for reducing impacts to resources in this vegetation community. Controlling off-route and cross country OHV travel from this large barren network would continue to be problematic.

### **Affected Plant Species**

Within the serpentine barren mosaic, where vegetation occurs, the special status species (talus fritillary, San Benito fritillary, rayless layia, San Benito spineflower, slender pentachaeta, and Mt. Diablo phacelia) would continue to be impacted which could contribute to listing as threatened. Herbaceous vegetation which includes several special-status species and other uncommon species would continue to decline within the existing barren acreage for off-road vehicle recreation.

### **Serpentine Foothill Pine-Chaparral Woodland**

There are 3.1 miles of routes within this community. Impacts from vehicle disturbance, soil erosion, route proliferation and cross country OHV use would continue to affect this vegetation community.

### **Affected Plant Species**

Special status species, as described above (talus fritillary, San Benito fritillary, rayless layia, San Benito spineflower, slender pentachaeta, and Mt. Diablo phacelia) would continue to be impacted which could contribute to listing as threatened. Herbaceous vegetation which includes several special-status species and other uncommon species would continue to decline within the acreage designated as "open" for off-road vehicle recreation.

Until inventory, monitoring and long-term studies analyze the nature of adverse impacts to these special status plant species and develop actions to improve conditions for affected species, on-going impacts would continue.

### **Southern Ultramafic Jeffrey Pine Forest**

Within the SBMRNA the Southern Ultramafic Jeffrey Pine Forest would gain slight protection by increasing the total acreage of the RNA to approximately 3580 acres. Outside of the RNA this vegetation community would continue to suffer impacts from vehicle disturbance, soil erosion, route proliferation and cross country OHV use. The added upland habitat within the RNA would include most of the upper Clear Creek watershed which supports significant forest stands. In the Sawmill Creek watershed and San Carlos Creek watershed the pine forest and woodland in these areas would not be fully protected. A transition zone between the serpentine and non-serpentine areas on the east side of the SBMRNA would provide some additional protection for this vegetation community. Open OHV use within the RNA portion of the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. There would be no reduction in motorized routes in this community, directly affecting the ability to minimize impacts from continued OHV use. The Ridge Route (R010) would remain open and unless completely corridor fenced would likely continue to contribute to off-route travel and associated impacts within the RNA and this forest community.

Open OHV use in the “Bowl” (southeast corner of RNA) would continue to contribute to impacts to this barren-Jeffrey pine forest mosaic, by allowing use in and contiguous to this sensitive Jeffrey pine vegetation community, unless substantial mitigation measures were implemented.

### **Affected Plant Species**

There would be some increased protection given to Coulter pine, Foothill pine, Jeffrey pine, Incense cedar, Brewer’s streptanthus, San Benito fritillary, talus fritillary and the rayless layia, because of inclusion in the RNA, however with no reduction in routes and trails throughout this vegetation community, this may be a marginal improvement. Until actions were taken to improve conditions for affected species, on-going impacts would continue.

### **Serpentine Riparian Vegetation**

Direct impacts to soil loss and sediment delivery would result primarily from unrestricted vehicle use in the area, resulting in no change in current sediment yield conditions or potential for reductions in erosion and off-site transport of sediment, and associated impacts to riparian areas and vegetation communities. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds, above yields from natural background levels and continue to impact vegetation resources, sensitive species habitat, and the San Benito evening-primrose. This alternative includes 12.4 miles of routes within riparian areas<sup>1</sup> and 326 stream crossings. The 2800 acres of barrens would contribute 14,000 tons of sediment to the CCMA annually affecting riparian habitats and listed species. The route network would contribute 24,969 tons of sediment affecting CCMA watershed resources. High erosion sub-watersheds would continue to contribute to resource impacts, particularly in the Clear Creek and Larios watersheds. Continued resource impacts from OHV use in the Larios watershed could be especially serious and jeopardize species populations and habitat for the Federally threatened San Benito evening-primrose. Direct impacts from vehicle use and indirect impacts from erosion would affect special status species and other sensitive plant habitat in riparian areas.

Hillside failures into riparian areas would continue due to the presence of roads across inherently unstable slopes. Numerous creek crossings along roads and trails outside of Clear Creek (few of which are stabilized by concrete reinforcements, rock armoring, or culverts) would continue to contribute sediment yield and be sites of streambed disturbance. Without a reduction in the route network and barren areas available for OHV use and corresponding reductions in the magnitude of erosion and sediment yield, the impacts to this vegetation community would continue and likely be significant.

### **Affected Plant Species**

Because of loss of suitable habitat, the San Benito evening primrose could decline, and contribute to re-listing as endangered. Thirteen populations of rayless layia, the single population of Mount Diablo phacelia, and a portion of one talus fritillary population would remain vulnerable to damage and soil disturbances by off-road vehicle use. Habitat for talus fritillary, San Benito spineflower, and slender pentachaeta could be impacted along vehicle routes left open.

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

### **Serpentine Vernal Pools**

All known vernal pools within the CCMA are currently protected by fencing and pipe barriers to prevent disturbance by OHV recreation activities. Vernal pools will continue to be protected under this alternative.

#### **Affected Plant Species**

All serpentine vernal pool plant species will benefit by the existing protection measures.

### **Serpentine Chaparral**

There are 256 miles of routes and trails in the serpentine chaparral vegetation community. Impacts from vehicle disturbance, soil erosion, route proliferation and cross country OHV use would continue to affect this vegetation community.

#### **Affected Plant Species**

There would be continued impacts to the Carlotta Hall's lace fern, Mt. Diablo phacelia, south coast morning glory, talus fritillary, San Benito fritillary, rayless layia, Santa Clara and San Benito thornmint, and San Benito monardella from disturbance related to OHV recreation use. Though chaparral shrub and herbaceous plant species remain quite extensive in this vegetation community within the CCMA, localized areas would experience impacts from OHV recreation and camping. The 16,000 tons of annual sediment yield in this vegetation community would continue to affect sensitive resources and plant habitat.

### **Non-Serpentine Vegetation Communities**

Under this Alternative 54 miles of routes and trails would be designated for OHV use on non-serpentine vegetation types. This would continue to impact vegetation resources in the following areas; Condon Peak, White Creek, Arroyo Leona, Cantua Creek, Los Gatos, San Carlos Bolsa, and Larious Creek. Direct impacts to vegetation would result primarily from unrestricted vehicle, vehicle disturbance, soil erosion, route proliferation and cross country OHV use affecting this vegetation community on non-serpentine soils.

#### **Affected Plant Species**

The following plant species would be impacted by a lack of OHV designations and continuing impacts to the following species; Mt. Diablo Phacelia, San Benito monardella, San Benito thornmint, Santa Clara thornmint, slender pentachaeta , south coast range morning glory, San Benito fritillary, talus fritillary and San Benito spineflower.

### **Proposed Mitigation Measures**

- All routes and boundaries within the SBMRNA would need to corridor or perimeter fenced to prevent cross country OHV travel (over 15 miles)
- All populations of the San Benito evening-primrose and protection measures in place would be monitored for compliance relating to OHV trespass and adaptive management would determine additional management actions to protect this species.

- California State Soils Loss Standards and Monitoring would be implemented on all routes to the extent possible and surveys completed on an annual basis. Routes may be temporarily closed until corrective maintenance repairs can be completed if necessary.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) on a portion of the route network to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings, hardened sills, and half-pipe bridges, and are contained in Appendix D. These site treatments are incorporated into BLM's annual corrective route maintenance plan.

## **4.5.2 Affected Special Status Animal Species**

### **Alternatives A, B, and C**

Designation of routes and trails and barrens for use within the CCMA will enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA, by reducing unregulated use, erosion, sediment yield, and impacts to watershed resources, as described below. The differences between Alternative A, B, and C are negligible in most occurrences and substantial in others; however, in all cases there would be a net positive effect to all animal species that occur or have the potential to occur within the CCMA when weighed against the No Action Alternative.

The reduction of open routes and barrens, and the elimination of cross-country use will diminish habitat fragmentation, auditory disturbance, and the probability of being crushed by vehicles will be lessened through all action alternatives in upland and riparian wildlife habitats. The elimination of all barrens of low hydrographic position will reduce the sediment flow into watersheds within the CCMA increasing the protection and decreasing the negative impacts to the sensitive riparian areas and animal species.

Currently, all vernal pool communities are protected within the CCMA. This continued protection, will benefit the following species, which have the potential to occur, under all action and no action alternatives, Vernal pool fairy shrimp, Conservancy fairy shrimp, and Vernal pool tadpole shrimp.

The following species will benefit through the designation of routes and trails, elimination of cross-country travel, recovery of impacted areas, and the habitat protection an increased SBMRNA would provide; foothill yellow-legged frog, northwestern pond turtle, and southwestern pond turtle, two-striped garter snake, valley elderberry longhorn Ciervo aegialian scarab beetle, San Joaquin dune beetle, California condor, bald eagle, western mastiff-bat, Townsend's western big-eared bat, pallid bat, long-eared myotis, Yuma myotis, fringed myotis, small-footed myotis coast horned lizard, sharp-shinned hawk, golden eagle, prairie falcon, Bell's sage sparrow, and the big-eared kangaroo rat.

Impacts to four BLM sensitive species, foothill yellow-legged frog, two-striped garter snake, and the northwestern and southwestern pond turtles, known to populate riparian areas within the CCMA will be decreased through all action alternatives. Route and barren designation will decrease impacts in adjacent upland habitats, decrease potential erosion, and sediment yield, contributing to reductions in habitat degradation in riparian areas. This would be accomplished by reducing the number of stream crossings and miles of routes in riparian areas by approximately 50 percent, and reducing soil

disturbing activities by reducing the number of miles of unpaved roads by up to 49 percent and reducing the acres of barren play areas by up to 83 percent. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat.

Concentrating OHV use on the designated open barrens in the Clear Creek watershed may diminish some of the expected reduction in erosion and related impacts to riparian areas; however, barrens selected in this alternative typically have high hydrographic positions, natural vegetation buffers, and sediment trapping capabilities. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, with a corresponding reduction in sediment yield of 1750 tons per year to the Clear Creek watershed. All barrens within ¼ mile of Clear Creek would remain closed. The remaining watersheds would see a reduction of approximately 11,670 tons per year over existing conditions providing a significant benefit to riparian animal species and habitat. Under Alternative B, additional sedimentation in the CCMA riparian areas and terraces would occur due to the near doubled open barren acres compared to Alternatives A and C. Sediment yield from routes affecting riparian habitat would be reduced by an average of 9000 tons per year for alternatives A and C, and 7000 tons per year under Alternative B, substantially improving conditions for riparian species.

Impacts to the bald eagle, a BLM sensitive species known to occur within the CCMA will be decreased through the expansion of the research natural area, the restoration of routes and trails, improved water quality through reduced transport of hazardous metals, and the elimination of cross-country travel. This will provide a large contiguous expanse of habitat, contribute to protecting existing habitat, and decrease further habitat fragmentation.

Habitat fragmentation, auditory disturbance, and the probability of being crushed by vehicles will be minimized under Alternative C, followed by Alternative A and B, to species of special management concern within the upland and riparian habitats of the CCMA. The SBMRNA would be expanded to the furthest extent under Alternative C, providing a large contiguous expanse of species habitat within the CCMA that is closed to vehicle traffic. Alternative B provides protection to species habitat while maximizing the extent of OHV recreation opportunities. The additional miles of the route network associated with Alternative B would impact some additional wildlife habitat through increased fragmentation.

### **Proposed Mitigation Measures**

- Develop monitoring and inventory studies to determine status of animal species with the potential to occur within the boundaries of the CCMA. Modify management actions and strategies as new data warrants.
- Continue current monitoring program, and modify management actions and strategies as new data warrants.
- Designated Closed routes would be selected and prioritized for restoration and reclamation to minimize impacts to sensitive species and sensitive species habitats.

### **Alternative D - No Action**

Habitat for all animal species would continue to be impacted as a result of route proliferation and cross-country OHV use, leading to the habitat becoming unusable to the species. Unregulated use and non-compliance would continue to have adverse impacts to sensitive species and their habitat in all communities within the CCMA. The continued erosion of topsoil related to OHV use from roads would contribute 25,000 tons per year in sediment yield and from barrens 14,000 tons per year affecting animal species habitat and riparian areas, resulting in substantial impacts to all species within the CCMA. Impacts to sensitive species and sensitive species habitat would include both indirect damage from non point sources such as erosion, and point sources such as damage from OHV use. Habitat fragmentation would continue, decreasing the quality and usable wildlife habitat available within the CCMA.

Under the proposed Alternative D, No Action, increased sedimentation in the CCMA riparian areas and terraces would continue to occur. These impacts could lead to riparian areas becoming degraded and unusable to species as pools fill, and vegetation becomes covered. Continued degradation of riparian areas would similarly decrease habitat quality for the four BLM sensitive species, foothill yellow-legged frog, two-striped garter snake, and the northwestern and southwestern pond turtles. In upland areas habitat fragmentation would negatively affect the bald eagle and other upland species.

### **Proposed Mitigation Measures**

- Develop monitoring and inventory studies to determine status of animal species with the potential to occur within the boundaries of the CCMA. Modify management actions and strategies as new data warrants.
- Continue current monitoring program, and modify management actions and strategies as new data warrants.

### **4.5.3 Invasive Weeds**

The CCMA has an existing infestation of yellow starthistle (*centaurea solstitiatus*) that is expanding in coverage. At one time yellow starthistle was thought to be intolerant of ultramafic soils, such as those in the CCMA serpentine ACEC, however, ongoing plant surveys indicate the spread up Clear Creek Canyon on serpentine and sedimentary soils. In addition to the increase in yellow starthistle infestation, sensitive species habitat is at risk. Yellow starthistle is most abundant in the oak savannah, stabilized riparian terraces, and sedimentary inclusions.

### **Alternative A: Proposed Action**

The continued spread of invasive, non-native plants, in particular yellow starthistle is common to all alternatives. Yellow starthistle seed is transported on the undercarriage of vehicles (Di'Tomaso et al. 1999, Bossard et al, 2000) and colonization is occurring on both serpentine and non-serpentine soils. Non-serpentine soils contain greater amounts of nutrients necessary for plant growth and are therefore colonized by yellow starthistle at faster rate. Routes and trails that are outside of the serpentine ACEC are at greater risk of infestation than those within the ACEC. Sensitive species habitat could be impacted in the CCMA, including some *Camissonia benitensis* occupied sites. A comprehensive weed management program would be implemented in 2004. Riparian areas and all areas where sedimentary soils are embedded are most vulnerable to invasion.

**Alternative B: Enhanced Recreation** - As described in Alternative A

**Alternative C: Enhanced Resource Protection** - As described in Alternative A

**Alternative D: No Action**

Under Alternative D the substantially larger route network and additional miles on sedimentary soils, along with continuing habitat disturbance would provide greater potential for weed introduction and invasion into areas previously unaffected.

**Proposed Mitigation Measures**

- Implement invasive weed management program.
- Install public vehicle wash facility.

## **4.6 RECREATION RESOURCES**

The CCMA has been an important weekend recreational destination for central California residents for the past 35 years. The recreation resources analyzed under the various alternatives include a variety of casual recreation types, the barren play areas, and the route/trail network. All routes within the CCMA will be designated as open, limited, or closed, and were screened through the criteria in Appendix A and include a designation record and rationale. All routes not designated open or limited, would be designated as closed. All barrens within the CCMA will be designated as open, limited, or closed, and were screened through the criteria in Appendix B, and include a designation record and rationale. All barrens less than 10 acres in size are closed as per the ROD (1999) and would remain so unless specifically designated as open. Within the CCMA Limited Use Area, all casual use would be restricted to designated open or limited routes. Routes selected for analysis in this Plan Amendment were from the existing database of inventoried routes (approximately 440 miles).

The establishment of a designated route system throughout the CCMA would have both positive and negative recreation impacts: Maps, signing and trail maintenance would add a degree of safety and security for those riding in the backcountry, yet fencing projects, routine trail maintenance, and the designated route system would result in a much more regulated environment. These changes would reduce the quality of the recreation experience for some users who value recreating in an environment with few obvious societal restraints and controls. Available camping areas would continue to be congested during the winter use season with conflicts between user groups, particularly during the evening hours when alcohol consumption, noise, illegal fireworks, and gunfire aggravate adjacent users.

This analysis will focus on the differences in recreational opportunities between the four alternatives for the various user groups. Full implementation of any of the alternatives is not expected to result in any changes in the number or type of recreation user, with the exception of seasonal restrictions during the dusty season could limit numbers for that time period. Visitation trends are expected to remain fairly constant with moderate yearly increases. This analysis is based on approximately 50,000 visitors per year.

### **4.6.1 Motorized Vehicle Access Network**

The trail network ranges from 171 trails (245 miles) in Alternative B to 129 trails (203 miles) in Alternative C. Alternative B provides the largest number of trails and miles of routes available for public use. See Appendix A for a detailed list of open, limited, and administrative use only trails and trail closures under the various alternatives. The trails system proposed in the alternatives provide access to the majority of the CCMA that is commonly used today. By implementing the sign plan and providing maps of these routes, the CCMA route system will be easily navigated by the novice or the experienced rider. The new route system could expand, under alternative B, the number of routes mapped and signed up to approximately 280 miles. This would be a 55 percent increase in the miles of routes currently identified (signed and mapped) for public use. The majority of these routes are highly desirable routes, such as single track, all-terrain vehicles (ATV), and jeep trails. The statewide average of these types of trails which are sought after by 4-wheel drive enthusiast and single-track motorcyclists is 16 percent. Under Alternative "B" the CCMA route system provides 195 miles of routes of interest to these OHV users which comprise 80 percent of the total routes available. There are 129 miles of single track and ATV trails (53 percent of total routes), and 66 miles of jeep trails (27 percent of total routes). These routes provide for substantial exploration opportunities for the off road enthusiast, particularly in the remote southeast portion of the CCMA. The 129 miles of single track routes give event (Quicksilver Enduro, Wild Boar, Molina Ghost Run, etc.) holders a variety of course combinations that can be varied from year to year.

There would be some closures of popular riding areas. These areas include Larius Canyon, San Carlos Peak, San Carlos watershed, and Cantua watershed. These unique habitat areas would be protected from off road use by the various alternatives.

#### **Alternative A: Proposed Action**

This alternative provides 139 trails comprising 218 miles of routes ranging from paved roads to single track trails. Under this alternative, the route network includes 111 miles of single track and ATV trails (51 percent of routes), and 60 miles of jeep trails (28 percent of routes). The Alternative A map in Appendix J depicts the location of these routes. Route mileages by alternative and trail type are in Table 2-1. Of the 218 miles of routes open for casual recreation use, nine miles would be limited and the limitation would be no motorcycles. These routes are located on the southern end of the CCMA in the Condon Peak area, and would be limited to reduce off-route travel, route proliferation, and conflicts with other recreation uses. These routes are generally used by hunters on ATV and four-wheel drive vehicles. The remaining 209 miles of routes would be open to all motorized vehicles. The 28 miles of administrative use only routes are comprised of improved and four-wheel drive trail types, and would be restricted to permittees, licensees, rights-of-way holders, the Federal government, and authorized representatives. These routes would not be available for casual recreation use. Routes in Cane, Tucker, Byles, and Baker Canyons, where there is limited public access would be restricted to administrative use.

The additional routes that would be closed under this alternative include single track routes T212 and T242, ATV routes T219 and T171 and jeep routes R010 (from R014 to R013), T153, T154, T155, and T171. T171 and T 219 are routes which provide access in the Condon Peak Area. The primary user group of these routes is hunters and this would affect their ability to disperse within this area, however T221 and T220 would still provide access to a large portion of this area for hunting and other activities. Closure of T171 and T219 would provide opportunities for hiking, equestrian, and other non-motorized uses. The majority of routes within the Larius Creek watershed would be closed under this alternative to protect sensitive species habitat and watershed resources, except for

trails T125 and T126. Most routes in the South Fork Clear Creek watershed would be closed, including a portion of R008 due to high watershed erosion rates and sensitive species habitat.

R010, T153, T154, and T155 provide access through the SBMRNA, closed mine areas, and to areas to the east in the San Carlos Bolsa watershed that have had limited public motorized access. Closing these routes would provide better protection of sensitive species and watershed resources within and adjacent to the RNA. R010 (“Ridge Route”) in particular traverses through the heart of the RNA, and closure of this route would contribute to reducing off-route and cross country travel within the RNA, and protecting the values for which established. Vehicle travel would be restricted to Spanish Lake Road, Sawmill Creek Road, and R013 within the RNA. T212 provides access outside the ACEC into the Cantua Creek watershed, and closing this route would prevent motorized access to this remote area of the CCMA. T242 is currently closed due to resource protection issues along R001 and it would remain closed under this alternative.

While there would be some isolated areas where vehicle travel would be restricted, the 218 mile network of routes would still span the majority of the CCMA and provide a variety of motorized vehicle recreation opportunities, experiences, and challenges. This alternative would continue to provide vehicle access for rockhounding, sightseeing, and wildlife watching. Non-motorized recreation activities would be enhanced through providing more areas for these activities and reduced conflicts with motorized use. Though unlimited motorized exploration of trails would no longer be allowed, the substantial route network in the more remote southeast portion of the CCMA would still provide opportunities for exploration and the challenge of navigating this remote environment. Some historical routes used in enduro and permitted events would no longer be available, however the route network, including 111 miles of ATV/Single Track trails would offer a variety of course combinations that can be varied from year to year.

### **Proposed Mitigation Measures**

- A difficulty rating system would be implemented for all designated open and limited routes. Ratings would be identified on route markers.
- Special Recreation Permit OHV events would continue to be allowed on designated open and limited routes when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL). Events would only be allowed from 1 November through 15 April.
- Install signs identifying the CCMA as a Limited Use Area with all vehicle travel restricted to designated open routes. Clearly mark and identify the designated route network.
- Produce and distribute a new user map to allow recreation users to understand the appropriate type of use and clearly identify where OHV use is permitted.
- Develop a recreation user education and awareness program to inform the public of the concepts of designated use, encourage safe and environmentally responsible behavior, and an understanding of multiple-use management.
- Increase Law Enforcement patrols and use of Law Enforcement response teams to monitor and enforce compliance with designations.

### **Alternative B: Enhanced Recreation**

This alternative provides 182 trails comprising 270 miles of routes ranging from paved roads to single track trails. The Alternative B map in Appendix J depicts the location of these routes. Of the 270 miles of routes, 245 miles would be open for general public use. Under this alternative the route network provides 129 miles of single track and ATV trails (53 percent of total routes), and 66 miles of jeep trails (27 percent of total routes), comprising 80 percent of the total routes available. Fifteen miles would be limited and the limitation would be no motorcycles. These routes are located primarily on the southern end of the CCMA in the Condon Peak area. These routes are generally used by hunters on ATV and four-wheel drive vehicles. The remaining 230 miles of routes would be open to all motorized vehicles.

R010 and T153 would remain open, providing access through the SBMRNA and an alternate means of travel other than Spanish Lake Road to traverse this area. However conflicts with established resource condition objective for this area would likely continue, as off-route and cross country travel have been difficult to control in this area. Additional miles of limited routes for ATV and jeep trails would be designated in the Condon Peak area, providing greater access for hunters in this area. Opportunities for non-motorized recreation in the Condon Peak area would be less under this alternative. T212 provides access outside the ACEC into the Cantua Creek watershed and would be designated open, connecting with T189C to form a loop trail.

Aerial digital imagery would be used to complete the route inventory of those routes not included in the existing database for the CCMA. Upon completion of soil loss assessment, up to an additional 15 percent of the miles of routes under this alternative may be added to the designated route network after evaluation utilizing the criteria developed in this environmental impact statement. This could result in as much as a 282 mile network of routes. Priority would be given for connector routes facilitating loop trails that contribute to the overall route network. The majority of these additional routes would be highly desirable routes, such as single track, all-terrain vehicles (ATV), and jeep trails. This supplement to the designated route network is incorporated under this Alternative.

While there would be some isolated areas where vehicle travel would be restricted, the 245 mile network of routes would still span the majority of the CCMA and provide a variety of motorized vehicle recreation opportunities, experiences, and challenges. This alternative would continue to provide vehicle access for rockhounding, sightseeing, and wildlife watching. Non-motorized recreation activities would be enhanced through providing more areas for these activities and reduced conflicts with motorized use. Though unlimited motorized exploration of trails would no longer be allowed, the substantial route network in the more remote southeast portion of the CCMA would still provide opportunities for exploration and the challenge of navigating this remote environment. Some historical routes used in enduro and permitted events would no longer be available, however the route network, including 129 miles of ATV/Single Track trails would offer a variety of course combinations that can be varied from year to year.

### **Proposed Mitigation Measures**

- R010 and T153 would be corridor fenced the entire length through the RNA and T153 would be fenced on the east side the remaining length to preclude access the RNA.

### **Alternative C: Enhanced Resource Protection**

This alternative provides 129 trails comprising 203 miles of routes ranging from paved roads to single track trails. The Alternative C map in Appendix J depicts the location of these routes. Of the 203 miles of route available for casual recreation use, five miles would be limited and the limitation would be no motorcycles. These routes are primarily located on the southern end of the CCMA in the Condon Peak area. These routes are generally used by hunters on ATV and four-wheel drive vehicles. The remaining 198 miles of routes would be open to all motorized vehicles.

The additional routes that would be closed under this alternative are single track routes T124 (east of R001), T212, T242, T162, and T193, ATV routes T219, T171, and T189 and jeep routes, T153, T154, T155, T171, T220, T221, R010 (from R014 to T151), R012, and R013. T171, T219, T220, and T221 are limited routes which provide access in the Condon Peak area. The primary user group of these routes is hunters and this would affect their ability to disperse within this area. There would be greater opportunity for non-motorized recreation opportunities in the Condon Peak area under this alternative. All routes within the RNA would be closed except for Spanish Lake Road, including T124, T153, T162, R010, R012, and R013. Closing these routes would provide better protection of the sensitive species and watershed resources within the RNA. T189, T193, and T212 provide access outside the ACEC and closing these routes would limit motorized access to this remote area of the CCMA. There would be greater protection of resource values for the San Carlos Bolsa and Cantua watersheds with no motorized access allowed outside of the ACEC. T242 is currently closed due to resource protection issues along R001 and it would remain closed under this alternative.

While there would be isolated areas where vehicle travel would be restricted including the SBMRNA, the 198 mile network of routes would still span the majority of the CCMA and provide a variety of motorized vehicle recreation opportunities, experiences, and challenges. This alternative would continue to provide vehicle access for rockhounding, sightseeing, and wildlife watching. Non-motorized recreation activities would be enhanced through providing more areas for these activities and reduced conflicts with motorized use. Though unlimited motorized exploration of trails would no longer be allowed, the substantial route network in the more remote southeast portion of the CCMA would still provide opportunities for exploration and the challenge of navigating this remote environment. Some historical routes used in enduro and permitted events would no longer be available, and there would be a smaller route network of 103 miles of ATV/Single Track trails to select from that offer a variety of course combinations that can be varied from year to year.

**Proposed Mitigation Measures** – Same as Alternative A.

### **Alternative D: No Action**

This alternative would allow OHV use to occur on over 398 miles of routes ranging from paved roads to single track trails. Currently, the HFO has analyzed over 440 miles of routes throughout the CCMA (see Alternative D map in Appendix J). These routes would remain open for public use. Although it seems that this would provide for more access throughout the CCMA, the majority of these additional routes are duplicative of routes that would be open under the proposed action. Many of these additional routes are dead-end mining prospects or single track, highly eroded trails that would be difficult to traverse and extremely difficult to maintain. Non-motorized recreation opportunities would not benefit to any appreciable degree.

Unregulated use on the complete inventory of routes has conflicted with established management objectives, and contributed to non-compliant use, route proliferation, and trespass in closed areas that

have reached levels which threaten closure of the CCMA. Without completing route designations and allowing use on all routes unless signed or physically closed; this management strategy has proved extremely difficult at best. Problems with enforcement, compliance, route maintenance of the entire inventory, signing, and providing a clearly understandable route network would continue. Though there would be a quantitative (miles of routes) benefit under this alternative, over time it is likely the quality of experience would diminish.

When considering the various resource sensitivities (fragile soils and ecosystems, riparian areas, sensitive species), protection of Federally threatened species, closure of abandoned mine lands, enforcement of designations, and the history of relatively intensive OHV use; these factors dictate a relatively controlled access strategy and designated route system to meet resource condition objectives, and provide for the protection of these resources and the public health. Not completing route designations as part of the overall CCMA designation as a Limited Use area, does not appear to provide the necessary management tools for this particular situation and provide an acceptable level of manageability for an OHV route network within the CCMA. Manageability is critical to meeting CFR requirements, particularly those in 43 CFR 8342.1, and to provide for OHV opportunities on a sustained basis while protecting the environment and sensitive resources.

### **Proposed Mitigation Measures**

- Special Recreation Permit OHV events would continue to be allowed on the existing route inventory when airborne asbestos emissions readings are below the OSHA personal exposure limit (PEL). Events would only be allowed from 1 November through 15 April.

### **4.6.2 Barrens**

#### **Alternative A and C. Proposed Action and Enhanced Resource Protection**

This alternative provides 466 acres of open play areas for public use (see Alternative A and C maps in Appendix J). There would be an 83 percent reduction in barrens available for recreation use from the complete barren inventory (2800 acres). However many of these barrens in the inventory are already closed (RNA, mine areas) or on private or State land. Barrens considered for open designation would be limited to those within the Clear Creek watershed. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, which are primarily on the south side of the canyon in high erosion sub-watersheds. These barrens are in close proximity to the majority of recreation use. Limiting use to barrens in the Clear Creek watershed would confine impacts to one watershed rather than contributing to watershed impacts throughout the CCMA. This would facilitate focusing of any mitigation measures related to OHV use to a smaller area. Law enforcement would benefit by having a smaller area in closer proximity to monitor compliance with barren designations. OHV recreation users would know to travel to this general area for hill climbs and open play activities. These areas would be easily marked and mapped. The novice rider would be able to distinguish the boundaries of the open play areas, therefore remaining in compliance with BLM rules and regulations. Concentrating use to this set of barrens in the Clear Creek watershed could lead to potential overcrowding and user conflicts, however a substantial portion of barren OHV activity already occurs there. Barrens in the Larious Canyon watershed would be closed, limiting open play riding opportunities in that area. It would be readily identifiable to the recreation user that outside the Clear Creek watershed, OHV use is not authorized on any barrens. In addition many barrens outside the Clear Creek watershed have had less intensive OHV use and therefore are more suitable for restoration.

### **Proposed Mitigation Measures**

- Install signs identifying the CCMA as a Limited Use Area with all vehicle travel restricted to designated open routes and areas. Clearly mark and identify the designated barren areas.
- Produce and distribute a new user map to allow recreation users to understand the appropriate type of use and clearly identify where OHV use is permitted.
- Develop a recreation user education and awareness program to inform the public of the concepts of designated use, encourage safe and environmentally responsible behavior, and an understanding of multiple-use management.
- Increase Law Enforcement patrols and use of Law Enforcement response teams to monitor and enforce compliance with designations.
- Construct fence to control unauthorized use of closed barrens, including adjacent to R002 and T113.

### **Alternative B: Enhanced Recreation Opportunities**

This alternative provides 813 acres of open play areas for public use (see Alternative B map in Appendix J). There would be a 71 percent reduction in barrens available for recreation use from the complete barren inventory (2800 acres). However many of these barrens in the inventory are already closed (RNA, mine areas) or on private or State land. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed, which are primarily on the south side of the canyon in high erosion sub-watersheds. This alternative would provide barren OHV opportunities in three general areas; Clear Creek Canyon, east fork of Larious Canyon, and the east central CCMA (Sawmill Creek and San Benito River watersheds). The “Bowl” barren area adjacent to the SBMRNA would also be included in this alternative. This would disperse the barren OHV opportunities throughout a broader area of the CCMA, and may provide for less congestion in any one area. However, barrens in the eastern portion of the CCMA designated under this alternative, receive relatively low levels of use, and may not contribute much to reducing potential congestion in other areas. Riders would be able to choose between these general areas for hill climbs and open play activities. Distinguishing the open barren areas and boundaries where use is authorized in the more remote eastern portion of the CCMA may be more difficult for the recreation user, and contribute to enforcement problems and compliance with BLM rules and regulations. Additional signing and fencing could diminish the recreation experience for some users seeking a more unregulated experience and wildland character of the area.

**Proposed Mitigation Measures** – Same as Alternative A

### **Alternative D: No Action**

This alternative would allow OHV use to occur on up to 2800 acres of barren play areas. This includes barrens 10 acres in size and larger (barren areas smaller than 10 acres would remain closed.) These barrens would be dispersed throughout the CCMA (see Alternative D map in Appendix J). Distinguishing the open barren areas and boundaries where use is authorized in the CCMA may be more difficult for the recreation user, and contribute to enforcement problems and compliance with BLM rules and regulations. These open play areas would be difficult to distinguish from the rest of the barren areas that are closed within the CCMA. The average rider would have a difficult time

deciding where an open play area begins or ends. Unregulated use on the complete inventory of barrens has conflicted with established management objectives, and would continue to contribute to non-compliant use, route proliferation, and trespass in closed areas.

### **Proposed Mitigation Measures**

- Prevent vehicle trespass into the SBMRNA through construction of barriers, signing, and Law Enforcement patrols.
- Prevent unauthorized OHV access into riparian areas through construction of barriers.

### **4.6.3 Non-OHV Recreation Opportunities**

Non-OHV recreational opportunities include camping, hobby gem/mineral collecting, hunting, hiking/backpacking, wildflower hikes, wildlife watching, hang gliding, geocaching, and sightseeing. These users are adequately provided for in all alternatives proposed. The majority of this type of use occurs along the major routes which would remain in all alternatives. These user groups also spend a large amount of their time on foot, traversing the entire CCMA. This would still occur and even though a trail is closed to motorized access it would still be open for foot traffic. There are some trail closures that could limit the dispersion of these users into certain areas. Camping opportunities do differ by alternative but would still provide for quality camping experiences.

#### **Alternative A: Proposed Action**

This alternative provides 139 trails comprising 218 miles of routes ranging from paved roads to single track trails. This route network would provide access throughout the CCMA for a wide variety of non-motorized recreation activities. Two routes would be closed in the Condon Peak area; however several miles of route would remain open to 4-wheeled vehicles, providing access to a substantial portion of traditional hunting areas. The Condon Peak hiking trail would be closed to motor vehicles and provide an improved hiking experience. Passive recreation opportunities (hiking/backpacking, wildlife watching, nature study) would be enhanced under this alternative with areas free of motorized disturbance and user conflicts. Non-motorized recreation activities and opportunities for ecological study would be significantly improved in the SBMRNA.

#### **Alternative B: Enhanced Recreation**

This alternative provides 171 trails comprising 245 miles of routes ranging from paved roads to single track trails. This route network would provide access throughout the CCMA for a wide variety of non-motorized recreation activities. Hunters would retain access to most current hunting areas. Passive recreation opportunities (hiking/backpacking, wildlife watching, nature study) would benefit under this alternative with some areas free of motorized disturbance and user conflicts.

#### **Alternative C: Enhanced Resource Protection**

This alternative provides 129 trails comprising 203 miles of routes ranging from paved roads to single track trails. This route network would provide access throughout the CCMA for a wide variety of non-motorized recreation activities. Most routes south of Condon Peak would be closed, however several miles of route would remain open to 4-wheeled vehicles, providing access to some portion of traditional hunting areas. The Condon Peak hiking trail would be closed to motor vehicles and additional route closure south of Condon Peak would provide for improved hiking experience and

other non-motorized activities. Passive recreation opportunities (hiking/backpacking, wildlife watching, nature study) would be enhanced under this alternative with areas free of motorized disturbance and user conflicts. Non-motorized recreation activities and opportunities for ecological study would be significantly improved in the SBMRNA, with few user conflicts, and Spanish Lake Road providing the only vehicle access.

#### **Alternative D: No Action**

This alternative would allow use on over 398 miles of trails. The impact to these user groups would be directly related to the ability of the HFO to adequately maintain all of these routes. The large number of routes and miles of trails would be impossible to maintain. Maintenance would have to be concentrated on the major routes. Even though there are more routes available, they would not be maintained to a standard needed for use by 2-wheeled and 4-wheeled vehicles. This would limit the use by some members of these user groups.

## **4.7 CULTURAL RESOURCES**

The CCMA was previously inventoried for cultural resources in order to generate baseline data to be used in CCMA planning efforts. The report was entitled “Archeological Survey of the Clear Creek ORV Project, Bureau of Land Management,” completed under contract (No. 04040-PH5-120) in May 1975 by L. Kyle Napton of the Institute for Archaeological Research, California State University, Stanislaus (formerly California State College). The inventory conformed to the BLM Class II sample survey (refer to BLM Manual Series 8100). Based upon that report and other data accumulated over the years, a comprehensive cultural resources management strategy for the region has been developed (refer to CCMA RMP: 1986 and 1995). As such, protection efforts for cultural resources include:

- site avoidance (route design and use)
- physical barriers (fenced out areas or gated roads)
- site monitoring by BLM personnel (Archeologists, Law Enforcement Officers, Park Rangers, some Implementation Team members) and volunteers (members of the CASSP program)
- concurrent review of proposed undertakings to address potential effects to sites or other cultural resources.

Subsequent inventory efforts have been and are currently being performed on a project-specific basis as needed, specifically when a proposed project or event moves beyond those projects/activities not included in the “Exempt Undertakings” section, outlined in Appendix C of the 1998 Programmatic Agreement (PA) between the California Bureau of Land Management (BLM) and the California State Historic Preservation Officer (SHPO). The 1998 PA is designed for the 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” (1998:2). The PA meets the Section 106 requirements of the 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” (NRHP) as cited in 36CFR800.1(a).

There are at least two dozen prehistoric and historic archeological sites and localities in the CCMA. Many of these sites and localities have been affected over the past years by mining use and reuse,

OHV-related vandalism and erosion, and begin neglect. The most visible archeological resources are the mining landscape and related features from the past boom and bust cycles related to mercury extraction and beneficiation (cinnabar and metacinnabar ores). The remnants of these historic mining resources are being evaluated for their cultural values as part of the Abandoned Mine Lands (AML) inventories concurrent with the PA and National Environmental Policy Act (NEPA).

Although the creation of campsites in the CCMA has affected several prehistoric archeological sites (lithic scatters), the most significant impacts have been from illegal and uncontrolled artifact collection. Collectors have probably removed most of the outstanding examples of Native Californian workmanship from the CCMA, but perhaps there are more examples of their crafts in situ. Likewise, historic mine sites have been collected from or used as firewood and/or target practice by the camping public. A program of archeological site monitoring for parts of the CCMA was implemented by the BLM in 1989 to observe changes to archeological sites from either human or natural causes. Based upon a successful program after four years, the monitoring program was extended and similar efforts were concentrated at other sites.

Overall, the sites appear to be in a relatively static condition. No new observable impacts or changes to the sites have occurred since monitoring has been implemented. For example, CA-SBn-167 has been fenced out from the public on either side of Clear Creek road. CA-SBn-170 was fenced out from the public (FY1999) to protect the archeological resource and T&E botanical habitat from unauthorized OHV access. No new impacts to either site have been observed since the fences' construction.

The guidance for successful routes designation within the CCMA has been outlined in the previous chapter of this DEIS (Chapter 2 Description of Proposed Action and Alternatives) and in the attached appendices (Appendix C Implementation Plan and Appendix D Best Management Practices). By adhering to the "guiding criteria" affecting access to routes (Chapter 2.2, National Historic Preservation Act), utilizing applicable management guidance established by the BLM (Chapter 2.3, the BLM CA 1998 PA for Cultural Resources), and relying on a solid route/barren designation methodology that balances science and user need (Chapter 2.4 and 2.4.1, cultural and paleontological resources review as a potential resource concern, TIER 1), route and barren designation for the CCMA should not adversely affect any cultural resources.

### **Alternative A: Proposed Action**

Under the Preferred Action (Chapter 2.5, Alternative A), using the current database of known cultural (and paleontological) resources for the CCMA should be adequate for establishing the route designation process. Incorporating the strategies outlined in Appendices C and D will also provide the tools and mechanisms for maintaining designated routes while affording cultural resource protection. Of course, as new information is gathered from archeological inventory and excavation and new ethnographic data is revealed from Native American concerns, future undertakings and projects within the CCMA would address this new data and management strategies would change if warranted (also see Chapter 2.10 Sensitive Resource Requirements subpart c).

### **Alternative B: Enhanced Recreation**

Under the Enhanced Recreation alternative (Chapter 2.6, Alternative B), which would place a "high priority on motorized access," cultural resources in the CCMA would still be adequately protected under the various mechanisms described above in the Preferred Action. However, there would be a

greater probability of impacting (directly or indirectly) the areas that are currently prohibited from motorized access.

#### **Alternative C: Enhanced Resource Protection**

Under the Enhanced Resource Protection alternative (Chapter 2.7, Alternative C), there would be a “higher priority on environmental protection.” The limitation of motorized access throughout the CCMA favors archeological protection, as this alternative lessens the chances of impacts (direct or indirect) from OHV uses. The SBMRNA would be protected the most with no motorized vehicle access allowed throughout the RNA except for Spanish Lake Road.

#### **Alternative D: No Action**

Under the No Action alternative (Chapter 2.8, Alternative D), the OHV characteristics of the CCMA would largely remain the same, at least for the short-term. In the long-term, the lack of a designated trail system may increase the chance for route proliferation, thus unintentionally increasing the risk that recreational users will damage archeological sites that are currently off-route or adjacent to an existing route.

## **4.8 SPECIAL MANAGEMENT AREAS**

### **4.8.1 Serpentine Area of Critical Environmental Concern**

Environmental consequences related to concerns associated with the naturally occurring asbestos within the serpentine soils and the unique vegetation and forest types associated with serpentine soil, are discussed throughout Chapter Four in the corresponding resource chapter sections.

### **4.8.2 San Benito Mountain Research Natural Area (SBMRNA)**

Expansion of the San Benito Mountain Research Natural Area would result in high-quality areas containing nearly all of the CCMA's unique habitats and species being included in the RNA. There would also be an increase in the overall integrity of the RNA due to boundary adjustments which would include whole sub-watersheds instead of only portions of them. A RNA management plan will be completed within one year, establishing detailed management objectives and prescriptions for the area. An interim management plan is in Appendix E providing a framework and guidance for management of the RNA, identifying preliminary management objectives, monitoring components, and allowable uses. All alternatives will provide special resource management protection for this unique area and contribute to fulfilling the management goals for the RNA: 1) to ensure survival of the pine forests in the CCMA; 2) to maintain the vegetation and soil resources in as natural a condition as possible; and 3) to provide opportunities for scientific and academic research in this unique ecosystem. Values for scientific research and resource protection will be enhanced through the following action:

- Added upland habitat that would result in the inclusion of the majority of the upper Clear Creek watershed, which supports significant forest stands, and all the pine forest and woodland on the northern and eastern perimeters of the existing Natural Area boundaries.

- Within the expanded boundaries of the San Benito Mountain Research Natural Area, three of the San Benito evening primrose populations would be protected instead of the one currently protected, the number of acres of occupied primrose terrace habitat would increase to thirteen acres from one acre, and three miles of streambank primrose habitat along upper Clear Creek would be protected.
- Within the expanded boundaries of the San Benito Mountain Natural Area, the number of known populations of Category 2 candidate plant species would be increased to eight (from two) and an unknown amount of these species' habitat would be added.
- An approximately one-half mile-wide, two mile-long area of transitional habitat between the serpentine and non-serpentine blocks north of the current Natural Area boundaries would be included.
- Seven and one-half miles of serpentine riparian habitat within the Natural Area would be protected. This increase would include four miles of upper Clear Creek.

### **Alternative A: Proposed Action**

The expansion of the San Benito Mountain Research Natural Area to 3991 acres would increase protection of the existing unique Southern Ultramafic Jeffrey Pine forest habitat. The added upland habitat would include most of the upper Clear Creek, San Carlos Creek, and Sawmill Creek watersheds; all of which support significant forest stands. All of the pine forest and woodland beyond the northern and eastern perimeters of the existing SBMRNA would be protected in the transition zone between the serpentine and non-serpentine areas. In addition to providing a high value for scientific study, this transition zone also contains one of only two known populations of the Mt. Diablo phacelia within the CCMA. Open use or cross-country travel within the forested ecosystem would be prohibited, which would assist in forest regeneration and sensitive plant and animal protection.

Inclusion of buffer zones contiguous to the existing RNA would enhance the integrity of the Southern Ultramafic Jeffrey Pine Forest and the San Benito Mountain Research Natural Area, and would aid in preventing OHV trespass into sensitive areas. The BLM would protect the SBMRNA from any future mineral exploration to ensure long-term protection of this unique forest ecosystem. The overall integrity of the RNA would increase because boundary adjustments would include whole sub-watersheds instead of only portions of them.

R010, T154, and T155 would be closed to OHV recreation use resulting in significant reductions in off-route and cross country travel in these areas, thus affording greater protection to the plant communities within the SBMRNA.

Within the expanded boundaries of the SBMRNA, three of the known San Benito evening primrose populations would be protected instead of the one currently protected; and the number of acres of occupied primrose terrace habitat would increase to thirteen acres from one acre. Three additional miles of streambank primrose habitat along upper Clear Creek would be incorporated into the RNA, furthering the long-term protection of this species.

### **Proposed Mitigation Measures**

- Portions of Clear Creek, Sawmill Creek and San Carlos Creek would be managed for introducing the San Benito evening-primrose into suitable habitat.
- All populations of the San Benito evening-primrose and protection measures in place would be monitored for compliance relating to OHV trespass and adaptive management would determine additional management actions to protect this species.
- Designated Closed routes would be selected and prioritized for restoration and reclamation to minimize impacts to vegetation communities.
- California State Soils Loss Standards and Monitoring would be implemented on all designated open routes and surveys completed on an annual basis.
- BLM would continue to monitor water quality, soil erosion, and sediment conditions within the watersheds of the CCMA. The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production.
- Implement barren area protection plan to minimize off-site sediment transport through repair of erosion scars, construction of drainage improvements, sediment control and trapping treatments, and re-vegetation of vegetative buffers. All barrens within the RNA would be selected and prioritized for restoration and reclamation employing these same techniques.
- Construct fence and barriers to protect boundaries and preclude unauthorized motorized access and trespass into the RNA. Complete corridor fencing of Spanish Lake Road (R011) through the RNA.
- Monitor all unprotected populations of rayless layia, Mount Diablo phacelia, and talus fritillary for possible adverse impacts from vehicles and other uses and implement protective actions as warranted.
- Inventory suitable habitat for all sensitive plant species
- Monitor any new populations of these species documented during future inventories for adverse impacts and implement protective actions as warranted.
- Implement long-term studies to determine how disturbances such as human use, environmental conditions, and erosion, impact the viability of the above species. Employ adaptive management in the CCMA to help improve conditions for these species.

### **Alternative B: Enhanced Recreation**

The expansion of the San Benito Mountain Research Natural Area to 3522 acres would increase protection of the existing unique Southern Ultramafic Jeffrey Pine forest habitat. This is from 439 to 1058 less acres than the other action alternatives. The added upland habitat would include most of the upper Clear Creek watershed which supports significant forest stands. No additional acreage would be added in the Sawmill Creek watershed, and only a very small amount of acreage would be

added in the San Carlos Creek watershed, providing less protection to the pine forest and woodland in these areas, and values for which the RNA was established. A transition zone between the serpentine and non-serpentine areas on the east side of the SBMRNA would provide additional protection for this vegetation community. Open use within the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. One, of only two known populations of the Mt. Diablo phacelia within the CCMA would not be included in the RNA.

There would be only a slight reduction in motorized access in the RNA, with T155 and a few other small trail segments, the only routes closed compared with existing conditions. The Ridge Route (R010) would remain open and unless completely corridor fenced would likely continue to contribute to off-route travel and associated impacts within the RNA, and particularly to protected populations of the San Benito evening-primrose in Upper Clear Creek Canyon. T153 would also need to be corridor fenced to prevent unauthorized use and afford protection to sensitive resources within the RNA.

Open OHV use in the “Bowl” (southeast corner of RNA) would continue to contribute to impacts to this barren-Jeffrey pine forest mosaic, by allowing use in and contiguous to this sensitive Jeffrey pine vegetation community, unless substantial mitigation measures were implemented. OHV in this area would need to be controlled to prevent access into the adjacent RNA.

Fewer whole sub-watersheds would be included in the RNA in this alternative. Within the expanded boundaries of the SBMRNA, three of the known San Benito evening primrose populations would be protected instead of the one currently protected; and the number of acres of primrose terrace habitat would increase to thirteen acres from one acre. Three additional miles of streambank primrose habitat in Upper Clear Creek Canyon would be incorporated into the RNA, furthering the long-term protection of this species. A substantial amount of boundary and corridor fencing would be necessary, along with increased law enforcement, signing and public education to control open use within the administratively closed SBMRNA.

**Proposed Mitigation Measures** – Same as Alternative A, except as noted

- Corridor fence R010 and T153 (7 miles)
- Fence the north and west side of the “Bowl” to prevent cross country travel into the RNA and control impacts to the Southern Ultramafic Jeffrey Pine forest.

### **Alternative C: Enhanced Resource Protection**

The expansion of the San Benito Mountain Research Natural Area to 4580 acres would increase protection of the existing unique Southern Ultramafic Jeffrey Pine forest habitat and provide the greatest protection for the values for which the RNA was established. The added upland habitat would include most of the upper Clear Creek, Sawmill Creek watersheds, and the largest portion of the San Carlos watershed; all of which support significant forest stands and important riparian habitat. All of the pine forest and woodland beyond the northern and eastern perimeters of the existing SBMRNA would be protected in the transition zone between the serpentine and non-serpentine areas. In addition to providing a high value for scientific study, this transition zone also contains one of only two known populations of the Mt. Diablo phacelia within the CCMA. Open use or cross-country travel within the forested ecosystem would be prohibited, which would assist in forest regeneration and sensitive plant and animal protection.

Inclusion of buffer zones contiguous to the existing RNA would enhance the integrity of the Southern Ultramafic Jeffrey Pine Forest and the San Benito Mountain Research Natural Area, and would aid in preventing OHV trespass into sensitive areas. The BLM would protect the SBMRNA from any future mineral exploration to ensure long-term protection of this unique forest ecosystem. The overall integrity of the RNA would increase because boundary adjustments would include the largest portion of whole sub-watersheds, instead of only portions of them.

All route would be closed to OHV use except for Spanish Lake Road (R011) resulting in significant reductions in off-route and cross country travel in these areas, thus affording greatest protection to the plant communities within the SBMRNA.

Within the expanded boundaries of the SBMRNA, three of the known San Benito evening primrose populations would be protected instead of the one currently protected; and the number of acres of primrose terrace habitat would increase to thirteen acres from one acre. Three additional miles of streambank primrose habitat along upper Clear Creek would be incorporated into the RNA, furthering the long-term protection of this species.

**Proposed Mitigation Measures** – Same as Alternative A, except additional corridor fencing for routes within the RNA would not be necessary.

#### **Alternative D: No Action**

The SBMRNA would be expanded to approximately 3580 acres, providing some additional protection for the Southern Ultramafic Jeffrey Pine Forest and values for which the RNA was established. The added habitat within the RNA would include most of the upper Clear Creek watershed which supports significant forest stands and habitat for the San Benito evening-primrose. The Sawmill Creek watershed and San Carlos Creek watershed would not be fully protected. A transition zone between the serpentine and non-serpentine areas on the east side of the SBMRNA would provide some additional protection for the RNA. Open OHV use within the RNA portion of the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. There would be no reduction in motorized routes in this community, directly affecting the ability to minimize impacts from continued OHV use and protect the unique ecosystem and value of the RNA. The Ridge Route (R010) would remain open and unless completely corridor fenced would likely continue to contribute to off-route travel and associated impacts within the RNA.

### **4.8.3 San Benito Wilderness Study Area**

In all alternatives, the BLM's management policy will continue resource uses on lands under wilderness review in a manner that maintains the area's suitability for preservation as wilderness, and in accordance with the Interim Management Policy (IMP) for Lands under Wilderness Review (H-8550-1).

## **4.9 SOCIAL AND ECONOMIC CONDITIONS**

### **4.9.1 Socio-Economic**

The Social impacts relate to the effects to social well being for all alternatives. The types of impacts that could affect social well being include the types and quantities of the recreation experience that is

available. It may also include the perception of conflict concerning resource use and an individuals decisions relating to their experience. None of the alternatives are expected to affect the demographics of the region described in the Affected Environment (Chapter Three). The affects on social trends included in the affected environment are expected to be the same for all alternatives. None of the alternatives are expected to change the economics of San Benito County or the extended 21 county visitor use region.

For the discussion of social and economic impacts on people, this section treats the five-county area that covers San Benito County and its adjacent counties. Over the next forty years, the human environment will change greatly in California and in the region around the CCMA. The rate of population growth between 2000 and 2010 in the region will slightly exceed the rate of population growth for California as a whole. San Benito County will have the fastest rate of growth among counties but will continue to remain the least populated county in the CCMA region. San Benito County will have a projected growth to a population in 2040 that is just one-quarter of the projected population for the next smallest county in the region, Merced County. Based on current land use patterns, most of the growth would be concentrated in the northern quarter of the county.

Table 6 – Population Growth in San Benito and Adjacent Counties

County	Population July 1, 2000	Estimated Population Jan 1, 2003	Estimated Population July 1, 2010	Percent Increase 2000-2010	Population Est. July 1, 2040	Percent Increase 2000-2040
Fresno	811,179	841,400	953,457	17.5percent	1,521,360	87.5percent
Merced	218,256	225,100	264,398	22.8percent	460,020	113.7percent
Monterey	401,886	415,800	479,638	19.3percent	855,213	112.8percent
San Benito	51,853	56,300	68,040	31.2percent	114,922	121.6percent
Santa Clara	1,763,252	1,729,900	2,021,417	14.6percent	2,595,253	47.2percent
<b>Total</b>	3,243,426	3,268,500	3,786,972	16.8percent	5,546,768	71.0percent
<b>All California</b>	34,653,395	35,590,605	39,957,616	15.3percent	58,731,006	69.5percent

Source: California Department of Finance, Demographic Research Unit, County Population Projections (1998) at <http://www.dof.ca.gov/HTML/DEMOGRAP/repndat.htm#estimates>

For many people, an important feature of San Benito County is its open space, with beautiful vistas of oak savannah ranch lands, and hills and mountains covered with mixed conifer and hardwood forests. Popular demand for open space in which to recreate and to relax will grow as the populations in adjacent counties grow. BLM will need to continue contributing to maintaining open space for the American people. It can do this in two ways: (1) promoting nature resource stewardship that conserves landscapes and ecosystems that American people wish to spend time; and (2) supporting ranchers and other private landowners in San Benito economically through grazing allotments, rights of way, and other carefully conceived developments to maintain open space and rural countryside on their lands.

In the region surrounding the CCMA there will continue to be areas having a higher population density than the rest of California. The CCMA will provide a significant getaway for many more people and especially for the largely urban residents in the future Santa Clara County. Although San

Benito and Santa Clara counties have nearly the same area in square miles, Santa Clara County will have an estimated population density that is 24 times greater than San Benito County in 2040.

Table 7 – Population Densities of People in San Benito and Adjacent Counties, 2000 to 2040

County	Density 2000	Estimated Density 2003	Estimated Density 2010	Estimated Density 2040	County Area (Square Miles)
Fresno	134.8	139.8	158.4	252.8	6,017.4
Merced	109.2	114.2	134.1	233.3	1,971.9
Monterey	106.6	110.3	127.2	226.8	3,771.1
San Benito	37.3	40.5	48.9	82.6	1,390.8
Santa Clara	1352.2	1326.6	1550.2	1990.2	1,304.0
<b>Total</b>	224.4	226.1	262.0	383.7	14,455.2
<b>All California</b>	211.7	217.4	244.1	358.8	163,695.5

Sources: California Department of Finance, Demographic Research Unit, County Population Projections (1998) at <http://www.dof.ca.gov/HTML/DEMOGRAP/rependat.htm#estimates>; California Digital Library at <http://countingcalifornia.cdlib.org/pdfdata/csa02/A01>

This DEIS assumes that the number of visitors to the CCMA remains at 50,000 people annually with moderate increases into the foreseeable future. Restricting access may be necessary if significant increases in visitation occur over a number of years. Methods available to BLM could include: restricting access once a threshold number of visitors arrive on any given weekend, charging admission fees, or requiring an annual pass based on a lottery system. The scope of this DEIS does not address the options for maintaining the number of visitors at 50,000 annually. But, the future needs of people for access to the CCMA may require BLM to adapt management to provide the best services to a growing population.

### **Alternative A: Proposed Action**

This alternative would result in a decrease in the routes and areas available for OHV recreation, though it is not anticipated that this would result in a curtailment of OHV recreation related activities. Field observations indicate that the majority of OHV recreation use occurs within the designated route network proposed in this alternative. It is expected that this alternative would support current user levels and visitation with slight increases. With projected trends in population increases and OHV registrations, this alternative would not likely support substantial increases in OHV recreation use over the long term. The projected growth rate of OHV recreation use may be somewhat lower than in the past, due to the perception that there may be less recreation opportunities for OHV use. Impacts from potential implementation of the Recreation Fee Demonstration program related to visitor use fees, are not expected to be significant, as fees would be comparable to those collected at other OHV recreation areas.

The BLM has not estimated the economic benefits generated from recreation-related expenditures by visitors to the Management Area. Studies have been conducted by the State Off-Highway Vehicle Commission and California State Parks to determine expenditures by visitors to OHV recreation areas. These studies indicated that the average OHV recreation user expended about \$50 per visitor day. Applying these figures to Clear Creek users, conservative estimates would indicate that off-road-vehicle recreation use in the area could contribute as much as \$2.5 million annually to the

regional economy. Much of the economic benefit for income and employment from people's expenditures for motorized recreation appears closer to the urban homes of visitors to the Management Area than in the communities near the Management Area. Purchases of vehicles for recreation use are prime examples are big-ticket expenditures that occur at considerable distances from the Area. Motorcycles are popular vehicles for motorized recreation in the Management Area. Within the visitor use region, motorcycle retail outlets concentrate close to their customers and frequently cluster as the result of zoning. The region supports approximately 1030 jobs in retail motorcycle businesses. Communities with comparatively high employment in retail motorcycle sales within the region are most likely to have impacts if cumulative changes occur in access to motorized recreation on public lands, including the Management Area. The BLM is not able at present to state the magnitude of economic impacts to vehicle sales and traveling costs on the basis on how the different alternatives in this DEIS affect recreation access and use of the Management Area. However, the geographic areas most likely to have economic impacts are those currently with high numbers of employees in retail motorcycle sales, within the region. With visitor use levels remaining fairly constant or experiencing slight increases, economic impacts are not expected to negatively affect current local or regional sales and purchases of OHV equipment or related supplies. Enduro and other Special Recreation Permit type events would continue to take place, and the associated economic benefits from these events would be maintained. Closure of some routes and areas to motorized use could result in increases in non-motorized recreation activities and associated economic benefits.

Rural and wildland landscapes are becoming increasingly less common as urbanization expands, especially in the San Francisco Bay Area, Central Coast communities, and in the San Joaquin Valley. The wildland experiences in the Clear Creek Management Area are increasingly valuable as the supply of open space decreases in the visitor shed. Even though the designated open route system is less than the entire inventoried network, recreation users would still be able to experience solitude, the wildlands character, and a sense of exploration, due to the size of the area and the extensive open route network that would be provided. This reduction of routes would benefit the non-motorized recreation experience and reduce user conflicts between motorized and non-motorized recreation use.

#### **Alternative B: Enhanced Recreation**

This alternative would result in a decrease in the routes and areas available for OHV recreation, though it is not anticipated that this would result in a curtailment of OHV recreation related activities. Environmental impacts related to social and economic conditions would be as described for Alternative A, except as specifically noted. The primary difference in impacts from Alternative A, would be the potential for slightly increased user conflicts with non-motorized recreation activities, primarily within the RNA. An increased emphasis on providing additional recreation facilities, could contribute to meeting growth in recreation demand for the area. The proposed route network provides for relatively undiminished camping opportunities throughout the planning area.

#### **Alternative C: Enhanced Resource Protection**

This alternative would result in a decrease in the routes and areas available for OHV recreation, though it is not anticipated that this would result in a curtailment of OHV recreation related activities. Environmental impacts related to social and economic conditions would be as described for Alternative A, except as specifically noted. The primary difference in impacts from Alternative A, would be in the reduction of user conflicts with non-motorized recreation activities, primarily within the RNA.

### **Alternative D: No Action**

This alternative would allow OHV use to occur on the existing inventory of routes, including 398 miles of unpaved roads and trails and 2800 acres of barren play areas. It is not anticipated that this would result in any significant increase in OHV recreation use, or corresponding increase in economic benefits to the region. Environmental impacts related to social and economic conditions would be as described for Alternative A, except as specifically noted. The primary difference in impacts from all alternatives, would be in increased user conflicts with non-motorized recreation activities throughout the CCMA. This alternative would contribute to a greater degree to those values related to wildland experience and sense of exploration. This alternative would increase the perception of conflict concerning resource use and the condition of public lands, the sustainability of OHV recreation in the CCMA, and the ability to provide sufficient protection of natural resources and watershed values.

### **4.9.2 Environmental Justice**

The BLM has analyzed the effect of its actions related to the environment which include ecological, cultural, human health, and economic or social impact. None of the alternatives are expected to have disproportionately adverse impacts on minority or low-income populations. Individuals of all social and economic backgrounds have access to the designated routes and areas within the CCMA. There are presently no fees associated with general public recreation use of the CCMA. Should a user fee be implemented under authority of the Recreation Fee Demonstration program, fees would be comparable to fees charged by other agencies. It is possible that use of Hollister Hills State Vehicle Recreation Area may increase as some users find that increased regulations, lack of recreation facilities and camping areas, and the additional driving distance make Clear Creek a less desirable destination than Hollister Hills.

The analysis of green sticker permit holders from the California Department of Motor Vehicles with Census 2000 data showed that owners of green-sticker off-highway vehicles tend to come from communities very similar to all communities within the visitor shed for the CCMA, except for one feature. Communities with high percentages of OHV green-sticker permit holders have considerably higher shares of populations of Caucasians that the population has a whole in the visitor shed.

At present, the BLM has no reliable data on the cultural heritage and race of the visitors to the CCMA. Under Presidential Decree [insert here], the BLM obligates itself to ensuring that the services that it provides to the American people do not unfairly favor one group over the other based on economical, cultural, or racial backgrounds. Projections of the cultural and racial background of residents in the CCMA region show that Hispanics will comprise nearly one-half the populations and Asian American / Pacific Islanders will comprise more than a quarter of the future population. If OHV recreation remains a preference principally of white residents of the region, the BLM must eventually adopt management that also meets the other 75 percent of the future population in the CCMA region. Likewise, BLM currently has little information about whether the preferences for recreation among residents from differing cultural or racial backgrounds are indeed different. Information from BLM lands in southern California (Chavez 1999 – get citation from the Meccacopia) would indicate that sensitivity to diverse population groups is critical to meeting the needs of regional residents fairly.

Table 8 – Project composition of residents in the CCMA region by cultural heritage or race, 2000 – 2040

County	Hispanic American			Asian American / Pacific Islander		
	2000	2010	2040	2000	2010	2040
Fresno	39.3percent	42.3percent	51.6percent	5.2percent	12.0percent	15.2percent
Merced	36.4percent	40.4percent	51.5percent	10.8percent	14.1percent	19.7percent
Monterey	41.1percent	52.0percent	79.2percent	7.3percent	7.1percent	5.1percent
San Benito	42.6percent	41.5percent	46.5percent	2.2percent	2.6percent	3.1percent
Santa Clara	24.2percent	26.8percent	38.0percent	24.2percent	31.0percent	43.8percent
<b>Total</b>	<b>31.1percent</b>	<b>35.1percent</b>	<b>49.4percent</b>	<b>16.1percent</b>	<b>21.5percent</b>	<b>27.2percent</b>
<b>All California</b>	30.8percent	34.9percent	47.8percent	11.5percent	13.3percent	15.5percent

County	African American			Native American		
	2000	2010	2040	2000	2010	2040
Fresno	4.8percent	5.0percent	5.2percent	0.9percent	1.0percent	1.0percent
Merced	4.0percent	3.6percent	2.6percent	0.6percent	0.5percent	0.4percent
Monterey	5.9percent	5.4percent	3.7percent	0.6percent	0.5percent	0.3percent
San Benito	0.4percent	0.5percent	0.5percent	0.5percent	0.5percent	0.5percent
Santa Clara	3.6percent	3.5percent	3.0percent	0.3percent	0.3percent	0.2percent
<b>Total</b>	<b>4.1percent</b>	<b>4.0percent</b>	<b>3.6percent</b>	<b>0.5percent</b>	<b>0.5percent</b>	<b>0.4percent</b>
<b>All California</b>	6.7percent	6.4percent	5.5percent	0.6percent	0.6percent	0.5percent

Sources: California Department of Finance, Demographic Research Unit, County Population Projections (1998) at <http://www.dof.ca.gov/HTML/DEMOGRAP/repndat.htm#estimates>

## 4.10 ADAPTIVE MANAGEMENT

### 4.10.1 Adaptive Management Implementation Strategy

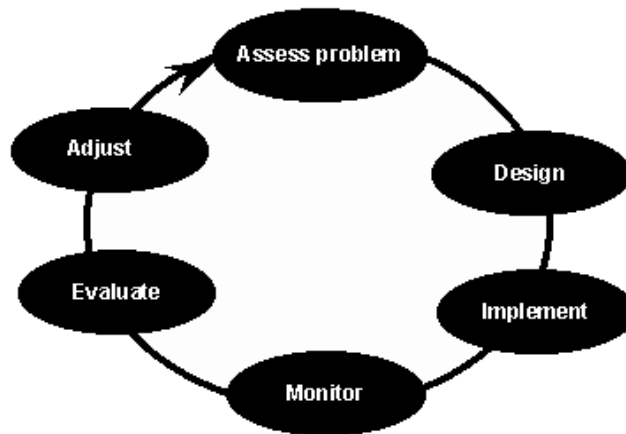
#### Introduction

This section outlines the adaptive management implementation strategy for the Clear Creek Management Area. Adaptive management can be defined as a systematic process for continually improving management policies and practices by learning from the outcomes of actions over time. It employs management programs that are designed to continually compare selected policies or practices and modify actions when warranted.

Adaptive management is based upon a growing realization of the limits of our scientific and management knowledge regarding ecosystems and the capacity to apply that knowledge to land management decisions in ways that lead to predictable outcomes. Adaptive management recognizes

that unknowns and uncertainties exist in the course of achieving any resource management goals. In such a setting, management actions (e.g., policies, prescriptions) become hypotheses; the results constitute outcomes, and by examining actual results in relation to those anticipated in our hypotheses, we enhance our capacity to learn and adapt.

There are generally six steps involved in the adaptive management process: planning or assessing the problem, design, implementation, monitoring, evaluation, and adjustments, as necessary. Planning involves defining the scope of the management problems, objectives and actions, identifying indicators for each management objective, designing a management plan, and monitoring program. Implementation, monitoring and evaluation occurs and the results of the monitoring are communicated to appropriate parties, and the management objectives and actions are modified based on results, if necessary.



### **Objectives and Goals**

The main objective of an adaptive management strategy is to allow flexibility for multiple use activities, resource protection and sustained yield, while meeting management objectives. The management objectives, for the CCMA, can be summarized as follows:

For Air, Land and Water Resources Management, the planning area will be managed to maintain or enhance air, land, and water resources while protecting human health

For Biological Resource Management, the planning area will be managed to protect biological resources, Special Status Species, and in particular, as a priority, the protection of existing populations of the San Benito evening-primrose and attempting to expand its range to areas that have moderate and high potential for the species. The BLM is committed to managing the CCMA to ensure that sensitive species and communities maintain or enhance their condition.

For Recreation Management, the BLM's goal for the management of off-highway vehicle (OHV) recreation at the CCMA is to provide for quality recreation opportunities, while reducing impacts to sensitive resources, minimizing conflicts with other resource uses, and promoting sustainable resources.

For Cultural Resource Management, the planning area will be managed to protect important cultural resources while allowing for educational research and appropriate interpretative uses.

For Special Management Areas, the planning area will be managed to protect unique resources of the San Benito Mountain Research Natural Area, and Serpentine ACEC and the values for which established

For Social, Economic, and Environmental Justice conditions, the planning area will be managed to meet changing recreational demands.

The adaptive management strategy complies with the intent of the Federal Land Policy and Management Act (FLPMA) by providing a combination of balanced and diverse resource uses and taking into account the long-term needs of future generations. Chapters 2, 3, 4 and 5 of this document outline the planning stages and appendix C and D outline the implementation, monitoring, goals, objectives, evaluation and adjustments for the CCMA's adaptive management strategy.

**Chapter 5 – Cumulative Affects**

5.1	Introduction.....	5-1
5.2	Air Quality.....	5-1
5.3	Watershed Resources.....	5-1
	5.3.1 Water Quality.....	5-1
	5.3.2 Soil Loss and Erosion.....	5-3
5.4	Human Health.....	5-4
5.5	Biological Resources.....	5-4
	5.5.1 Wildlife and Vegetation; Threatened, Endangered, and Special Status Plant and Animal Species.....	5-4
	5.5.2 Invasive Weeds.....	5-6
5.6	Recreation Resources.....	5-6
	5.6.1 Motor Vehicle Access Network.....	5-8
5.7	Cultural Resources.....	5-8
5.8	Special Management Areas.....	5-9
5.9	Socio – Economic Resources.....	5-9

## **CHAPTER FIVE CUMULATIVE EFFECTS**

### **5.1 INTRODUCTION**

Cumulative Impact Assessment (CIA) is not a process or a document that is separate from NEPA (National Environmental Protection Act), but rather an integral part of the NEPA process. CEQ (Council on Environmental Quality) regulations implementing the procedural provisions of NEPA define cumulative effects as: “The impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or nonfederal) or person undertakes such actions” (40 CFR 1507). Cumulative impacts must be considered along with direct and indirect impacts in assessing environmental effects on the human environment.

The cumulative effects region (CER) for which effects of the proposed action and other past, proposed, and reasonably foreseeable actions would be cumulatively recorded or experienced includes San Benito, Fresno, and Monterey counties. Therefore, this analysis considers additional effects arising from the proposed action with effects of other known past, present, and reasonably foreseeable actions in the CER.

### **5.2 AIR QUALITY**

San Benito and Fresno Counties are in non-attainment for PM<sub>10</sub> with Clean Air Act National Ambient Air Quality Standards. All alternatives would contribute to short-term cumulative impacts on air quality, particularly to the San Joaquin Valley, during periods of high OHV recreation use. Particulate matter and asbestos airborne emissions are the major sources of impacts. Impacts following high-use periods would dissipate within 48 to 72 hours depending upon weather conditions. Reducing the number of unpaved roads available for OHV use in the San Joaquin Valley portion of the CCMA, would help mitigate cumulative impacts to this air basin. Under Alternative C, these cumulative impacts would be reduced as a result of restrictions to OHV riding during the dry season. Particulate matter emissions are not expected to contribute to cumulative air quality impacts to Monterey or San Benito Counties due to prevailing winds. OHV recreation use as a result of this route designation project is not expected to contribute to cumulative impacts for ozone. Why?

Other pollutants associated with exhaust from motorized vehicles are: reactive organic gases (ROG), nitrogen oxides (NOX), and carbon monoxide (CO). Implementation of stricter motorized street-legal vehicle and off-road vehicle emissions standards would lessen contributions for these emissions. Overall, any motorized vehicle use on unpaved roads would contribute some level to emissions inventories for the affected air basins.

### **5.3 WATERSHED RESOURCES**

#### **5.3.1 Water Quality**

Heavy metals and asbestos are concerns in the CCMA; the BLM contracted a water quality study (Dynamac, 1998) to determine the magnitude of heavy metals being deposited into streams from 15

abandoned mines. The background concentration of metals detected in soils tended to be above stated federal standards, and is consistent with the natural geochemistry of the area. However, differences in the water samples taken from below and above abandoned mine sites, indicated that disturbed areas are contributing to metal concentrations over and above the naturally high levels. Disturbance by vehicles has also been a factor in increasing concentrations of metals transported downstream in the water.

Compared to existing conditions, under the action alternatives, water quality should exhibit a gradually improving trend over many years. Impacts related to OHV use of the barrens would be limited to the Clear Creek watershed. By eliminating unregulated use, eliminating vehicle access to all remaining abandoned mines, continuing completion of abandoned mine remediation projects, and by completing significant road repairs and improvements, the BLM would minimize the potential for additional human-caused impacts to the subject waterways, and maintain or enhance current water quality conditions while minimizing effects to human health. Reducing the number of miles of unpaved roads by 45 percent, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos. The extent of the contribution of heavy metals and asbestos passing into the Hernandez Reservoir remains an issue, and some continued natural contribution of mercury and asbestos may be unavoidable. Recent water sampling data indicates a possible downward trend in mercury concentrations in Clear Creek.

The Aurora Mine site area would be completely closed between the Aurora grade and SBM RNA reducing soil disturbance and the potential for off-site transport of contaminants. The action alternatives would reduce the miles of available routes in the Larious and San Carlos watershed where the highest levels of background concentrations of hazardous metals are present, thereby reducing the potential for human exposure and contaminated off-site sediment delivery.

Any motorized OHV use on highly erosive areas such as barren slopes and on unpaved roads and trails, could disturb soils containing hazardous metals and asbestos, and increase erosion and transport of sediment above natural background levels. Closure of routes accessing these mines and a corresponding reduction in soil disturbance from OHV's at these areas, would contribute to improvements in water quality by reducing the potential for contaminated sediment delivery.

In general, designated beneficial water uses identified for streams associated with the CCMA would be enhanced through decreased miles of routes and acres of barrens available for OHV use, reductions in stream crossings, and implementation of Best Management Practices to minimize watershed impacts. Riparian areas would have about 50 percent less miles of OHV routes<sup>1</sup>, and the number of stream crossings would decline as well compared to the existing route inventory. Nearly half the sediment delivered to streams within the CCMA comes from stream and swale crossings. Therefore, a reduced number of crossings would reduce substantially sediment delivery offsite. BLM and the USGS will continue to monitor the volume of sediment measured in tons, for daily and monthly quantities.

Under the No Action Alternative, direct impacts to the water quality and human health would result primarily from unrestricted vehicle use in the area. No improvement would result in current water quality conditions or potential for reduction in off-site transport of hazardous contaminants. Public recreation access to closed or abandoned mine areas would continue to provide the potential for

---

<sup>1</sup> This includes routes that transect within a 40 foot buffer of perennial and ephemeral streams. The majority of this mileage includes the identified stream crossings, rather than routes that parallel streams within the riparian buffer.

human exposure and contaminated sediment delivery of hazardous metals to waterways. This contamination would continue to impair Clean Water Act Section 303 (d) Water Quality Limited Segments for the following streams: Clear Creek (mercury), San Benito River (fecal coliform and sedimentation), and Hernandez Reservoir (mercury). The ability of BLM to meet the requirements of the recent California Regional Water Quality Control Board resolution related to TMDL for mercury in Clear Creek and Hernandez Reservoir could be in jeopardy should OHV use continue on the full inventory of routes and barrens. Water quality impacts related to designated beneficial uses identified for streams associated with the CCMA would likely improve only minimally, primarily due to completion of current mine rehabilitation projects and route maintenance. Unregulated motorized OHV use on highly erosive areas such as barren slopes and on unpaved roads and trails, would continue to disturb soils containing hazardous metals, and result in erosion and transport of these sediments. Sediment yields containing asbestos from the barrens would be 287 – 500 per cent above levels in the action alternatives and would continue to impact water quality and off-site cumulative impacts.

### **5.3.2 Soil Loss and Erosion**

In part, high rates of erosion in the serpentine watersheds is a natural consequence of the erosive soils formed from highly sheared and fractured serpentine rock containing abundant chrysotile asbestos and small amounts of other types of asbestos. On these barren slopes, run-off from winter storms causes extensive rill and gully erosion, which in turn contributes to sediment yields in stream channels. Stream diversions and through-cut roads cause gullies to form, and gullies have been large contributors to sediment yield from the CCMA route system. Under all action alternatives, the approximate 50-percent reduction in sediment yield and number of stream crossings would reduce off-site transport of sediments and corresponding impacts. A key component of the long-term reduction in sediment yields is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Over 150 miles of roads and trails would be closed and restored under this alternative over a 5-year period. Conducting annual soil loss assessments and performing corrective route maintenance will also contribute to reducing erosion.

All of the alternatives except the No Action Alternative will provide more protection to the soils within the CCMA. Through decreasing the number of roads, trails and barrens available for OHV activity the impacts from erosion and soil loss from disturbed areas that would affect some special status species in upland habitat and other sensitive plant habitat in the riparian areas will be reduced when compared to current levels. The elimination of OHV use in high erosion sub-watersheds will also contribute to reducing off-site impacts. Overall as a result of the reduced size of the route network, soil erosion will be reduced through the maintenance of these routes and trails and limiting barren use to those with high hydrographic position. The majority of barrens with low hydrographic position are eliminated in the action alternatives. The No Action Alternative would continue to contribute to significant erosion and sediment delivery rates and cumulative off-site impacts.

BLM currently employs Best Management Practices (Appendix D) related to trail and route maintenance to reduce impacts to watershed resources. BMPs include annual soil loss monitoring, trail stabilization, construction of hardened crossings, water bars, and rolling dips, out-sloping, and vehicle barriers and fencing in riparian zones.

## **5.4 HUMAN HEALTH**

The presence of airborne asbestos dust, a known carcinogen, is a serious air quality problem in the serpentine portion of the CCMA. Studies have proven that the vast majority of airborne asbestos dust in the Clear Creek area is generated by human activities, primarily vehicle use. Continued OHV use on unpaved routes, trails, and barrens would generate asbestos emissions, and visitors in these areas could have increased cancer risks from exposure to naturally occurring asbestos. An overall reduction in the area available for vehicle access may have little effect to reduce airborne asbestos emissions. Closure of 2400 acres of barrens would contribute to an overall reduction in asbestos dust generation and its transport by wind off-site, and would contribute to lower levels of asbestos transported to watercourses and reduced impacts to beneficial uses. Potential health risks and air quality impacts from airborne asbestos emissions associated with OHV recreation use would still include an elevated risk of contracting serious and/or life-threatening asbestos-related diseases from exposure to asbestos fibers. Any reductions in impacts to human health would come primarily from mitigation and administrative measures. Dry season vehicle restrictions in Alternative C would contribute to reduced impacts to human health. Vehicle caused airborne asbestos emissions and public exposure could be reduced by dust suppression with water trucks, on six miles of the lower Clear Creek Canyon road during periods of high use. A public vehicle wash rack for removing dust, mud and other asbestos-containing materials from vehicles could substantially reduce the impacts from off-site transport of asbestos by OHV user vehicles and subsequent exposure.

Furthermore, surface disturbing activities would only be permitted during periods when air concentrations of asbestos fall below OSHA action levels for a given activity. All BLM road maintenance and grading activities would be conducted in compliance with MBUAPCD ATCM for airborne asbestos, to prevent visible emissions during these operations. Education programs related to asbestos exposure and hazards would be expanded, and any new risk assessments would be incorporated into informational materials. Closure of all remaining mine areas and restricting vehicle access to these areas would further reduce public exposure to hazardous contaminants and transport of hazardous metals to streams and corresponding off-site transport. The result of long-term exposure and short term exposure of high concentrations of asbestos through the inhalation of asbestos fibers, could result in serious asbestos related diseases and cancer. It is estimated that OHV use on unpaved roads, trails, and barrens would still generate airborne asbestos emissions and potential exposure, which would increase the probability of an individual's risk to contracting cancer by 5 in 100,000.

Most ORV enthusiasts avoid use of the area during the summer months due to the very dry and dusty conditions. The surface water exposure pathway would appear to present a minimal risk to recreation users of the CCMA, because of the limited number of days that a typical user visits, and the fact that the surface water is generally not used as a potable water source.

## **5.5 BIOLOGICAL RESOURCES**

### **5.5.1 Wildlife and Vegetation; Threatened, Endangered, and Special Status Plant and Animal Species**

Compared to existing conditions, the action alternatives will contribute to enhancing the long-term protection of the sensitive habitat and special status species that occur throughout the CCMA. This would be accomplished by eliminating unregulated use, implementing Best Management Practices, completing significant road repairs and improvements, reducing the number of stream crossings and

miles of routes in riparian areas by 50 percent, and reducing soil disturbing activities by reducing the number of miles of unpaved roads and substantially reducing the acres of barren play areas. Considering estimates that nearly half the sediment delivered to streams within the CCMA come from stream and swale crossings, this reduction in the number of crossings should result in substantial reductions in sediment delivery and benefit riparian vegetation communities and sensitive species habitat.

A key component of the long term reduction in sediment yields benefiting riparian areas is the rehabilitation and restoration of closed routes to a natural condition, so that they trend towards undisturbed soil erosion and sediment delivery rates. Over 150 miles of roads and trails would be closed and restored over a 5-year period. Closure and restoration of barrens would benefit riparian vegetation and increase the acreage of barrens which would be able to support vegetation and special status species. Route and barren closures in high erosion sub-watersheds, including Upper Clear Creek Canyon, south fork of Clear Creek, and Larious Canyon would contribute to reductions in sediment delivery and impacts to sensitive species habitat. A portion of R008 contributing significant amounts of sediment to the sub-watershed, riparian areas, and sensitive habitat would be closed. In addition, the designation of routes and areas and the enforcement of these designations should result in less off route travel and route proliferation.

There is a substantial reduction in routes and in particular, single track trails (STT) affecting habitat polygons for the San Benito evening-primrose and rayless layia compared to existing conditions. This reduction would substantially increase the protection given to these habitats. The current status of known San Benito evening-primrose populations on public lands in the CCMA would be maintained or enhanced due to route closure, avoidance through routing away from sensitive areas, fence protection, habitat manipulation, and public education. Expansion of the Research Natural Area would provide long term protection and beneficial impacts to vegetation communities, and positively affect the conservation of associated plant and animal species. Cumulative impacts in relation to threatened and endangered species would occur if unauthorized motorized vehicle incursions into habitat continue.

Several Staging areas (terrace sites) in lower Clear Creek Canyon would continue to experience impacts related to camping and day-use activities. Fencing and barriers protect most sensitive resources in these areas. The continued erosion of topsoil in high vehicle use areas would decrease the productive soil horizons and inhibit natural re-vegetation of some areas.

Animal species can be directly impacted by being crushed in burrows or on the surface or indirectly impacted through habitat alteration (soil compaction, vegetation destruction) or by toxins from exhausts. Impacts to vegetation and wildlife habitats may be caused through sedimentation, erosion, loss of soil, crushing, habitat destruction, removal and use for fuel. All action alternatives would have a beneficial effect, to differing degrees, upon wildlife and wildlife habitat, as altered habitat and impacted vehicle routes and barrens are returned to the land base, creating an increase in wildlife habitat. Fragmentation of small species' habitats would be decreased as altered habitat and impacted routes become restored and illegal off route travel is curtailed. There would be a lowered potential for vehicle incursions with small animals and of harassment of all species by people through route designation and enforcement of travel on approved routes. Impacts to species found within the riparian areas are expected to decrease as route designation, maintenance and enforcement limit use to stable routes, trails and barrens of low hydrographic potential. The reduction of stream crossings, the use of hardened stream crossings and the elimination of trails in creek beds will yield positive effects. Riparian vegetation impacts are expected to diminish as erosion and sediment flows diminish.

All routes and play areas will be screened through resource evaluation criteria, including the presence of known or potential sensitive resources, proximity to sensitive resources, and an analysis of potential impacts of routes from non-compliant use. Where conflicts exist with resource condition objectives and protection of sensitive resources, route closure will be recommended.

Under the No Action Alternative, cumulative impacts occurring from past and present actions, which include, vehicle route proliferation combined with non-compliant OHV use and trespass into sensitive species habitat would continue to physically impact the landscape and have a negative effect upon wildlife and vegetation. Vegetation communities and plant and animal habitats on public lands would be expected to have continued impacts from unregulated OHV recreation use on over 400 miles of routes and 2800 acres of barrens. The federally listed San Benito evening-primrose, listed animal species, and special status plant and animal species would continue to be impacted and the existence of some populations could be jeopardized. Riparian vegetation communities would in particular continue to suffer cumulative impacts.

### **5.5.2 Invasive Weeds**

At the present time, no yellow starthistle is present in areas to the east of Clear Creek Canyon within the CCMA. However, yellow starthistle is found throughout the Clear Creek Canyon on both serpentine and non-serpentine soils. The primary agents for long-distance seed dispersal are road maintenance equipment and the undercarriage of motor vehicles (Bossard et al, 2000.) Yellow starthistle thrives on disturbed sites. Under all alternatives, unless mitigation measures are taken, there is the potential for yellow starthistle to spread to areas throughout the CCMA and displace native vegetation and wildlife habitat. A comprehensive weed management program for the CCMA and surrounding area is currently being developed and will contribute to mitigating these impacts.

## **5.6 RECREATION**

The demands for OHV recreation in other areas are affected by actions proposed in this document. The implementation of the expansion of the San Benito Mountain Research Natural Area and potential closure of areas containing threatened species within the CCMA may spatially displace visitors throughout the management area. Repeat OHV users in the CCMA may feel displaced and frustrated by the closures of routes which have been historically used for the past 30 years. The proposed plan amendments would decrease vehicle travel on unpaved public land routes due to route closure and/or rehabilitation. OHV popularity in California continues to rise and legal opportunities for OHV recreation continues to decrease. Overall, the reduction in numbers of available routes in the CCMA would contribute to some degree to statewide losses in OHV opportunities.

There are six State Vehicle Recreation Areas (SVRA) available for OHV use throughout the state, three of which are located in central California with the remaining three SVRAs are located in southern portion of the state. Specifically they are Prairie City, Carnegie, Hollister Hills, Oceano Dunes, Hungry Valley, and Ocotillo Wells. There are numerous designated OHV areas managed by the BLM, Forest Service, counties, cities, and other jurisdictions along the eastern border of the state. However, the nearest BLM OHV area is located over 250 miles from the CCMA. Several opportunities for four-wheel drive recreation exist on Forest Service lands on the west side of the Sierra Nevada adjacent to the San Joaquin Valley. OHV recreation opportunities are also present in the Los Padres National Forest in Monterey and San Luis Obispo Counties. The BLM also manages the Cow Mountain and Knoxville OHV areas in Lake and Napa Counties.

The following areas provide the closest mix of OHV opportunities similar to those found at the CCMA. However, none of the areas quite match the unique character of the CCMA in providing a variety of terrain and OHV experiences in this remote setting, and in particular the open play experience on the barrens. Some OHV users could be displaced to these State Park facilities.

Carnegie SVRA is located between Livermore and Tracy, offers 1,500 acres for trail riding, hill climbing, and a moto-cross track. Hollister Hills is located outside of Hollister. This SVRA is one of the most heavily used OHV parks and most intensively managed. The lower ranch offers more than 2,400 acres and 68 miles of trails for motorcycles and ATVs. There are moto-cross tracks for practice and a special area designated for small vehicles and children. Overall there are nearly 6,800 acres of mixed chaparral, oak woodland, and grassland in the park.

Oceano Dunes is located near Grover Beach in San Luis Obispo County and contains 1,500 acres of open sand dunes for off-highway motor vehicle recreation. This is the only State Park in California where vehicles are permitted to drive and camp on the beach. Out of the 1,100 miles of California shoreline identified by the California Coastal Commission, Oceano Dunes represents the last 5 ½ miles of beach that are accessible by vehicles. Though this area provides some degree of open OHV use on dunes it would probably not attract CCMA users that recreate on the barren areas. Hungry Valley is the second largest park in the SVRA system. It is located between Bakersfield and Los Angeles. The area consists of 19,000 acres and more than 130 miles of OHV trails for motorcycles, ATVs and four-wheel drive vehicles. This area provides an extent of trail riding opportunities that closest resemble those available at the CCMA.

Prairie City is located 20 miles east of downtown Sacramento and its proximity to a burgeoning suburban area, this 836-acre park is destined to become the model for future urban OHV parks and provide a mix of both motorized and non-motorized forms of off-road recreation, including BMX facilities, world class moto-cross tracks, skateboard parks, mountain bike trails and rock climbing facilities. This urban setting provides OHV recreation experiences quite different than the CCMA.

The establishment of a designated route system throughout the CCMA would have both positive and negative recreation impacts: Maps, signing and trail maintenance would add a degree of safety and security for those riding in the backcountry, yet fencing projects, routine trail maintenance, and the designated route system would result in a much more regulated environment. These changes would reduce the quality of the recreation experience for some users who value recreating in an environment with few obvious societal restraints and controls. There would be some closures of popular riding areas. These areas include Larious Canyon, San Carlos Peak, San Carlos watershed, and Cantua watershed. These unique habitat areas would be protected from off road use by the various alternatives.

In Fiscal Year 2003, approximately 50,000 casual and permitted users visited the CCMA and spent 400,000 visitor hours there. It is not anticipated that implementation of the route and area designations will decrease visitation and OHV recreation use of the area. Non-OHV recreation opportunities would benefit by having some additional areas to recreation without interference of motorized vehicles and reduced user conflicts. Competitive events would continue to be allowed, although there would not be as extensive a route network to select from. Two competitive motorcycle enduros (races) with over 1,000 participants and two noncompetitive events with over 250 participants were authorized by the Hollister Field Office within the CCMA. This is typical of permitted OHV activity in the CCMA. It is anticipated that Special Recreation Permit activity will moderately increase in the reasonably foreseeable future, consistent with continued population growth anticipated in the region and the increasing popularity of OHV recreation. The Hollister Field Offices

continues to get new inquiries from perspective permittees requesting information about how to apply for a permit to conduct competitive and noncompetitive events in the Clear Creek Management Area. Other factors which generate cumulative effects in the CCMA are casual use activities which the BLM does not require a permit. In addition to OHV use, some of these activities include hunting, target shooting, rock hounding, hiking, and horseback riding. Signs, parking areas, and turn-a rounds will be implemented to deter continued unauthorized incursions in closed areas and routes.

### **5.6.1 Motor Vehicle Access Network**

Motor vehicle access and opportunities for recreation are spread thinly in central California. Route designation in the CCMA would further limit vehicular access to some BLM administered lands. The incremental decrease proposed in this planning effort is moderate. Virtually all improved and 4-wheel drive routes would remain open under the alternatives. There would be some overall reduction in jeep and single track trails that would impact some users. Field observations indicate that the majority of OHV recreation use occurs on routes within the proposed route network. It is not expected that route designation will reduce the number of visitors, but that visitation would continue to experience moderate increases from year to year. There would be a substantial reduction in OHV recreation opportunity for open play on barrens, impacting this type of activity and the availability for cross-country travel. The CCMA would still contribute to meeting regional recreation demand for OHV and other types of recreation activities.

While there would be some isolated areas where vehicle travel would be restricted, the 218 mile network of routes would still span the majority of the CCMA and provide a variety of motorized vehicle recreation opportunities, experiences, and challenges. This alternative would continue to provide vehicle access for rockhounding, sightseeing, wildlife watching, and a variety of recreation opportunities. Non-motorized recreation activities would be enhanced through providing more areas for these activities and reduced conflicts with motorized use. Though unlimited motorized exploration of trails would no longer be allowed, the substantial route network in the more remote southeast portion of the CCMA would still provide opportunities for exploration and the challenge of navigating this remote environment. Some historical routes used in enduro and permitted events would no longer be available, however the route network, including 111 miles of ATV/Single Track trails would offer a variety of course combinations that can be varied from year to year.

Opportunities to escape the sights and sounds of the mechanized world would be heightened in areas closed to motorized vehicles. The limitations on motor vehicle travel are not such that access to sites for non-motorized activities would be substantially affected. BLM will continue to strive to offer a challenging network of motorized routes for public enjoyment.

## **5.7 CULTURAL**

The current database of known cultural (and paleontological) resources for the CCMA is adequate for establishing the route designation process. Incorporating the strategies outlined in Appendices C and D will also provide the tools and mechanisms for maintaining designated routes while affording cultural resource protection. As new information is gathered from archeological inventory and excavation and new ethnographic data is revealed from Native American concerns, future undertakings and projects within the CCMA would address this new data and management strategies would be adapted if warranted. In addition, some of the designated open routes in the CCMA were old mining access routes and have been used since mining activity began in the early 1940s. Mining

activities ceased in 1997. While the integrity of these resources has been depleted through many years of continued use and sometimes has been substantially altered or lost in areas, evidence remains in areas of earlier times, and continues to be at risk until survey and recovery is complete for these eligible properties.

Under the No Action Alternative, cumulative direct and indirect impacts to cultural resources would be more difficult to control. Loss or destruction of cultural resources within and adjacent to the CCMA could continue as a result of unregulated OHV use of this area over time. Additional damage to and destruction of cultural resources could contribute to the cumulative loss of irreplaceable, scientifically important information contained in known and unknown cultural resources in the CCMA routes and open barrens.

## **5.8 SPECIAL MANAGEMENT AREAS**

Expansion of the San Benito Mountain Research Natural Area would result in high-quality areas containing nearly all of the CCMA's unique habitats and species being included in the RNA, and preservation of the values for which established. There would also be an increase in the overall integrity of the RNA due to boundary adjustments which would include whole sub-watersheds instead of only portions of them.

Cumulative impacts from historic legal vehicle use and the present illegal use of vehicle ways has led to the current impacts to the Clear Creek Serpentine Area of Critical Environmental Concern, San Benito Mountain Research Natural Area, San Benito Mountain wilderness study area. Illegal vehicle use within these areas would be reduced through closure of some routes, barriers, increased enforcement, and education efforts provided by all action alternatives.

Benefits associated with route designation and the reduction of illegal OHV activity; include minimizing impacts to watershed resources, the protection of wilderness values, the protection and preservation of important historic, cultural, and scenic values, plant and wildlife resources, and life and safety from natural hazards. The expanded RNA would contribute to the preservation of an area where natural processes are allowed to predominate and which is preserved for the primary purposes of research and education. Natural re-vegetation processes could occur along with the restoration of locations impacted by past vehicle use, resulting in overall positive effects. In addition, the expansion of the San Benito Mountain Research Natural Area will allow for greater protection of the federally threatened San Benito evening-primrose. There would be greater protection of natural resources and protection of wilderness values within the WSA, yielding positive effects across the landscape.

## **5.9 SOCIO - ECONOMIC RESOURCES**

The Action Alternatives would result in a decrease in the number of routes and barren areas available for OHV recreation. However, BLM does not anticipate that these decreases would curtail OHV recreation activities. Field observations indicate that most OHV recreation use currently occurs within the designated route network proposed in the preferred alternative. The proposed designations would support current or slightly higher user levels. With projected population increases and OHV registrations, the proposed route network would likely not support substantial increases in OHV recreation use over the long term and would result in some as yet unquantifiable impacts to local and regional economies. The projected growth rate of OHV recreation use may be somewhat lower than in the past, due to the widespread perception of less recreation opportunities for OHV use.

Neighboring State Vehicular Recreation Areas in Hollister, Livermore, and Santa Clara are not likely to incur significant impacts as a result of this designation project. The BLM offers OHV opportunities throughout the state however; these are located over 300 miles from Clear Creek. These sites are being limited too through land use plans and all of them are seeing a dramatic increase in OHV recreation activity.

Impacts from potential implementation of the Recreation Fee Demonstration program related to visitor use fees are not expected to be significant, as fees would be comparable to those collected at other OHV recreation areas. The BLM has not estimated the economic benefits generated from recreation-related expenditures by visitors to the Management Area. Studies have been conducted by the State Off-Highway Vehicle Commission and California State Parks to determine expenditures by visitors to OHV recreation areas. These studies indicated that the average OHV recreation user expended about \$50 per visitor day in regional and local communities. Applying these figures to Clear Creek users, conservative estimates would indicate that off-road-vehicle recreation use in the area could contribute as much as \$2.5 million annually to the regional economy. The proposed designations would likely contribute to moderate benefits to local economies. With visitor use levels remaining fairly constant or experiencing slight increases, economic impacts are not expected to negatively affect current local or regional sales and purchases of OHV equipment or related supplies. Enduro and other Special Recreation Permit type events would continue to take place, and the associated economic benefits from these events would be maintained. Closure of some routes and areas to motorized use could result in increases in non-motorized recreation activities and associated economic benefits.

Rural and wildland landscapes are becoming increasingly less common as urbanization expands, especially in the San Francisco Bay Area, Central Coast communities, and in the San Joaquin Valley. The wildland experiences in the Clear Creek Management Area are increasingly valuable as the supply of open space decreases in the visitor shed. Even though the designated open route system is less than the entire inventoried network, recreation users would still be able to experience solitude, the wildlands character, and a sense of exploration, due to the size of the area and the extensive open route network that would be provided. This reduction of routes would benefit the non-motorized recreation experience and reduce user conflicts between motorized and non-motorized recreation use.

## **Appendices**

Appendix A – Route Designation

Appendix B – Barren Designation

Appendix C – Implementation Plan

Appendix D – Best Management Practices

Appendix E – San Benito Mountain Research Natural Area Interim Management  
Plan and Management Guidance

Appendix F – Special Status Species

Appendix G – Air Quality

Appendix H – Water Quality Data

Appendix I – Environmental Consequence Table of Alternatives

Appendix J – Clear Creek Management Area Chronology

Appendix K – Map: Alternative A

Appendix L – Map: Alternative B

Appendix M – Map: Alternative C

Appendix N – Map: Alternative D

**APPENDIX A**  
**ROUTE DESIGNATION**

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION WORKSHEET

1. Route Number:
2. Route Characteristics
  - a. Length
  - b. Continuity
  - c. Description
  - d. Trail Maintenance Objective
3. Topographic Map(s):

EVALUATION CRITERIA				
Level	Criteria Name	Criteria Value1	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			

4. ROUTE DESIGNATION:  
(If Limited, Describe Limitation)
5. ROUTE DESIGNATION DATE:
6. Other Proposed Actions
7. Route Specific Rationale:
8. Decision Record:  
This decision is in conformance with the Hollister Field Office Resource Management Plan, 1984; Clear Creek Management Plan and Record of Decision, 1986; Clear Creek Management Plan Amendment and Record of Decision 1999. An environmental assessment supports the finding of no significant impact.

Decision Criteria: Includes all criteria identified in 43 CFR 8342.1 parts (a) through (d) and in Environmental Analysis CA-190-2003-XX

**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE EVALUATION CRITERIA DATA ELEMENT DICTIONARY**

**Introduction:** The following criteria represent the data on which decisions about the authorized recreation use of routes is based. The data element dictionary describes the allowed responses for each criterium. The information on each route will be entered into an electronic database for analysis and query.

**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.
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. Transportation/manageability

Code	Definition
18000	No known conflicts – manageable given current TMO 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 TMO, 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

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length Miles	Route TMO	Route Designation	Designation Date	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	IMP	OPEN	18 June 03	11010	12212	13010	14212	15010	16010	17000	18000	19000	110000	111000
R002	6.9	4WD	OPEN	18 June 03	11050	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
R003	0.3	4WD	OPEN	18 June 03	11000	12212	13000	14212	15000	16010	17000	18000	19000	110000	111000
R004	1.0	4WD	OPEN	18 June 03	11010	12000	13000	14212	15000	16000	17000	18000	19000	110000	111000
R005	5.8	4WD	OPEN	18 June 03	11020	12000	13000	14212	15212	16000	17000	18000	19000	110000	111000
R006	1.0	4WD	OPEN	18 June 03	11000	12000	13000	14010	15212	16212	17000	18000	19000	110000	111000
R007	1.6	JEEP	ADMIN	18 June 03	11000	12000	13000	14212	15010	16212	17000	18000	19000	110000	111000
R007	2.25	JEEP	OPEN	18 June 03	11000	12000	13000	14212	15010	16212	17000	18000	19000	110000	111010
R008	1.5	4WD	OPEN	18 June 03	11000	12212	13000	14212	15212	16212	17000	18000	19000	110000	111000
R009	0.9	IMPR	ADMIN	18 June 03	11010	12000	13000	14212	15000	16212	17000	18212	19000	110222	111000
R010A	1.6	JEEP	OPEN	18 June 03	11020	12212	13212	14212	15000	16010	17000	18000	19000	110222	111000
R010B Alt A & B	0.9	JEEP	OPEN	18 June 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
R010B Alt C	0.9	JEEP	CLOSED	10 Sept 03											111119
R010C Alt A	2.7	JEEP	ADMIN	10 Sept 03		12149	13119			16010					
R010C Alt B	2.7	JEEP	OPEN	10 Sept 03	11000	12242	13212	14000	15000	16010	17000	18000	19000	110000	111000
R010C Alt C	2.7	JEEP	CLOSED	10 Sept 03		12149	13119			16010					
R011	14.1	IMPR	OPEN	18 June 03	11010	12212	13212	14212	15212	16010	17000	18000	19000	110000	111000
R012	0.4	4WD	ADMIN	18 June 03	11000	12000	13212	14000	15000	16000	17000	18000	19000	110000	111000
R013 Alt A & B	1.1	4WD	OPEN	18 June 03	11000	12000	13010	14000	15000	16010	17000	18000	19000	110000	111000
R013 Alt C	1.1	4WD	CLOSED	10 Sept 03			13119			16010					
R014	1.3	JEEP	OPEN	18 June 03	11030	12000	13000	14212	15000	16010	17000	18232	19000	110000	111000
R015	2.0	IMPR	OPEN	18 June 03	11010	12212	13000	14212	15212	16000	17000	18000	19000	110000	111000
R015	5.4	IMPR	ADMIN	18 June 03	11119										
R016	2.5	JEEP	OPEN	18 June 03	11070	9999	13000	14000	15000	16010	17000	18000	19000	110000	111010

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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length Miles	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
R017	1.8	JEEP	LIMITED	10 July 03	11020	12232	13000	14000	15212	16212	17010	18000	19000	110000	111000
R018	2.8	JEEP	LIMITED	10 July 03	11020	12010	13000	14000	15000	16010	17010	18000	19000	110000	111020
R019	6.2	IMPR	ADMIN	23 Aug 03	11010	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T101	1.5	STT	OPEN	23 Aug 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T103	1.4	JEEP	OPEN	27 July 03	11000	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T104	4.5	JEEP	OPEN	27 July 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T105	1.0	JEEP	OPEN	27 July 03	11000	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T106	0.9	ATV	OPEN	27 July 03	11000	12212	13000	14000	15212	16010	17000	18000	19000	110000	111000
T107	1.556	JEEP	OPEN	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T108	1.0	ATV	OPEN	27 July 03	11000	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T109	0.7	STT	OPEN	27 July 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T111	0.9	JEEP	OPEN	27 July 03	11000	12000	13000	14010	15000	16010	17000	18000	19000	110000	111000
T112	0.5	ATV	OPEN	27 July 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T113	1.5	ATV	OPEN	27 July 03	11010	12212	13000	14212	15010	16212	17000	18000	19000	110222	111000
T114	1.2	STT	OPEN	27 July 03	11000	12010	13000	14212	15000	16010	17000	18000	19000	110000	111000
T115	1.34	JEEP	OPEN	27 July 03	11010	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T116	2.6	STT	OPEN	27 July 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T117	1.3	STT	OPEN	27 July 03	11010	12000	13000	14212	15212	16212	17000	18000	19000	110000	111000
T119	1.2	ATV	OPEN	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T120	1.7	JEEP	OPEN	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T121	0.4	ATV	OPEN	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T122	0.5	STT	OPEN	27 July 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T123	0.3	STT	OPEN	27 July 03	11000	12212	13000	14000	15212	16000	17000	18000	19000	110000	111000
T124A	1.5	STT	OPEN	10 Sept 03	11000	12000	13000	14212	15000	16000	17000	18000	19000	110000	111000

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T124B Alt C	1.3	STT	CLOSED	10 Sept 03			13119	14212		16212					
T124B Alt A & B	1.3	STT	OPEN	10 Sept 03	11000	12000	13010	14212	15000	16000	17000	18000	19000	110000	111000
T125	4.8	ATV	OPEN	27 July 03	11050	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T126	1.2	STT	OPEN	27 July 03	11050	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T127	0.386	STT	OPEN	27 July 03	11010	12212	13000	14212	15000	16010	17000	18000	19000	110000	111000
T128	1.9	ATV	OPEN	27 July 03	11010	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T129	0.8	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16212	17000	18000	19000	110000	111000
T132	1.2	JEEP	OPEN	27 July 03	11010	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T133	0.3	JEEP	OPEN	27 July 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T134	1.9	4WD	OPEN	27 July 03	11000	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T135	1.1	STT	OPEN	27 July 03	11000	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T137	2.7	STT	OPEN	27 July 03	11010	12000	13000	14212	15212	16010	17000	18000	19000	110000	111000
T138	0.7	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16010	17000	18000	19000	110000	111000
T139	0.8	JEEP	OPEN	02 Sept 03	11000	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T140	0.8	JEEP	OPEN	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T141	1.0	JEEP	OPEN	27 July 03	11030	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T142	0.7	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16010	17000	18000	19000	110000	111000
T147	1.0	JEEP	OPEN	27 July 03	11000	12212	13000	14212	15000	16010	17000	18000	19000	110000	111000
T148	1.5	JEEP	OPEN	27 July 03	11020	12000	13000	14212	15000	16000	17000	18000	19000	110000	111000
T149	0.3	JEEP	OPEN	27 July 03	11020	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T150	1.2	JEEP	OPEN	27 July 03	11020	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T151	5.1	4WD	OPEN	27 July 03	11149	12212	13000	14212	15212	16010	17000	18000	19000	110000	111000
T153 Alt B	3.1	JEEP	OPEN	10 Sept 03	11252	12212	13212	14212	15000	16010	17000	18000	19000	110000	111000
T153 Alt A & C	3.1	JEEP	CLOSED	10 Sept 03	11252	12212	13119	14212	15000	16010	17000	18000	19000	110000	111000
T158 A	1.4	4WD	OPEN	10 Sept 03	11010	12212	13212	14212	15212	16212	17010	18000	19000	110000	111000

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T158B Alt A & B	1.1	4WD	OPEN	10 Sept 03	11000	12212	13212	14212	15212	16212	17010	18000	19000	110000	111000
T158B Alt C	1.1	4WD	CLOSED	10 Sept 03	11000	12212	13119	14212	15212	16212	17010	18000	19000	110000	111000
T159	3.5	JEEP	OPEN	27 July 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T162	0.6	STT	OPEN	10 Sept 03	11000	12000	13212	14000	15212	16010	17000	18000	19000	110000	111000
T162	0.6	STT	CLOSED	10 Sept 03	11000	12000	13119	14000	15212	16010	17000	18000	19000	110000	111000
T163	1.7	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16212	17000	18000	19000	110000	111000
T164	1.61	STT	OPEN	27 July 03	11000	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T165	1.0	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16010	17000	18000	19000	110000	111000
T166	5.03	STT	OPEN	24 Aug 03	11010	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T167	0.8	STT	OPEN	27 July 03	11000	12000	13000	14212	15000	16212	17000	18000	19000	110000	111000
T168	1.1	JEEP	OPEN	27 July 03	11010	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T169	1.2	ATV	OPEN	27 July 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T170	0.4	Black	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T171A Alt B	2.3	ATV	LIMITED	10 Sept 03	11000	12030	13000	14000	15000	16010	17000	18000	19000	110000	111000
T171B Alt B	2.2	ATV	LIMITED	10 Sept 03	11000	12030	13000	14000	15000	16010	17000	18000	19000	110000	111000
T171A Alt A & C	2.3	ATV	CLOSED	10 Sept 03	11000	12030	13000	14000	15000	16010	17000	18000	19139	110000	111000
T171A Alt A & C	2.2	ATV	CLOSED	10 Sept 03	11000	12030	13000	14000	15000	16010	17000	18000	19139	110000	111000
T171	2.1	JEEP	LIMITED	27 July 03	11000	12030	13000	14000	15000	16010	17000	18000	19000	110000	111000
T175	0.9	STT	OPEN	14 July 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T176	1.0	ATV	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T178	1.9	ATV	OPEN	07 July 03	11000	12010	13000	14212	15212	16000	17000	18000	19000	110000	111000

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T179	0.1	JEEP	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T181	3.2	STT	OPEN	02 Sept 03	11000	12010	13000	14000	15212	16212	17000	18000	19000	110212	111000
T182 Alt A & C	0.7	STT	CLOSED	15 Oct 03							17119			110129	
T182 Alt B	0.7	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T183	1.3	STT	OPEN	14 July 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T184	6.0	STT	OPEN	14 July 03	11000	12212	13000	14212	15212	16212	17000	18000	19000	110000	111000
T185	0.6	STT	OPEN	14 July 03	11000	12212	13000	14000	15000	16010	17000	18000	19000	110000	111000
T189A	0.9	JEEP	OPEN	10 Sept 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T189B Alt A & B	0.6	JEEP	CLOSED	10 Sept 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T189B Alt C	0.6	JEEP	CLOSED	10 Sept 03											111119
T189C Alt A & B	3.2	ATV	OPEN	10 Sept 03	11000	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T189C Alt C	3.2	ATV	CLOSED	10 Sept 03											111119
T191	1.2	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T192	0.3	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T193 Alt A & B	2.8	STT	OPEN	10 Sept 03	11000	12000	13212	14212	15000	16000	17000	18000	19000	110000	111000
T193 Alt C	2.8	STT	CLOSED	10 Sept 03			13119								
T194	2.3	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T195	0.8	STT	OPEN	02 Sept 03	11010	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T196	0.3	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T197	0.5	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T198	2.4	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T199	0.6	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T200	0.6	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16212	17000	18000	19000	110000	111000
T201	0.5	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T202	0.6	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T203	1.5	STT	OPEN	10 Sept 03	11010	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T204	0.8	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T205	0.8	STT	OPEN	10 Sept 03	11010	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T206	1.4	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T206	1.3	JEEP	OPEN	10 Sept 03	11232	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T207	0.4	STT	OPEN	10 Sept 03	11020	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T208	2.3	STT	OPEN	02 Sept 03	11010	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T209	2.0	ATV	OPEN	02 Sept 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T210	1.6	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T211	1.3	STT	OPEN	02 Sept 03	11000	12000	13000	14000	15212	16212	17000	18000	19000	110000	111000
T212 Alt B	2.8	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T212 Alt A & C	2.8	STT	CLOSED	10 Sept 03											111119
T213	1.5	ATV	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T214	0.4	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T215	1.0	ATV	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T216	2.3	ATV	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T216	3.8	STT	OPEN	25 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T217	0.1	ATV	ADMIN	02 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T218	1.5	STT	OPEN	10 Sept 03	11000	12212	13000	14000	15212	16010	17000	18000	19000	110000	111000
T219 Alt A & C	1.1	ATV	CLOSED	10 Sept 03											111119
T219 Alt B	1.1	ATV	LIMITED	10 Sept	11000	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T220 Alt A & B	3.6	JEEP	LIMITED	10 Sept 03	11000	12000	13000	14000	15212	16010	17000	18000	19222	110000	111000

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T220 Alt C	3.6	JEEP	CLOSED	10 Sept 03									19139		
T221 Alt A & B	0.7	JEEP	LIMITED	10 Sept 03	11000	12000	13000	14000	15000	16000	17000	18000	19222	110000	111000
T221 Alt C	0.7	JEEP	CLOSED	10 Sept 03									19139		
T222	0.8	STT	OPEN	10 Sept 03	11020	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T223	1.1	STT	OPEN	10 Sept 03	11020	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T224	1.7	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T225	1.0	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T226	1.6	STT	OPEN	10 Sept 03	11000	12212	13000	14000	15000	16000	17000	18000	19000	110000	111000
T227	0.4	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T228	0.4	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T229	0.7	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T230	0.2	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T231	0.4	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T232	0.3	IMPR	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T233	0.3	4WD	ADMIN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T234	0.7	ATV	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T235	1.5	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T236	1.0	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T237	1.8	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T238	0.4	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T239	0.4	STT	OPEN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T240	0.05	4WD	ADMIN	26 Aug 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T241	0.6	STT	OPEN	10 Sept 03	11010	12212	13000	14000	15000	16000	17000	18000	19000	110000	111000
T242 Alt B	1.2	STT	OPEN	10 Sept 03	11000	12000	13000	14000	15212	16000	17000	18000	19000	110000	111000
T242 Alt A & C	1.2	STT	CLOSED	10 Sept 03		12119			15212						

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T243 Alt A & C	1.2	ATV	CLOSED	15 Oct 03							17119			110129	
T243 Alt B	1.2	ATV	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T244 Alt A & C	0.5	STT	CLOSED	15 Oct 03							17119			110129	
T244 Alt B	0.5	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T245 Alt A & C	0.7	STT	CLOSED	15 Oct 03							17119			110129	
T245 Alt B	0.7	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T246 Alt A & C	0.2	STT	CLOSED	15 Oct 03							17119			110129	
T246 Alt B	0.2	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T247 Alt A & C	0.14	STT	CLOSED	15 Oct 03							17119			110129	
T247 Alt B	0.14	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T248 Alt A & C	0.2	STT	CLOSED	15 Oct 03							17119			110129	
T248 Alt B	0.2	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T249 Alt A & C	0.23	STT	CLOSED	15 Oct 03							17119			110129	
T249 Alt B	0.23	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T250 Alt A & C	0.44	ATV	CLOSED	15 Oct 03							17119			110129	
T250 Alt B	0.44	ATV	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T251 Alt A & C	0.3	STT	CLOSED	15 Oct 03							17119			110129	
T251 Alt B	0.3	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T252 Alt A & C	0.3	STT	CLOSED	15 Oct 03							17119			110129	
T252 Alt B	0.3	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T253 Alt A & C	0.2	STT	CLOSED	15 Oct 03							17119			110129	
T253 Alt B	0.2	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T254 Alt A & C	0.4	STT	CLOSED	15 Oct 03							17119			110129	
T254 Alt B	0.4	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
T255 Alt A & C	0.38	STT	CLOSED	15 Oct 03							17119			110129	
T255 Alt B	0.38	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T256 Alt A & C	0.43	STT	CLOSED	15 Oct 03							17119			110129	
T256 Alt B	0.43	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T257 Alt A & C	0.25	STT	CLOSED	15 Oct 03							17119			110129	
T257 Alt B	0.25	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T258 Alt A & C	0.36	JEEP	CLOSED	15 Oct 03							17119			110129	
T258 Alt B	0.36	JEEP	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T259 Alt A & C	0.4	STT	CLOSED	15 Oct 03							17119			110129	
T259 Alt B	0.4	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T260 Alt A & C	0.3	STT	CLOSED	15 Oct 03							17119			110129	
T260 Alt B	0.3	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T261 Alt A & C	0.87	STT	CLOSED	15 Oct 03							17119			110129	
T261 Alt B	0.87	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T262 Alt A & C	0.11	STT	CLOSED	15 Oct 03							17119			110129	
T262 Alt B	0.11	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T263 Alt A & C	0.64	STT	CLOSED	15 Oct 03							17119			110129	
T263 Alt B	0.64	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T264 Alt A & C	0.66	STT	CLOSED	15 Oct 03							17119			110129	
T264 Alt B	0.66	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T265 Alt A & C	0.24	STT	CLOSED	15 Oct 03							17119			110129	
T265 Alt B	0.24	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000
T266 Alt A & C	0.14	STT	CLOSED	15 Oct 03							17119			110129	
T266 Alt B	0.14	STT	OPEN	15 Oct 03	11000	12000	13000	14000	15000	16000	17000	18000	19000	110000	111000

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
R008	2.0	4WD	CLOSED	18 June 03	11010	12212	13000	14212	15212	16212	17000	18000	19000	110000	111000
R019			CLOSED		11139										
T110	0.933	JEEP	CLOSED	27 July 03	11232	12000	13000	14000	15212	16010	17000	18000	19000	110000	111000
T130	0.7	STT	CLOSED	27 July 03	11000	12212	13000	14212	15000	16000	17000	18000	19000	110000	111000
T131	1.6	STT	CLOSED	27 July 03	11010	12000	13000	14212	15000	16212	17000	18232	19000	110000	111000
T136	0.5		CLOSED	27 July 03	11000	12212	13000	14212	15212	16212	17000	18000	19000	110222	111000
T144	1.1	STT	CLOSED	27 July 03	11010	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T145	2.1	STT	CLOSED	27 July 03	11010	12212	13000	14212	15000	16010	17000	18000	19000	110000	111000
T149	0.3	JEEP	CLOSED	27 July 03							17119				
T152	0.54	MUT	CLOSED	27 July 03	11010	12212	13000	14212	15000	16212	17000	18000	19000	110000	111000
T154	0.873	STT	CLOSED	27 July 03	11252	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T155	3.158	MUT	CLOSED	27 July 03	11050	12212	13212	14212	15000	16212	17000	18000	19000	110000	111000
T156	0.35	MUT	CLOSED	27 July 03	11000	12000	13212	14212	15000	16010	17000	18000	19000	110000	111000
T157	1.15	Unim	CLOSED	27 July 03	11119	12212	13212	14212	15212	16000	17010	18000	19000	110000	111000
T160	0.216	JEEP	CLOSED	27 July 03	11000	12000	13000	14000	15000	16212	17000	18000	19000	110000	111000
T161	0.216	STT	CLOSED	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T172	1.4	JEEP	CLOSED	27 July 03	11000	12212	13000	14000	15000	16212	17000	18000	19000	110000	111000
T173	1.1		CLOSED	27 July 03	11119					16000					
T182	1.1	STT	CLOSED	27 July 03	11000	12000	13000	14000	15000	16010	17000	18000	19000	110000	111000
T188	1.2	STT	CLOSED	02 Sept 03	11232	12212	13000	14000	15000	16000	17119	18000	19000	110000	111000
T190	1.0	STT	CLOSED	27 July 03	11010	12000	13000	14212	15000	16212	17000	18000	19000	110000	111000

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR001	0.9	STT	CLOSED	10 Sept 03	11010						16010	17119				
OR002	0.3	STT	CLOSED	10 Sept 03								17119				
OR003	0.4	STT	CLOSED	10 Sept 03	11159											
OR004	0.2	ATV	CLOSED	10 Sept 03								17119				
OR005	0.3	STT	CLOSED	10 Sept 03		12119					16119					
OR006	0.1	STT	CLOSED	10 Sept 03		12119					16010					
OR007	.05	STT	CLOSED	10 Sept 03								17119				
OR008	0.1	STT	CLOSED	10 Sept 03							16015	17119				
OR010	0.4	STT	CLOSED	10 Sept 03	11119						16010					
OR011	0.4	STT	CLOSED	10 Sept 03	11119											
OR013	0.3	STT	CLOSED	10 Sept 03								17119				
OR014	0.8	STT	CLOSED	10 Sept 03	11119	12119					16119					
OR015	0.2	STT	CLOSED	10 Sept 03		12119						17119				
OR016	0.6	STT	CLOSED	10 Sept 03							16010	17119				
OR017	0.1	JEEP	CLOSED	10 Sept 03								17119			110119	
OR019	0.1	STT	CLOSED	10 Sept 03								17119			110119	
OR020	0.8	STT	CLOSED	10 Sept 03	11119	12119					16119					
OR021	0.2	STT	CLOSED	10 Sept 03								17119			110129	
OR022	0.2	STT	CLOSED	10 Sept 03							16119	17119				
OR024	0.02	STT	CLOSED	10 Sept 03		12119						17119				
OR025	0.1	JEEP	CLOSED	10 Sept 03	11119	12119										111119
OR029	0.1	JEEP	CLOSED	10 Sept 03												111119
OR031	0.1	ATV	CLOSED	10 Sept 03											110129	

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR032	0.1	ATV	CLOSED	10 Sept 03											110129	
OR033	0.3	ATV	CLOSED	10 Sept 03												111119
OR035	0.1	STT	CLOSED	10 Sept 03											110129	
OR036	2.1	STT	CLOSED	10 Sept 03					15119							111119
OR040	0.3	STT	CLOSED	10 Sept 03	11119											
OR041	0.1	STT	CLOSED	10 Sept 03												111119
OR042	0.3	STT	CLOSED	10 Sept 03											110129	
OR044	0.04	ATV	CLOSED	16 Sept 03							17119					111119
OR045	1.09	STT	CLOSED	16 Sept 03												111119
OR046	1.6	STT	CLOSED	16 Sept 03						16119						
OR047	0.5	STT	CLOSED	16 Sept 03	11169											
OR048	0.7	STT	CLOSED	16 Sept 03	11169											
OR049	0.3	STT	CLOSED	16 Sept 03	11119										110129	
OR050	0.7	STT	CLOSED	16 Sept 03	11119										110129	
OR051	0.1	STT	CLOSED	16 Sept 03												111119
OR052	0.2	STT	CLOSED	16 Sept 03												111119
OR053	0.2	ATV	CLOSED	16 Sept 03	11119	12119									110129	
OR056	1.0	STT	CLOSED	16 Sept 03	11169					16119						111119
OR057	2.7	JEEP	CLOSED	16 Sept 03	11119					16119					110129	
OR058	3.2	JEEP	CLOSED	16 Sept 03	11119	12119			15119		17119					
OR059	0.6	JEEP	CLOSED	16 Sept 03	11159											111119
OR062	0.1	STT	CLOSED	16 Sept 03	11119											111119
OR063	0.04	ATV	CLOSED	16 Sept 03												
OR065	0.16	STT	CLOSED	16 Sept 03	11159						17119				110129	

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
OR069	0.28	STT	CLOSED	16 Sept 03		12119								110129	
OR070	0.2	STT	CLOSED	16 Sept 03							17119			110129	
OR071	0.06	STT	CLOSED	16 Sept 03						16010	17119			110129	
OR073	0.2	STT	CLOSED	16 Sept 03							17119			110129	
OR075	0.25	STT	CLOSED	16 Sept 03	11119										111119
OR076	0.4	STT	CLOSED	16 Sept 03							17119			110129	
OR077	0.27	STT	CLOSED	16 Sept 03							17119			110129	
OR080	0.11	STT	CLOSED	16 Sept 03						16119	17119			110129	
OR081	0.48	STT	CLOSED	16 Sept 03	11159					16119					
OR082	0.15	STT	CLOSED	16 Sept 03							17119			110129	
OR084	0.4	STT	CLOSED	16 Sept 03	11119	12119				16119					
OR086	0.36	STT	CLOSED	16 Sept 03	11139	12119					17119			110129	
OR087	0.23	STT	CLOSED	16 Sept 03											111119
OR088	0.23	STT	CLOSED	16 Sept 03	11139										
OR089	0.2	STT	CLOSED	16 Sept 03										110129	
OR090	0.27	STT	CLOSED	16 Sept 03										110129	
OR091	0.08	STT	CLOSED	16 Sept 03										110129	
OR093	0.06	STT	CLOSED	16 Sept 03							17119			110129	
OR094	0.09	STT	CLOSED	16 Sept 03							17119			110129	
OR096	0.07	STT	CLOSED	16 Sept 03							17119			110129	
OR097	0.09	STT	CLOSED	16 Sept 03	11139						17119			110129	
OR098	0.73	STT	CLOSED	16 Sept 03	11139										
OR099	0.35	STT	CLOSED	16 Sept 03	11139										

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR100	0.57	STT	CLOSED	16 Sept 03	11139	12119					16010					
OR101	0.32	STT	CLOSED	16 Sept 03	11139	12119										
OR102	0.06	ATV	CLOSED	16 Sept 03											110129	
OR103	0.09	STT	CLOSED	16 Sept 03											110129	
OR104	0.77	STT	CLOSED	16 Sept 03							16119					
OR105	0.34	STT	CLOSED	16 Sept 03												111119
OR107	0.08	JEEP	CLOSED	16 Sept 03							16101				110129	
OR108	0.1	STT	CLOSED	16 Sept 03											110129	
OR109	0.19	STT	CLOSED	16 Sept 03											110129	
OR110	0.07	STT	CLOSED	16 Sept 03											110129	
OR111	0.3	STT	CLOSED	21 Sept 03							16010	17119			110129	
OR113	0.3	STT	CLOSED	21 Sept 03							16010	17119				
OR114	0.01	ATV	CLOSED	21 Sept 03							16000	17119				
OR115	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR116	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR117	0.1	STT	CLOSED	21 Sept 03							16000	17119				111119
OR118	0.1	STT	CLOSED	21 Sept 03							16000	17119				111119
OR119	0.2	STT	CLOSED	21 Sept 03	11139	12119					16000	17119				
OR121	0.04	STT	CLOSED	21 Sept 03	11139	12119					16000	17119				
OR122	0.3	ATV	CLOSED	21 Sept 03		12119					16000	17119				
OR123	0.1	STT	CLOSED	21 Sept 03							16119	17119				
OR124	0.1	STT	CLOSED	21 Sept 03							16119	17119				
OR126	1.4	STT	CLOSED	21 Sept 03	11139						16119	17119				

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR127	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR128	0.3	STT	CLOSED	21 Sept 03	11010						16000	17119			110129	
OR129	0.04	STT	CLOSED	21 Sept 03							16000					111119
OR130	0.04	STT	CLOSED	21 Sept 03							16000					111119
OR133	1.2	STT	CLOSED	21 Sept 03	11119						16000	17119			110129	
OR134	0.1	JEEP	CLOSED	21 Sept 03							16000					111119
OR135	0.5	ATV	CLOSED	21 Sept 03	11119	12119					16119					111119
OR136	0.1	ATV	CLOSED	21 Sept 03							16000					111119
OR137	0.1	STT	CLOSED	21 Sept 03							16119	17119				
OR138	0.1	STT	CLOSED	21 Sept 03							16000					111119
OR139	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR140	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR142	0.3	STT	CLOSED	21 Sept 03							16000	17119				
OR143	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR144	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR145	0.3	STT	CLOSED	21 Sept 03							16000	17119				
OR146	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR147	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR148	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR149	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR150	0.2	STT	CLOSED	21 Sept 03							16119					
OR151	0.1	STT	CLOSED	21 Sept 03							16000	17119				

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR152	0.4	ATV	CLOSED	21 Sept 03	11119		13119				16119	17119				
OR152	0.2	STT	CLOSED	21 Sept 03	11119		13119				16119	17119				
OR153	0.4	ATV	CLOSED	21 Sept 03	11119		13119				16119	17119				
OR154	0.1	ATV	CLOSED	21 Sept 03			13119				16000					111119
OR155	0.1	ATV	CLOSED	21 Sept 03			13119				16000					111119
OR156	0.3	STT	CLOSED	21 Sept 03			13119				16000	17119				
OR157	0.1	STT	CLOSED	21 Sept 03			13119				16000					111119
OR159	1.3	STT	CLOSED	21 Sept 03			13119				16000					
OR160	0.5	STT	CLOSED	21 Sept 03			13119				16119					
OR162	0.04	STT	CLOSED	21 Sept 03							16000	17119				
OR166	0.04	STT	CLOSED	21 Sept 03							16000					111119
OR167	0.05	STT	CLOSED	21 Sept 03							16000					111119
OR168	0.1	STT	CLOSED	21 Sept 03							16000					111119
OR169	0.2	ATV	CLOSED	21 Sept 03							16000	17119				
OR179	0.5	STT	CLOSED	21 Sept 03	11119						16000	17119				
OR180	0.3	STT	CLOSED	21 Sept 03							16000	17119				
OR181	0.2	STT	CLOSED	21 Sept 03	11119						16000					
OR182	0.04	STT	CLOSED	21 Sept 03	11119						16000	17119				
OR183	0.6	STT	CLOSED	21 Sept 03	11119						16000	17119				
OR184	0.1	STT	CLOSED	21 Sept 03							16000	17119				111119
OR185	0.1	STT	CLOSED	21 Sept 03							16000	17119				

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
OR194	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR199	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR200	0.3	STT	CLOSED	21 Sept 03						16000	17119				
OR208	0.8	STT	CLOSED	21 Sept 03			13119			16000	17119				
OR210	0.03	STT	CLOSED	21 Sept 03						16000					111119
OR212	0.5	STT	CLOSED	21 Sept 03						16000	17119				111119
OR213	0.2	STT	CLOSED	21 Sept 03	11119					16000	17119				111119
OR214	0.5	ATV	CLOSED	21 Sept 03	11119					16119					
OR216	1.6	STT	CLOSED	21 Sept 03	11119					16119	17119				
OR219	0.1	STT	CLOSED	21 Sept 03						16000	17119				
OR222	0.3	STT	CLOSED	21 Sept 03						16000	17119				111119
OR224	0.2	STT	CLOSED	21 Sept 03						16000	17119				111119
OR225	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR231	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR232	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR233	0.2	STT	CLOSED	21 Sept 03						16000					111119
OR234	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR238	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR241	0.3	STT	CLOSED	21 Sept 03						16000	17119				
OR242	0.6	ATV	CLOSED	21 Sept 03	11159		13119			16000	17119				
OR243	0.5	ATV	CLOSED	21 Sept 03			13119			16000	17119				
OR245	0.1	STT	CLOSED	21 Sept 03						16000	17119				
OR250	0.1	STT	CLOSED	21 Sept 03						16000	17119				

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR251	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR252	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR253	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR254	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR255	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR256	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR257	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR260	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR261	0.04	STT	CLOSED	21 Sept 03							16000	17119				
OR262	0.2	STT	CLOSED	21 Sept 03							16000	17119				
OR263	0.1	STT	CLOSED	21 Sept 03							16000	17119				
OR264	0.3	STT	CLOSED	21 Sept 03							16000	17119				
OR269	0.6	STT	CLOSED	21 Sept 03			12119				16000	17119				
OR270	0.5	STT	CLOSED	21 Sept 03			12119				16000	17119				
OR274	0.3	STT	CLOSED	21 Sept 03			12119				16000	17119				
OR276	0.1	STT	CLOSED	21 Sept 03			12119				16119	17119				
OR279	0.2	STT	CLOSED	21 Sept 03			12119				16000	17119				
OR281	0.1	STT	CLOSED	21 Sept 03							16000	17119			110119	
OR282	0.2	STT	CLOSED	21 Sept 03	11020						16000	17119			110119	
OR283	0.05	STT	CLOSED	21 Sept 03	11010						16000	17119				
OR284	0.1	STT	CLOSED	21 Sept 03	11010						16000	17119			110119	
OR285	0.3	STT	CLOSED	21 Sept 03	11010						16000	17119			110119	
OR286	0.3	STT	CLOSED	21 Sept 03							16000	17119				111119
OR288	0.2	STT	CLOSED	21 Sept 03							16000	17119				111119

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR288	0.6	STT	CLOSED	21 Sept 03	11159						16000					
OR289	0.2	STT	CLOSED	21 Sept 03							16000	17119			110129	
OR290	0.2	STT	CLOSED	21 Sept 03							16000	17119			110129	
OR292	0.1	STT	CLOSED	21 Sept 03							16000	17119				111119
OR293	0.03	STT	CLOSED	21 Sept 03							16000	17119				
OR295	0.3	STT	CLOSED	21 Sept 03		12129					16000					
OR296	0.3	STT	CLOSED	21 Sept 03		12129					16000					
OR301	0.2	STT	CLOSED	21 Sept 03	11010	12129					16000				110129	
OR302	0.2	STT	CLOSED	21 Sept 03	11010	12129					16000	17119				
OR303	0.04	STT	CLOSED	21 Sept 03	11010						16000					111119
OR304	0.5	STT	CLOSED	21 Sept 03	11010	12129					16000	17119			110129	
OR306	0.3	STT	CLOSED	21 Sept 03	11010	12129					16000	17119				
OR307	0.1	STT	CLOSED	21 Sept 03	11010	12129					16000	17119				
OR308	0.3	STT	CLOSED	21 Sept 03	11010	12129					16000	17119				
OR310	0.3	STT	CLOSED	21 Sept 03							16000	17119				
OR311	0.2	STT	CLOSED	21 Sept 03	11020	12129					16000					
OR312	0.1	STT	CLOSED	21 Sept 03	11010	12129					16000					
OR313	0.1	STT	CLOSED	21 Sept 03	11010	12129					16000					
OR314	0.2	STT	CLOSED	21 Sept 03	11020						16000					111119
OR317	0.2	STT	CLOSED	21 Sept 03	11020	12129					16000					
OR318	0.02	STT	CLOSED	21 Sept 03	11020	12129					16000					
OR319	0.5	STT	CLOSED	21 Sept 03	11020	12129					16000					111119
OR320	0.5	STT	CLOSED	21 Sept 03	11020	12129					16000					
OR321	0.2	STT	CLOSED	21 Sept 03	11010	12129					16000					111119
OR323	0.1	STT	CLOSED	21 Sept 03	11010						16000				110129	

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
OR326	0.3	STT	CLOSED	21 Sept 03						16000				110129	
OR327	0.3	STT	CLOSED	21 Sept 03						16000				110129	
OR385	0.1	STT	CLOSED	21 Sept 03						16000				110129	
OR387	0.1	ATV	CLOSED	21 Sept 03						16000				110129	
OR388	0.4	STT	CLOSED	21 Sept 03		12129				16000					111119
OR390	0.2	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR391	0.1	STT	CLOSED	21 Sept 03						16000	17119			110119	
OR393	0.6	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR394	0.3	STT	CLOSED	21 Sept 03	11139	12129				16000	17119			110129	
OR396	0.04	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR398	0.2	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR399	0.1	STT	CLOSED	21 Sept 03						16000				110129	
OR402	0.2	STT	CLOSED	21 Sept 03						16000					111119
OR403	0.1	STT	CLOSED	21 Sept 03						16000	17119				111119
OR404	0.1	STT	CLOSED	21 Sept 03						16000	17119				
OR405	0.1	STT	CLOSED	21 Sept 03						16000	17119				111119
OR406	0.2	STT	CLOSED	21 Sept 03	11010					16000					111119
OR408	0.04	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR434	0.1	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR435	0.1	ATV	CLOSED	21 Sept 03						16000	17119				
OR436	0.03	STT	CLOSED	21 Sept 03						16000	17119				111119
OR437	0.2	STT	CLOSED	21 Sept 03						16000	17119				111119
OR438	0.1	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR439	0.1	STT	CLOSED	21 Sept 03						16000	17119			110129	

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
OR440	0.3	STT	CLOSED	21 Sept 03						16000	17119				111119
OR442	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR443	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR444	0.1	STT	CLOSED	21 Sept 03						16000	17119				
OR446	0.1	STT	CLOSED	21 Sept 03						16119	17119			110129	
OR448	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR449	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR450	0.03	STT	CLOSED	21 Sept 03						16000	17119				
OR451	0.02	STT	CLOSED	21 Sept 03						16000	17119				111119
OR453	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR459	0.2	ATV	CLOSED	21 Sept 03		12129				16000				110119	
OR460	0.02	ATV	CLOSED	21 Sept 03		12129				16000	17119				111119
OR461	0.1	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR462	0.2	JEEP	CLOSED	21 Sept 03						16000	17119				
OR463	0.4	STT	CLOSED	21 Sept 03						16000	17119				111119
OR464	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR465	0.04	STT	CLOSED	21 Sept 03						16000	17119				111119
OR466	0.2	STT	CLOSED	21 Sept 03						16000	17119				
OR467	0.1	STT	CLOSED	21 Sept 03						16000	17119				111119
OR468	0.3	STT	CLOSED	21 Sept 03						16000	17119				
OR470	0.6	ATV	CLOSED	21 Sept 03		12129				16000	17119				
OR472	0.2	STT	CLOSED	21 Sept 03						16000	17119				111119
OR478	0.8	ATV	CLOSED	21 Sept 03						16000	17119				111119
OR479	0.1	STT	CLOSED	21 Sept 03						16000	17119				111119
OR480	0.4	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR480	0.1	JEEP	CLOSED	21 Sept 03						16000	17119			110129	

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2										
					Tier 1					2	3	Tier 4			
					1	2	3	4	5	6	7	8	9	10	11
OR481	0.1	ATV	CLOSED	21 Sept 03						16000	17119				111119
OR485	0.2	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR488	0.4	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR489	0.02	ATV	CLOSED	21 Sept 03						16000	17119				111119
OR492	0.4	STT	CLOSED	21 Sept 03						16000	17119				
OR493	2.1	STT	CLOSED	21 Sept 03	11159										
OR495	0.1	STT	CLOSED	21 Sept 03						16000	17119			110129	
OR496	0.3	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR497	0.6	STT	CLOSED	21 Sept 03		12119				16119	17119				
OR500	0.1	JEEP	CLOSED	21 Sept 03						16119	17119			110119	
OR514	0.6	STT	CLOSED	21 Sept 03	11119	12119				16000					
OR515	0.2	STT	CLOSED	21 Sept 03						16000					111119
OR516	0.2	STT	CLOSED	21 Sept 03						16000				110129	
OR518	0.1	ATV	CLOSED	21 Sept 03						16000	17119				
OR519	0.2	STT	CLOSED	21 Sept 03						16000					111119
OR520	0.1	STT	CLOSED	21 Sept 03						16000					111119
OR521	0.3	ATV	CLOSED	21 Sept 03		12119				16000	17119				
OR523	0.03	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR524	0.1	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR525	0.02	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR526	0.3	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR527	0.1	ATV	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR528	0.2	STT	CLOSED	21 Sept 03		12119				16000	17119			110129	
OR529	0.3	STT	CLOSED	21 Sept 03		12119				16119					
OR530	1.7	STT	CLOSED	21 Sept 03		12119				16119					
OR531	0.1	STT	CLOSED	21 Sept 03		12119				16119					

1 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR532	0.2	STT	CLOSED	21 Sept 03		12119					16010					
OR534	0.03	STT	CLOSED	21 Sept 03		12119					16000					
OR535	0.02	STT	CLOSED	21 Sept 03		12119					16000					
OR536	0.1	STT	CLOSED	21 Sept 03		12119					16000					
OR537	0.1	STT	CLOSED	21 Sept 03		12119					16000					
OR538	0.1	STT	CLOSED	21 Sept 03		12119					16000					
OR539	0.02	STT	CLOSED	21 Sept 03		12119					16000					
OR540	0.03	STT	CLOSED	21 Sept 03		12119					16000					
OR541	0.05	STT	CLOSED	21 Sept 03		12119					16000					
OR542	0.02	STT	CLOSED	21 Sept 03		12119					16000					
OR543	0.02	STT	CLOSED	21 Sept 03		12119					16000	17119			110119	
OR546	0.1	STT	CLOSED	21 Sept 03		12119					16119	17119				
OR547	0.03	STT	CLOSED	21 Sept 03	11139						16000	17119				111119
OR548	0.1	ATV	CLOSED	21 Sept 03	11139						16000	17119				111119
OR549	0.02	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR550	0.5	JEEP	CLOSED	21 Sept 03	11119						16119	17119				
OR551	1.5	JEEP	CLOSED	21 Sept 03	11119						16119	17119				
OR552	0.3	JEEP	CLOSED	21 Sept 03	11119						16119	17119				
OR553	0.6	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR554	0.2	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR555	0.2	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR556	0.3	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR557	0.3	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR557	0.1	JEEP	CLOSED	21 Sept 03	11119						16119	17119				
OR558	0.4	JEEP	CLOSED	21 Sept 03	11119						16119	17119				
OR559	0.02	JEEP	CLOSED	21 Sept 03	11119						16119	17119				

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx)

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR560	0.8	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR561	0.5	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR562	0.6	ATV	CLOSED	21 Sept 03	11119						16119	17119				
OR565	0.2	STT	CLOSED	21 Sept 03							16119	17119			110119	
OR567	0.04	STT	CLOSED	21 Sept 03	11139						16000	17119			110129	
OR568	0.1	STT	CLOSED	21 Sept 03	11139						16000	17119			110129	
OR569	0.1	STT	CLOSED	21 Sept 03	11139						16000	17119			110129	
OR573	0.4	STT	CLOSED	21 Sept 03	11139						16000	17119			110129	
OR574	0.2	STT	CLOSED	21 Sept 03	111139						16000	17119			110129	
OR575	0.3	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR576	0.2	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR577	0.1	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR578	0.3	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR579	0.1	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR580	0.02	STT	CLOSED	21 Sept 03		12119					16000	17119				
OR582	0.2	ATV	CLOSED	21 Sept 03		12119					16119	17119			110129	
OR586	2.9	STT	CLOSED	21 Sept 03		12119	13119				16119					
OR587	0.4	JEEP	CLOSED	21 Sept 03							16000	17119			110129	
OR588	0.3	STT	CLOSED	21 Sept 03	11119						16000	17119				
OR590	0.4	4WD	CLOSED	21 Sept 03		12119				15119	16000					
OR591	0.3	4WD	CLOSED	21 Sept 03		12119				15119	16000					

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx

HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 ROUTE DESIGNATION RECORD

Route Number	Route Length	Route TMO	Route Designation	Designation Date	Route Evaluation Criteria 1,2											
					Tier 1					2	3	Tier 4				
					1	2	3	4	5	6	7	8	9	10	11	
OR592	0.9	STT	CLOSED	21 Sept 03		12119				15119	16000					
OR593	0.1	STT	CLOSED	21 Sept 03		12119				15119	16000					
OR594	0.2	STT	CLOSED	21 Sept 03		12119				15119	16000					
OR595	0.3	STT	CLOSED	21 Sept 03		12119				15119	16000					
OR596	0.2	STT	CLOSED	21 Sept 03		12119				15119	16000					
OR597	1.1	STT	CLOSED	21 Sept 03		12119	15119	16000								

1Route 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, Transportation/manageability; 9, Admin Use/ROW's; 10, Route Proliferation/redundancy; 11, Route Continuity. 2 Route Evaluation Criteria Values, see Appendix in Route Designation and Designation Criteria EA (CA-190-2002-xx

ROUTE NUMBER	ROUTE TYPE	TRAIL LENGTH (miles)	ROUTE DESIGNATION Alternative A	ROUTE DESIGNATION Alternative B	ROUTE DESIGNATION Alternative C
BAKER	JEEP	3.01	ADMIN	ADMIN	ADMIN
BYLES	JEEP	2.20	ADMIN	ADMIN	ADMIN
CANE	JEEP	3.46	ADMIN	ADMIN	ADMIN
COAL RD	PAVED	51.74	OPEN	OPEN	OPEN
IDRIA RD	IMPR	3.94	OPEN	OPEN	OPEN
KCAC RD	PAVED	5.38	ADMIN	ADMIN	ADMIN
LARIUS	4WD R	0.29	CLOSED	CLOSED	CLOSED
R001	IMPR	9.38	OPEN	OPEN	OPEN
R002	4WD R	6.88	OPEN	OPEN	OPEN
R003	4WD R	0.32	OPEN	OPEN	OPEN
R004	4WD R	0.97	OPEN	OPEN	OPEN
R005	4WD R	5.82	OPEN	OPEN	OPEN
R006	4WD R	0.98	OPEN	OPEN	OPEN
R007A	JEEP	2.25	OPEN	OPEN	OPEN
R007B	JEEP	1.63	ADMIN	ADMIN	ADMIN
R008A	4WD R	1.52	OPEN	OPEN	OPEN
R008B	4WD R	1.97	CLOSE	CLOSE	CLOSE
R009	IMPR	0.88	ADMIN	ADMIN	ADMIN
R010A	JEEP	1.57	OPEN	OPEN	OPEN
R010B	JEEP	0.92	OPEN	OPEN	CLOSED
<b>R010C</b>	<b>JEEP</b>	<b>2.68</b>	<b>ADMIN</b>	<b>OPEN</b>	<b>CLOSED</b>
R011	IMPR	16.03	OPEN	OPEN	OPEN
R012	4WD R	0.42	ADMIN	ADMIN	ADMIN
R013	4WD R	1.14	OPEN	OPEN	ADMIN
R014	JEEP	1.33	OPEN	OPEN	OPEN
R015A	PAVED	2.67	OPEN	OPEN	OPEN
R015B	IMPR	2.06	OPEN	OPEN	OPEN
R016	JEEP	2.51	OPEN	OPEN	OPEN
R017	JEEP	1.81	LIMITED	LIMITED	LIMITED
R018	JEEP	2.76	LIMITED	LIMITED	LIMITED
R019A	IMPR	7.24	ADMIN	ADMIN	ADMIN
R019B	IMPR	1.40	CLOSED	CLOSED	CLOSED
R019C	IMPR	0.15	OPEN	OPEN	OPEN
T101	STT	1.49	OPEN	OPEN	OPEN
T103	JEEP	1.35	OPEN	OPEN	OPEN
T104	JEEP	4.45	OPEN	OPEN	OPEN
T105	JEEP	0.97	OPEN	OPEN	OPEN
T106	ATV	0.87	OPEN	OPEN	OPEN
T107	JEEP	1.56	OPEN	OPEN	OPEN
T108	ATV	0.98	OPEN	OPEN	OPEN
T109	STT	0.67	OPEN	OPEN	OPEN
T110	JEEP	0.88	CLOSED	CLOSED	CLOSED
T111	JEEP	0.87	OPEN	OPEN	OPEN
T112	ATV	0.46	OPEN	OPEN	OPEN

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
T113	ATV	1.52	OPEN	OPEN	OPEN
T114	STT	1.21	OPEN	OPEN	OPEN
T115	JEEP	2.14	OPEN	OPEN	OPEN
T116	STT	2.58	OPEN	OPEN	OPEN
T117	STT	1.28	OPEN	OPEN	OPEN
T118	STT	0.12	CLOSED	CLOSED	CLOSED
T119	ATV	1.21	OPEN	OPEN	OPEN
T120	JEEP	1.71	OPEN	OPEN	OPEN
T121	ATV	0.37	OPEN	OPEN	OPEN
T122	STT	0.49	OPEN	OPEN	OPEN
T123	STT	0.27	OPEN	OPEN	OPEN
T124A	STT	1.45	OPEN	OPEN	OPEN
T124B	STT	1.28	OPEN	OPEN	CLOSED
T125	ATV	4.88	OPEN	OPEN	OPEN
T126	STT	1.17	OPEN	OPEN	OPEN
T127	STT	0.40	OPEN	OPEN	OPEN
T128	ATV	1.92	OPEN	OPEN	OPEN
T129	STT	0.77	OPEN	OPEN	OPEN
T130	STT	0.70	CLOSED	CLOSED	CLOSED
T131	STT	0.64	CLOSED	CLOSED	CLOSED
T132	JEEP	1.19	OPEN	OPEN	OPEN
T133	JEEP	0.33	OPEN	OPEN	OPEN
T134	JEEP	1.12	OPEN	OPEN	OPEN
T135	STT	1.11	OPEN	OPEN	OPEN
T136	JEEP	0.50	CLOSED	CLOSED	CLOSED
T137	STT	2.69	OPEN	OPEN	OPEN
T138	STT	0.72	OPEN	OPEN	OPEN
T139	JEEP	0.78	OPEN	OPEN	OPEN
T140	JEEP	0.85	OPEN	OPEN	OPEN
T141	JEEP	0.98	OPEN	OPEN	OPEN
T142	STT	0.72	OPEN	OPEN	OPEN
T143	JEEP	1.32	OPEN	OPEN	OPEN
T144	STT	1.16	CLOSED	CLOSED	CLOSED
T145	STT	2.06	CLOSED	CLOSED	CLOSED
T147	JEEP	0.97	OPEN	OPEN	OPEN
T148	JEEP	1.47	OPEN	OPEN	OPEN
T149A	JEEP	0.26	OPEN	OPEN	OPEN
T149B	JEEP	0.27	CLOSED	CLOSED	CLOSED
T150	JEEP	1.19	OPEN	OPEN	OPEN
T151A	4WD R	5.12	OPEN	OPEN	OPEN
T151B	4WD R	1.20	CLOSED	CLOSED	CLOSED
T152	ATV	0.54	CLOSED	CLOSED	CLOSED
T153	JEEP	3.04	CLOSED	OPEN	CLOSED
T154	STT	0.84	CLOSED	CLOSED	CLOSED

		TRAIL	ROUTE	ROUTE	ROUTE
ROUTE	ROUTE	LENGTH	DESIGNATION	DESIGNATION	DESIGNATION
NUMBER	TYPE	(miles)	Alternative A	Alternative B	Alternative C
T155	ATV	3.16	CLOSED	CLOSED	CLOSED
T156	ATV	0.35	CLOSED	CLOSED	CLOSED
T157	JEEP	1.19	CLOSED	CLOSED	CLOSED
T158A	4WD R	1.35	OPEN	OPEN	OPEN
<b>T158B</b>	<b>4WD R</b>	<b>1.03</b>	<b>OPEN</b>	<b>OPEN</b>	<b>ADMIN</b>
T159	JEEP	3.53	OPEN	OPEN	OPEN
T160	JEEP	0.22	CLOSED	CLOSED	CLOSED
T161	STT	0.22	CLOSED	CLOSED	CLOSED
<b>T162</b>	<b>STT</b>	<b>0.60</b>	<b>OPEN</b>	<b>OPEN</b>	<b>CLOSED</b>
T163	STT	1.53	OPEN	OPEN	OPEN
T164	STT	1.61	OPEN	OPEN	OPEN
T165	STT	0.97	OPEN	OPEN	OPEN
T166	STT	5.02	OPEN	OPEN	OPEN
T167	STT	0.83	OPEN	OPEN	OPEN
T168	JEEP	1.14	OPEN	OPEN	OPEN
T169	ATV	1.20	OPEN	OPEN	OPEN
T170	PAVED	0.44	OPEN	OPEN	OPEN
<b>T171A</b>	<b>ATV</b>	<b>2.29</b>	<b>CLOSED</b>	<b>LIMITED</b>	<b>CLOSED</b>
<b>T171B</b>	<b>JEEP</b>	<b>2.16</b>	<b>CLOSED</b>	<b>LIMITED</b>	<b>CLOSED</b>
T172A	JEEP	0.65	CLOSED	CLOSED	CLOSED
T172B	JEEP	0.16	CLOSED	CLOSED	CLOSED
T173	STT	1.08	CLOSED	CLOSED	CLOSED
T175	STT	0.93	OPEN	OPEN	OPEN
T176	ATV	1.05	OPEN	OPEN	OPEN
T177A	STT	0.69	CLOSED	CLOSED	CLOSED
T177B	ATV	0.80	CLOSED	CLOSED	CLOSED
T178	ATV	1.95	OPEN	OPEN	OPEN
T179	JEEP	0.11	OPEN	OPEN	OPEN
T181	STT	3.18	OPEN	OPEN	OPEN
<b>T182</b>	<b>STT</b>	<b>0.70</b>	<b>CLOSED</b>	<b>OPEN</b>	<b>CLOSED</b>
T183	STT	1.29	OPEN	OPEN	OPEN
T184	STT	6.03	OPEN	OPEN	OPEN
T185	STT	0.56	OPEN	OPEN	OPEN
T188	STT	1.17	CLOSED	CLOSED	CLOSED
T189A	JEEP	0.91	OPEN	OPEN	OPEN
<b>T189B</b>	<b>JEEP</b>	<b>0.56</b>	<b>OPEN</b>	<b>OPEN</b>	<b>CLOSED</b>
<b>T189C</b>	<b>ATV</b>	<b>3.19</b>	<b>OPEN</b>	<b>OPEN</b>	<b>CLOSED</b>
T190	STT	1.04	CLOSED	CLOSED	CLOSED
T191	STT	2.12	OPEN	OPEN	OPEN
T192	STT	0.35	OPEN	OPEN	OPEN
<b>T193</b>	<b>STT</b>	<b>2.80</b>	<b>OPEN</b>	<b>OPEN</b>	<b>CLOSED</b>
T194	STT	2.26	OPEN	OPEN	OPEN
T195	STT	0.77	OPEN	OPEN	OPEN
T196	STT	0.26	OPEN	OPEN	OPEN

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
T197	STT	0.50	OPEN	OPEN	OPEN
T198	STT	2.39	OPEN	OPEN	OPEN
T199	STT	0.58	OPEN	OPEN	OPEN
T200	STT	0.64	OPEN	OPEN	OPEN
T201	STT	0.53	OPEN	OPEN	OPEN
T202	STT	0.60	OPEN	OPEN	OPEN
T203	STT	1.47	OPEN	OPEN	OPEN
T204	STT	0.79	OPEN	OPEN	OPEN
T205	STT	0.82	OPEN	OPEN	OPEN
T206	STT	1.39	OPEN	OPEN	OPEN
T207	STT	0.37	OPEN	OPEN	OPEN
T208	STT	2.30	OPEN	OPEN	OPEN
T209	ATV	1.95	OPEN	OPEN	OPEN
T210	STT	1.62	OPEN	OPEN	OPEN
T211	STT	1.24	OPEN	OPEN	OPEN
T212	STT	2.77	CLOSED	OPEN	CLOSED
T213	ATV	1.53	OPEN	OPEN	OPEN
T214	STT	0.39	OPEN	OPEN	OPEN
T215	ATV	1.06	OPEN	OPEN	OPEN
T216	ATV	6.00	OPEN	OPEN	OPEN
T217A	ATV	0.13	ADMIN	ADMIN	ADMIN
T217B	ATV	0.68	CLOSED	CLOSED	CLOSED
T218	STT	1.49	OPEN	OPEN	OPEN
T219	ATV	1.15	CLOSED	LIMITED	CLOSED
T220	JEEP	3.59	LIMITED	LIMITED	CLOSED
T221	JEEP	0.71	LIMITED	LIMITED	CLOSED
T222	STT	0.78	OPEN	OPEN	OPEN
T223	STT	0.69	OPEN	OPEN	OPEN
T224	STT	1.66	OPEN	OPEN	OPEN
T225	STT	1.07	OPEN	OPEN	OPEN
T226	STT	1.55	OPEN	OPEN	OPEN
T227	STT	0.44	OPEN	OPEN	OPEN
T228	STT	0.42	OPEN	OPEN	OPEN
T229	STT	0.75	OPEN	OPEN	OPEN
T230	STT	0.15	OPEN	OPEN	OPEN
T231	STT	0.41	OPEN	OPEN	OPEN
T232	IMPR	0.17	OPEN	OPEN	OPEN
T233	4WD R	0.25	ADMIN	ADMIN	ADMIN
T234	ATV	0.74	OPEN	OPEN	OPEN
T235	STT	1.50	OPEN	OPEN	OPEN
T236	STT	1.03	OPEN	OPEN	OPEN
T237	STT	1.80	OPEN	OPEN	OPEN
T238	STT	0.44	OPEN	OPEN	OPEN
T239	STT	0.35	OPEN	OPEN	OPEN

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
T240	4WD R	0.58	ADMIN	ADMIN	ADMIN
T241	STT	0.59	OPEN	OPEN	OPEN
T242	STT	1.15	CLOSED	OPEN	CLOSED
T243	STT	1.18	CLOSED	OPEN	CLOSED
T244	STT	0.49	CLOSED	OPEN	CLOSED
T245	STT	0.69	CLOSED	OPEN	CLOSED
T246	STT	0.20	CLOSED	OPEN	CLOSED
T247	STT	0.30	CLOSED	OPEN	CLOSED
T248	STT	0.20	CLOSED	OPEN	CLOSED
T249	STT	0.23	CLOSED	OPEN	CLOSED
T250	STT	0.44	CLOSED	OPEN	CLOSED
T251	STT	0.31	CLOSED	OPEN	CLOSED
T252	STT	0.25	CLOSED	OPEN	CLOSED
T253	STT	0.17	CLOSED	OPEN	CLOSED
T254	STT	0.38	CLOSED	OPEN	CLOSED
T255	STT	0.38	CLOSED	OPEN	CLOSED
T256	STT	0.43	CLOSED	OPEN	CLOSED
T257	ATV	0.25	CLOSED	OPEN	CLOSED
T258	JEEP	0.37	CLOSED	OPEN	CLOSED
T259	STT	0.39	CLOSED	OPEN	CLOSED
T260	STT	0.32	CLOSED	OPEN	CLOSED
T261	STT	0.87	CLOSED	OPEN	CLOSED
T262	STT	0.11	CLOSED	OPEN	CLOSED
T263	STT	0.61	CLOSED	OPEN	CLOSED
T264	STT	0.66	CLOSED	OPEN	CLOSED
T265	STT	0.24	CLOSED	OPEN	CLOSED
T266	STT	0.69	CLOSED	CLOSED	CLOSED
OR001	STT	0.98	CLOSED	CLOSED	CLOSED
OR002	STT	0.03	CLOSED	CLOSED	CLOSED
OR003	STT	0.43	CLOSED	CLOSED	CLOSED
OR004	ATV	0.20	CLOSED	CLOSED	CLOSED
OR005	STT	0.29	CLOSED	CLOSED	CLOSED
OR006	STT	0.10	CLOSED	CLOSED	CLOSED
OR007	STT	0.05	CLOSED	CLOSED	CLOSED
OR009	STT	0.07	CLOSED	CLOSED	CLOSED
OR010	STT	0.22	CLOSED	CLOSED	CLOSED
OR014	STT	0.74	CLOSED	CLOSED	CLOSED
OR015	STT	0.17	CLOSED	CLOSED	CLOSED
OR016	STT	0.59	CLOSED	CLOSED	CLOSED
OR017	JEEP	0.13	CLOSED	CLOSED	CLOSED
OR019	STT	0.06	CLOSED	CLOSED	CLOSED
OR020	STT	0.73	CLOSED	CLOSED	CLOSED
OR021	STT	0.15	CLOSED	CLOSED	CLOSED
OR022	STT	0.17	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR024	STT	0.02	CLOSED	CLOSED	CLOSED
OR025	JEEP	0.07	CLOSED	CLOSED	CLOSED
OR029	JEEP	0.06	CLOSED	CLOSED	CLOSED
OR031	ATV	0.07	CLOSED	CLOSED	CLOSED
OR032	ATV	0.12	CLOSED	CLOSED	CLOSED
OR033	ATV	0.26	CLOSED	CLOSED	CLOSED
OR035	STT	0.13	CLOSED	CLOSED	CLOSED
OR036	STT	2.06	CLOSED	CLOSED	CLOSED
OR040	STT	0.34	CLOSED	CLOSED	CLOSED
OR041	STT	0.06	CLOSED	CLOSED	CLOSED
OR042	STT	0.32	CLOSED	CLOSED	CLOSED
OR044	ATV	0.04	CLOSED	CLOSED	CLOSED
OR045	STT	1.09	CLOSED	CLOSED	CLOSED
OR046	STT	1.58	CLOSED	CLOSED	CLOSED
OR047	STT	0.50	CLOSED	CLOSED	CLOSED
OR048	STT	0.70	CLOSED	CLOSED	CLOSED
OR049	STT	0.30	CLOSED	CLOSED	CLOSED
OR050	STT	0.74	CLOSED	CLOSED	CLOSED
OR051	STT	0.08	CLOSED	CLOSED	CLOSED
OR052	STT	0.17	CLOSED	CLOSED	CLOSED
OR053	ATV	0.25	CLOSED	CLOSED	CLOSED
OR056	STT	0.94	CLOSED	CLOSED	CLOSED
OR057	JEEP	0.17	CLOSED	CLOSED	CLOSED
OR058	JEEP	5.63	CLOSED	CLOSED	CLOSED
OR059	JEEP	0.56	CLOSED	CLOSED	CLOSED
OR062	STT	0.08	CLOSED	CLOSED	CLOSED
OR063	ATV	0.03	CLOSED	CLOSED	CLOSED
OR065	STT	0.16	CLOSED	CLOSED	CLOSED
OR069	STT	0.29	CLOSED	CLOSED	CLOSED
OR070	STT	0.20	CLOSED	CLOSED	CLOSED
OR071	STT	0.06	CLOSED	CLOSED	CLOSED
OR073	STT	0.20	CLOSED	CLOSED	CLOSED
OR075	STT	0.25	CLOSED	CLOSED	CLOSED
OR081	STT	0.47	CLOSED	CLOSED	CLOSED
OR082	STT	0.14	CLOSED	CLOSED	CLOSED
OR083	STT	0.29	CLOSED	CLOSED	CLOSED
OR084	STT	0.42	CLOSED	CLOSED	CLOSED
OR085	STT	0.15	CLOSED	CLOSED	CLOSED
OR086	STT	0.36	CLOSED	CLOSED	CLOSED
OR087	STT	0.23	CLOSED	CLOSED	CLOSED
OR088	STT	0.23	CLOSED	CLOSED	CLOSED
OR089	STT	0.20	CLOSED	CLOSED	CLOSED
OR090	STT	0.27	CLOSED	CLOSED	CLOSED
OR091	STT	0.08	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR093	STT	0.06	CLOSED	CLOSED	CLOSED
OR094	STT	0.09	CLOSED	CLOSED	CLOSED
OR096	STT	0.07	CLOSED	CLOSED	CLOSED
OR097	STT	0.10	CLOSED	CLOSED	CLOSED
OR098	STT	0.72	CLOSED	CLOSED	CLOSED
OR099	STT	0.35	CLOSED	CLOSED	CLOSED
OR100	STT	0.06	CLOSED	CLOSED	CLOSED
OR101	STT	0.32	CLOSED	CLOSED	CLOSED
OR102	ATV	0.06	CLOSED	CLOSED	CLOSED
OR103	STT	0.09	CLOSED	CLOSED	CLOSED
OR104	STT	0.76	CLOSED	CLOSED	CLOSED
OR105	STT	0.34	CLOSED	CLOSED	CLOSED
OR106	STT	0.26	CLOSED	CLOSED	CLOSED
OR107	JEEP	0.08	CLOSED	CLOSED	CLOSED
OR108	STT	0.10	CLOSED	CLOSED	CLOSED
OR109	STT	0.19	CLOSED	CLOSED	CLOSED
OR110	STT	0.07	CLOSED	CLOSED	CLOSED
OR111	STT	0.32	CLOSED	CLOSED	CLOSED
OR113	STT	0.26	CLOSED	CLOSED	CLOSED
OR114	ATV	0.01	CLOSED	CLOSED	CLOSED
OR115	STT	0.07	CLOSED	CLOSED	CLOSED
OR116	STT	0.13	CLOSED	CLOSED	CLOSED
OR117	STT	0.06	CLOSED	CLOSED	CLOSED
OR118	STT	0.07	CLOSED	CLOSED	CLOSED
OR119	STT	0.20	CLOSED	CLOSED	CLOSED
OR121	STT	0.04	CLOSED	CLOSED	CLOSED
OR122	ATV	0.28	CLOSED	CLOSED	CLOSED
OR123	STT	0.11	CLOSED	CLOSED	CLOSED
OR124	STT	0.13	CLOSED	CLOSED	CLOSED
OR126	STT	1.41	CLOSED	CLOSED	CLOSED
OR127	STT	0.10	CLOSED	CLOSED	CLOSED
OR128	STT	0.25	CLOSED	CLOSED	CLOSED
OR129	STT	0.04	CLOSED	CLOSED	CLOSED
OR130	STT	0.04	CLOSED	CLOSED	CLOSED
OR133	STT	1.23	CLOSED	CLOSED	CLOSED
OR134	JEEP	0.08	CLOSED	CLOSED	CLOSED
OR135	ATV	0.51	CLOSED	CLOSED	CLOSED
OR136	ATV	0.06	CLOSED	CLOSED	CLOSED
OR137	STT	0.11	CLOSED	CLOSED	CLOSED
OR138	STT	0.06	CLOSED	CLOSED	CLOSED
OR139	STT	0.15	CLOSED	CLOSED	CLOSED
OR140	STT	0.12	CLOSED	CLOSED	CLOSED
OR142	STT	0.31	CLOSED	CLOSED	CLOSED
OR143	STT	0.15	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR144	STT	0.14	CLOSED	CLOSED	CLOSED
OR145	STT	0.30	CLOSED	CLOSED	CLOSED
OR146	STT	0.11	CLOSED	CLOSED	CLOSED
OR147	STT	0.18	CLOSED	CLOSED	CLOSED
OR148	STT	0.14	CLOSED	CLOSED	CLOSED
OR149	STT	0.17	CLOSED	CLOSED	CLOSED
OR150	STT	0.32	CLOSED	CLOSED	CLOSED
OR152	ATV	0.60	CLOSED	CLOSED	CLOSED
OR153	ATV	0.42	CLOSED	CLOSED	CLOSED
OR154	ATV	0.09	CLOSED	CLOSED	CLOSED
OR155	ATV	0.11	CLOSED	CLOSED	CLOSED
OR156	STT	0.26	CLOSED	CLOSED	CLOSED
OR157	STT	0.12	CLOSED	CLOSED	CLOSED
OR159	STT	1.27	CLOSED	CLOSED	CLOSED
OR160	STT	0.46	CLOSED	CLOSED	CLOSED
OR162	STT	0.04	CLOSED	CLOSED	CLOSED
OR166	STT	0.04	CLOSED	CLOSED	CLOSED
OR167	STT	0.05	CLOSED	CLOSED	CLOSED
OR168	STT	0.06	CLOSED	CLOSED	CLOSED
OR169	ATV	0.23	CLOSED	CLOSED	CLOSED
OR179	STT	0.50	CLOSED	CLOSED	CLOSED
OR180	STT	0.32	CLOSED	CLOSED	CLOSED
OR182	STT	0.21	CLOSED	CLOSED	CLOSED
OR183	STT	0.63	CLOSED	CLOSED	CLOSED
OR184	STT	0.05	CLOSED	CLOSED	CLOSED
OR185	STT	0.07	CLOSED	CLOSED	CLOSED
OR194	STT	0.07	CLOSED	CLOSED	CLOSED
OR199	STT	0.06	CLOSED	CLOSED	CLOSED
OR200	STT	0.29	CLOSED	CLOSED	CLOSED
OR208	STT	0.84	CLOSED	CLOSED	CLOSED
OR210	STT	0.03	CLOSED	CLOSED	CLOSED
OR212	STT	0.47	CLOSED	CLOSED	CLOSED
OR213	STT	0.15	CLOSED	CLOSED	CLOSED
OR214	ATV	0.40	CLOSED	CLOSED	CLOSED
OR216	STT	1.71	CLOSED	CLOSED	CLOSED
OR219	STT	0.09	CLOSED	CLOSED	CLOSED
OR222	STT	0.26	CLOSED	CLOSED	CLOSED
OR224	STT	0.18	CLOSED	CLOSED	CLOSED
OR225	STT	0.20	CLOSED	CLOSED	CLOSED
OR226	STT	0.10	CLOSED	CLOSED	CLOSED
OR231	STT	0.07	CLOSED	CLOSED	CLOSED
OR232	STT	0.13	CLOSED	CLOSED	CLOSED
OR233	STT	0.13	CLOSED	CLOSED	CLOSED
OR234	STT	0.14	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR238	STT	0.07	CLOSED	CLOSED	CLOSED
OR241	STT	0.30	CLOSED	CLOSED	CLOSED
OR242	ATV	0.55	CLOSED	CLOSED	CLOSED
OR243	ATV	0.53	CLOSED	CLOSED	CLOSED
OR245	STT	0.08	CLOSED	CLOSED	CLOSED
OR250	STT	0.24	CLOSED	CLOSED	CLOSED
OR252	STT	0.10	CLOSED	CLOSED	CLOSED
OR253	STT	0.18	CLOSED	CLOSED	CLOSED
OR254	STT	0.07	CLOSED	CLOSED	CLOSED
OR255	STT	0.44	CLOSED	CLOSED	CLOSED
OR256	STT	0.14	CLOSED	CLOSED	CLOSED
OR257	STT	0.07	CLOSED	CLOSED	CLOSED
OR260	STT	0.08	CLOSED	CLOSED	CLOSED
OR261	STT	0.04	CLOSED	CLOSED	CLOSED
OR262	STT	0.17	CLOSED	CLOSED	CLOSED
OR263	STT	0.05	CLOSED	CLOSED	CLOSED
OR264	STT	0.27	CLOSED	CLOSED	CLOSED
OR265	STT	0.21	CLOSED	CLOSED	CLOSED
OR269	STT	0.57	CLOSED	CLOSED	CLOSED
OR270	STT	0.24	CLOSED	CLOSED	CLOSED
OR274	STT	0.28	CLOSED	CLOSED	CLOSED
OR276	STT	0.09	CLOSED	CLOSED	CLOSED
OR279	STT	0.22	CLOSED	CLOSED	CLOSED
OR281	STT	0.08	CLOSED	CLOSED	CLOSED
OR282	STT	0.26	CLOSED	CLOSED	CLOSED
OR283	STT	0.05	CLOSED	CLOSED	CLOSED
OR284	STT	0.11	CLOSED	CLOSED	CLOSED
OR285	STT	0.33	CLOSED	CLOSED	CLOSED
OR286	STT	0.33	CLOSED	CLOSED	CLOSED
OR288	STT	2.65	CLOSED	CLOSED	CLOSED
OR289	STT	0.20	CLOSED	CLOSED	CLOSED
OR290	STT	0.24	CLOSED	CLOSED	CLOSED
OR292	STT	0.14	CLOSED	CLOSED	CLOSED
OR293	STT	0.03	CLOSED	CLOSED	CLOSED
OR295	STT	0.28	CLOSED	CLOSED	CLOSED
OR296	STT	0.25	CLOSED	CLOSED	CLOSED
OR297	STT	0.31	CLOSED	CLOSED	CLOSED
OR298	STT	0.21	CLOSED	CLOSED	CLOSED
OR300	STT	0.11	CLOSED	CLOSED	CLOSED
OR301	STT	0.25	CLOSED	CLOSED	CLOSED
OR302	STT	0.21	CLOSED	CLOSED	CLOSED
OR303	STT	0.04	CLOSED	CLOSED	CLOSED
OR304	STT	0.50	CLOSED	CLOSED	CLOSED
OR306	STT	0.28	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR307	STT	0.13	CLOSED	CLOSED	CLOSED
OR308	STT	0.26	CLOSED	CLOSED	CLOSED
OR310	STT	0.25	CLOSED	CLOSED	CLOSED
OR311	STT	0.24	CLOSED	CLOSED	CLOSED
OR312	STT	0.09	CLOSED	CLOSED	CLOSED
OR313	STT	0.13	CLOSED	CLOSED	CLOSED
OR314	STT	0.15	CLOSED	CLOSED	CLOSED
OR317	STT	0.16	CLOSED	CLOSED	CLOSED
OR319	STT	0.48	CLOSED	CLOSED	CLOSED
OR320	STT	0.53	CLOSED	CLOSED	CLOSED
OR321	STT	0.20	CLOSED	CLOSED	CLOSED
OR323	STT	0.10	CLOSED	CLOSED	CLOSED
OR326	STT	0.25	CLOSED	CLOSED	CLOSED
OR327	STT	0.31	CLOSED	CLOSED	CLOSED
OR385	STT	0.08	CLOSED	CLOSED	CLOSED
OR387	ATV	0.13	CLOSED	CLOSED	CLOSED
OR388	STT	0.39	CLOSED	CLOSED	CLOSED
OR390	STT	0.24	CLOSED	CLOSED	CLOSED
OR391	STT	0.11	CLOSED	CLOSED	CLOSED
OR392	STT	0.30	CLOSED	CLOSED	CLOSED
OR393	STT	0.07	CLOSED	CLOSED	CLOSED
OR394	STT	0.31	CLOSED	CLOSED	CLOSED
OR396	STT	0.14	CLOSED	CLOSED	CLOSED
OR398	STT	0.04	CLOSED	CLOSED	CLOSED
OR399	STT	0.09	CLOSED	CLOSED	CLOSED
OR402	STT	0.06	CLOSED	CLOSED	CLOSED
OR403	STT	0.06	CLOSED	CLOSED	CLOSED
OR404	STT	0.07	CLOSED	CLOSED	CLOSED
OR405	STT	0.10	CLOSED	CLOSED	CLOSED
OR405	STT	0.02	CLOSED	CLOSED	CLOSED
OR406	STT	0.16	CLOSED	CLOSED	CLOSED
OR408	STT	0.04	CLOSED	CLOSED	CLOSED
OR434	STT	0.11	CLOSED	CLOSED	CLOSED
OR435	ATV	0.09	CLOSED	CLOSED	CLOSED
OR436	STT	0.04	CLOSED	CLOSED	CLOSED
OR437	STT	0.05	CLOSED	CLOSED	CLOSED
OR438	STT	0.08	CLOSED	CLOSED	CLOSED
OR439	STT	0.10	CLOSED	CLOSED	CLOSED
OR440	STT	0.20	CLOSED	CLOSED	CLOSED
OR441	STT	0.11	CLOSED	CLOSED	CLOSED
OR442	STT	0.16	CLOSED	CLOSED	CLOSED
OR443	STT	0.17	CLOSED	CLOSED	CLOSED
OR444	STT	0.08	CLOSED	CLOSED	CLOSED
OR446	STT	0.09	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR448	STT	0.19	CLOSED	CLOSED	CLOSED
OR449	STT	0.19	CLOSED	CLOSED	CLOSED
OR450	STT	0.02	CLOSED	CLOSED	CLOSED
OR451	STT	0.02	CLOSED	CLOSED	CLOSED
OR453	STT	0.15	CLOSED	CLOSED	CLOSED
OR454	STT	0.23	CLOSED	CLOSED	CLOSED
OR459	ATV	0.06	CLOSED	CLOSED	CLOSED
OR460	ATV	0.03	CLOSED	CLOSED	CLOSED
OR461	STT	0.09	CLOSED	CLOSED	CLOSED
OR462	JEEP	0.07	CLOSED	CLOSED	CLOSED
OR463	STT	0.06	CLOSED	CLOSED	CLOSED
OR464	STT	0.19	CLOSED	CLOSED	CLOSED
OR465	STT	0.04	CLOSED	CLOSED	CLOSED
OR466	STT	0.06	CLOSED	CLOSED	CLOSED
OR467	STT	0.05	CLOSED	CLOSED	CLOSED
OR468	STT	0.26	CLOSED	CLOSED	CLOSED
OR470	ATV	0.30	CLOSED	CLOSED	CLOSED
OR472	STT	0.14	CLOSED	CLOSED	CLOSED
OR473	STT	0.09	CLOSED	CLOSED	CLOSED
OR478	ATV	0.76	CLOSED	CLOSED	CLOSED
OR479	STT	0.11	CLOSED	CLOSED	CLOSED
OR480	STT	0.47	CLOSED	CLOSED	CLOSED
OR481	ATV	0.11	CLOSED	CLOSED	CLOSED
OR485	STT	0.19	CLOSED	CLOSED	CLOSED
OR488	STT	0.38	CLOSED	CLOSED	CLOSED
OR489	ATV	0.02	CLOSED	CLOSED	CLOSED
OR492	STT	0.37	CLOSED	CLOSED	CLOSED
OR495	STT	0.07	CLOSED	CLOSED	CLOSED
OR496	STT	0.31	CLOSED	CLOSED	CLOSED
OR497	STT	0.65	CLOSED	CLOSED	CLOSED
OR514	STT	0.58	CLOSED	CLOSED	CLOSED
OR515	STT	0.24	CLOSED	CLOSED	CLOSED
OR516	STT	0.22	CLOSED	CLOSED	CLOSED
OR517	ATV	0.15	CLOSED	CLOSED	CLOSED
OR518	STT	0.21	CLOSED	CLOSED	CLOSED
OR519	STT	0.16	CLOSED	CLOSED	CLOSED
OR520	STT	0.10	CLOSED	CLOSED	CLOSED
OR521	ATV	0.31	CLOSED	CLOSED	CLOSED
OR523	STT	0.03	CLOSED	CLOSED	CLOSED
OR524	STT	0.05	CLOSED	CLOSED	CLOSED
OR525	STT	0.02	CLOSED	CLOSED	CLOSED
OR526	STT	0.30	CLOSED	CLOSED	CLOSED
OR527	ATV	0.09	CLOSED	CLOSED	CLOSED
OR528	STT	0.18	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR529	STT	0.24	CLOSED	CLOSED	CLOSED
OR530	STT	1.81	CLOSED	CLOSED	CLOSED
OR531	STT	0.09	CLOSED	CLOSED	CLOSED
OR532	STT	0.24	CLOSED	CLOSED	CLOSED
OR533	STT	0.13	CLOSED	CLOSED	CLOSED
OR534	STT	0.05	CLOSED	CLOSED	CLOSED
OR535	STT	0.18	CLOSED	CLOSED	CLOSED
OR536	STT	0.07	CLOSED	CLOSED	CLOSED
OR537	STT	0.21	CLOSED	CLOSED	CLOSED
OR538	STT	0.04	CLOSED	CLOSED	CLOSED
OR539	STT	0.01	CLOSED	CLOSED	CLOSED
OR540	STT	0.03	CLOSED	CLOSED	CLOSED
OR541	STT	0.05	CLOSED	CLOSED	CLOSED
OR542	STT	0.19	CLOSED	CLOSED	CLOSED
OR543	STT	0.15	CLOSED	CLOSED	CLOSED
OR546	STT	0.10	CLOSED	CLOSED	CLOSED
OR547	STT	0.11	CLOSED	CLOSED	CLOSED
OR550	JEEP	0.55	CLOSED	CLOSED	CLOSED
OR551	JEEP	1.51	CLOSED	CLOSED	CLOSED
OR552	JEEP	0.25	CLOSED	CLOSED	CLOSED
OR553	ATV	0.72	CLOSED	CLOSED	CLOSED
OR555	ATV	0.21	CLOSED	CLOSED	CLOSED
OR556	ATV	0.26	CLOSED	CLOSED	CLOSED
OR557	JEEP	0.41	CLOSED	CLOSED	CLOSED
OR558	JEEP	0.37	CLOSED	CLOSED	CLOSED
OR559	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR560	ATV	0.79	CLOSED	CLOSED	CLOSED
OR561	ATV	0.54	CLOSED	CLOSED	CLOSED
OR562	ATV	0.55	CLOSED	CLOSED	CLOSED
OR565	STT	0.21	CLOSED	CLOSED	CLOSED
OR567	STT	0.15	CLOSED	CLOSED	CLOSED
OR573	STT	0.51	CLOSED	CLOSED	CLOSED
OR574	STT	0.18	CLOSED	CLOSED	CLOSED
OR575	STT	0.27	CLOSED	CLOSED	CLOSED
OR576	JEEP	0.03	CLOSED	CLOSED	CLOSED
OR577	STT	0.69	CLOSED	CLOSED	CLOSED
OR582	ATV	0.19	CLOSED	CLOSED	CLOSED
OR586	STT	0.20	CLOSED	CLOSED	CLOSED
OR587	JEEP	0.42	CLOSED	CLOSED	CLOSED
OR588	STT	0.28	CLOSED	CLOSED	CLOSED
OR589	STT	0.14	CLOSED	CLOSED	CLOSED
OR590	4WD R	0.36	CLOSED	CLOSED	CLOSED
OR591	4WD R	0.28	CLOSED	CLOSED	CLOSED
OR592	STT	0.85	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR593	STT	0.11	CLOSED	CLOSED	CLOSED
OR594	STT	0.20	CLOSED	CLOSED	CLOSED
OR595	STT	0.27	CLOSED	CLOSED	CLOSED
OR596	STT	0.23	CLOSED	CLOSED	CLOSED
OR597	STT	1.14	CLOSED	CLOSED	CLOSED
OR598	ATV	0.14	CLOSED	CLOSED	CLOSED
OR599	ATV	0.08	CLOSED	CLOSED	CLOSED
OR600	ATV	0.09	CLOSED	CLOSED	CLOSED
OR601	STT	0.17	CLOSED	CLOSED	CLOSED
OR602	STT	0.27	CLOSED	CLOSED	CLOSED
OR603	STT	0.13	CLOSED	CLOSED	CLOSED
OR604	ATV	0.21	CLOSED	CLOSED	CLOSED
OR605	STT	0.58	CLOSED	CLOSED	CLOSED
OR606	STT	0.03	CLOSED	CLOSED	CLOSED
OR607	STT	0.10	CLOSED	CLOSED	CLOSED
OR608	STT	0.04	CLOSED	CLOSED	CLOSED
OR609	STT	0.09	CLOSED	CLOSED	CLOSED
OR610	IMPR	0.15	CLOSED	CLOSED	CLOSED
OR611	STT	0.03	CLOSED	CLOSED	CLOSED
OR612	IMPR	0.04	CLOSED	CLOSED	CLOSED
OR613	IMPR	0.02	CLOSED	CLOSED	CLOSED
OR614	IMPR	0.10	CLOSED	CLOSED	CLOSED
OR615	ATV	0.07	CLOSED	CLOSED	CLOSED
OR616	ATV	0.03	CLOSED	CLOSED	CLOSED
OR617	STT	0.01	CLOSED	CLOSED	CLOSED
OR618	ATV	0.21	CLOSED	CLOSED	CLOSED
OR619	IMPR	0.07	CLOSED	CLOSED	CLOSED
OR620	ATV	0.05	CLOSED	CLOSED	CLOSED
OR621	ATV	0.35	CLOSED	CLOSED	CLOSED
OR622	ATV	0.06	CLOSED	CLOSED	CLOSED
OR623	ATV	0.16	CLOSED	CLOSED	CLOSED
OR624	ATV	0.13	CLOSED	CLOSED	CLOSED
OR625	ATV	0.11	CLOSED	CLOSED	CLOSED
OR626	ATV	0.09	CLOSED	CLOSED	CLOSED
OR627	ATV	0.06	CLOSED	CLOSED	CLOSED
OR628	ATV	0.19	CLOSED	CLOSED	CLOSED
OR629	ATV	0.28	CLOSED	CLOSED	CLOSED
OR630	ATV	0.11	CLOSED	CLOSED	CLOSED
OR631	ATV	0.07	CLOSED	CLOSED	CLOSED
OR632	ATV	0.16	CLOSED	CLOSED	CLOSED
OR633	ATV	0.20	CLOSED	CLOSED	CLOSED
OR634	STT	0.32	CLOSED	CLOSED	CLOSED
OR635	JEEP	0.05	CLOSED	CLOSED	CLOSED
OR636	STT	0.27	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR637	STT	0.22	CLOSED	CLOSED	CLOSED
OR638	STT	0.14	CLOSED	CLOSED	CLOSED
OR639	JEEP	0.05	CLOSED	CLOSED	CLOSED
OR640	JEEP	0.08	CLOSED	CLOSED	CLOSED
OR641	STT	0.17	CLOSED	CLOSED	CLOSED
OR642	STT	0.39	CLOSED	CLOSED	CLOSED
OR643	STT	0.10	CLOSED	CLOSED	CLOSED
OR644	STT	0.19	CLOSED	CLOSED	CLOSED
OR645	STT	0.24	CLOSED	CLOSED	CLOSED
OR646	STT	0.05	CLOSED	CLOSED	CLOSED
OR647	STT	0.09	CLOSED	CLOSED	CLOSED
OR648	STT	0.22	CLOSED	CLOSED	CLOSED
OR649	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR650	JEEP	0.04	CLOSED	CLOSED	CLOSED
OR651	JEEP	0.03	CLOSED	CLOSED	CLOSED
OR652	STT	0.03	CLOSED	CLOSED	CLOSED
OR653	STT	0.15	CLOSED	CLOSED	CLOSED
OR654	STT	0.03	CLOSED	CLOSED	CLOSED
OR656	STT	0.06	CLOSED	CLOSED	CLOSED
OR657	STT	0.03	CLOSED	CLOSED	CLOSED
OR660	STT	0.00	CLOSED	CLOSED	CLOSED
OR661	STT	0.02	CLOSED	CLOSED	CLOSED
OR662	JEEP	0.09	CLOSED	CLOSED	CLOSED
OR663	STT	0.00	CLOSED	CLOSED	CLOSED
OR664	STT	0.05	CLOSED	CLOSED	CLOSED
OR665	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR666	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR667	STT	0.03	CLOSED	CLOSED	CLOSED
OR668	STT	0.01	CLOSED	CLOSED	CLOSED
OR669	STT	0.03	CLOSED	CLOSED	CLOSED
OR670	STT	0.01	CLOSED	CLOSED	CLOSED
OR671	STT	0.04	CLOSED	CLOSED	CLOSED
OR672	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR673	STT	0.02	CLOSED	CLOSED	CLOSED
OR674	STT	0.01	CLOSED	CLOSED	CLOSED
OR675	STT	0.03	CLOSED	CLOSED	CLOSED
OR676	STT	0.08	CLOSED	CLOSED	CLOSED
OR677	STT	0.02	CLOSED	CLOSED	CLOSED
OR678	STT	0.00	CLOSED	CLOSED	CLOSED
OR679	STT	0.01	CLOSED	CLOSED	CLOSED
OR680	STT	0.02	CLOSED	CLOSED	CLOSED
OR681	STT	0.17	CLOSED	CLOSED	CLOSED
OR682	STT	0.09	CLOSED	CLOSED	CLOSED
OR683	STT	0.01	CLOSED	CLOSED	CLOSED

ROUTE	ROUTE	TRAIL	ROUTE	ROUTE	ROUTE
NUMBER	TYPE	LENGTH (miles)	DESIGNATION Alternative A	DESIGNATION Alternative B	DESIGNATION Alternative C
OR684	STT	0.01	CLOSED	CLOSED	CLOSED
OR685	STT	0.03	CLOSED	CLOSED	CLOSED
OR686	STT	0.02	CLOSED	CLOSED	CLOSED
OR687	STT	0.07	CLOSED	CLOSED	CLOSED
OR688	STT	0.02	CLOSED	CLOSED	CLOSED
OR690	STT	0.07	CLOSED	CLOSED	CLOSED
OR691	STT	0.01	CLOSED	CLOSED	CLOSED
OR692	STT	0.02	CLOSED	CLOSED	CLOSED
OR693	STT	0.05	CLOSED	CLOSED	CLOSED
OR694	STT	0.01	CLOSED	CLOSED	CLOSED
OR695	STT	0.01	CLOSED	CLOSED	CLOSED
OR696	STT	0.05	CLOSED	CLOSED	CLOSED
OR697	STT	0.03	CLOSED	CLOSED	CLOSED
OR698	STT	0.03	CLOSED	CLOSED	CLOSED
OR699	STT	0.01	CLOSED	CLOSED	CLOSED
OR700	JEEP	0.04	CLOSED	CLOSED	CLOSED
OR701	STT	0.03	CLOSED	CLOSED	CLOSED
OR702	STT	0.01	CLOSED	CLOSED	CLOSED
OR703	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR704	JEEP	0.02	CLOSED	CLOSED	CLOSED
OR744	STT	0.36	CLOSED	CLOSED	CLOSED
OR745	STT	0.14	CLOSED	CLOSED	CLOSED
OR746	ATV	2.67	CLOSED	CLOSED	CLOSED
OR748	STT	0.07	CLOSED	CLOSED	CLOSED
OR749	STT	0.81	CLOSED	CLOSED	CLOSED

**APPENDIX B  
BARREN DESIGNATION**

HOLLISTER FIELD OFFICE  
CLEAR CREEK MANAGEMENT AREA  
BARREN DESIGNATION WORKSHEET

1. Barren Number:
2. Barren Characteristics  
Acres

Criteria Name	Criteria Value1	Determination Date	Mitigation
Offsite Sedimentation			
Soils			
User Demand			
Uniqueness of Vegetation			
Potential for Limiting Use			
Potential for Impact to T&E			
Pristine			
RNA/WSA/SMA			

4. BARREN DESIGNATION:  
(If Limited, Describe Limitation)

5. BARREN DESIGNATION DATE:

6. Other Proposed Actions

7. Barren Specific Rationale:

8. Decision Record:

This decision is in conformance with the Hollister Field Office Resource Management Plan, 1984; Clear Creek Management Plan and Record of Decision, 1986; Clear Creek Management Plan Amendment and Record of Decision 1999. An environmental assessment supports the finding of no significant impact.

9. Decision Criteria: Includes all criteria identified in 43 CFR 8342.1 parts (a) through (d) and in Environmental Analysis CA-190-2003-XX

**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 BARREN AREA EVALUATION CRITERIA DATA ELEMENT DICTIONARY**

**Introduction:** The following criteria represent the data on which decisions about authorized vehicular recreation use of barren areas is based. The data element dictionary describes the allowed responses for each criterium. The information on each barren area will be entered into an electronic database for analysis and query, preferably in Access.

***Soil***

**Off-site sedimentation** (Dynamac data plus staff observation)

Code	Definition
11010	Off-site transport but sufficiently trapped, few impacts, use o.k.
11119	Off-site delivery, impacts active channel, use NOT O.K.
11129	Off-site delivery, impacts sensitive habitat, use NOT O.K.
11139	Off-site delivery, impacts cultural, use NOT O.K.
11149	High subwatershed erosion rate, NOT O.K.
11212	Impacts to active channel, POTENTIAL MITIGATION
11222	Impacts to sensitive habitat, POTENTIAL MITIGATION
11232	Impacts to cultural, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

**Soils** (Dynamac data plus staff observation)

Code	Definition
12010	High hydrographic position, use o.k.
12119	Armoring, use NOT O.K.
12129	Low hydrographic position, use NOT O.K.
12139	Steep slope, use NOT O.K.
12212	Armoring, POTENTIAL MITIGATION
12222	Low hydrographic position, POTENTIAL MITIGATION
12232	Steep slope, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

***Recreation***

**User demand**

Code	Definition
13010	Recreation opportunity, use o.k.
13119	No recreation opportunity, use NOT O.K.
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

**Vegetation**

**Uniqueness of vegetation and potential for damage**

Code	Definition
14010	Vegetation cover, use o.k.
14119	Unique/sensitive species, use NOT O.K.
14129	Poor vegetation cover for reducing erosion, use NOT O.K.
14212	Vegetation cover, POTENTIAL MITIGATION
14222	Unique, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

**Potential for Limiting Use to Designated Area (Vegetation Boundary)**

Code	Definition
15010	Vegetation boundary, use o.k.
15212	Poor vegetation boundary, POTENTIAL MITIGATION
15119	Poor vegetation boundary, use NOT O.K.
TEXT	TEXT DESCRIPTION OF MITIGATION POTENTIAL

**Potential for impacts to Sensitive Species**

Code	Definition
16000	No conflicts with sensitive species, use o.k.
16010	Sensitive species nearby, use o.k.
16119	Sensitive species nearby, use NOT o.k.
16212	Sensitive species nearby, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION POTENTIAL

**Pristineness**

**Pristineness**

Code	Definition
17010	does not threaten to impact a nearby pristine area, use o.k.
17119	Pristine condition, use NOT O.K.
17129	Likely to threaten pristine area, use NOT O.K.
17212	Mine area adjacent to barren, POTENTIAL MITIGATION
17139	Adjacent area of concern, use NOT O.K.
17222	Adjacent area of concern, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

**San Benito Mountain Research Natural Area/WSA/SMA**

Code	Definition
18010	Area not in or potentially threatening to SBMRNA/ACEC, use o.k.
18119	Area within SBMRNA/ACEC, use NOT O.K.
18129	Area adjacent to or threatens SBMRNA, use NOT O.K.
18139	Special management area/existing closure, use NOT O.K.
18212	Area adjacent to or threatens SBMRNA, POTENTIAL MITIGATION
TEXT	TEXT DESCRIPTION OF MITIGATION PROPOSAL

**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 BARREN DESIGNATION RECORD**

Barren No	Alternative	Barren Acres	Barren Designation	Barren Designation Date	Barren Evaluation Criteria							
					1	2	3	4	5	6	7	8
1	A, B, & C	67.5	CLOSED	12 Sept 03								18139
2x	A, B, & C	294.62	CLOSED	12 Sept 03	11119	12129	13010	14119	15119	16119	17129	18010
					11129	12139		14129				
2a	A, B, & C	58.27	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
2b	A, B, & C	13.37	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17212	18010
3	A, B, & C	23.27	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
4	A, B, & C	17.96	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
5	A, B, & C	36.02	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
6x	A, B, & C	377.56	OPEN	12 Sept 03	11119	12129	13010	14129	15119	16000	17010	18010
					11149							
6a	A, B, & C	5.41	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
6b	A, B, & C	66.36	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
6c	A, B, & C	39.28	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
6d	A, B, & C	75.67	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
											17212	
6e	A, B, & C	65.7	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
7x	A, B, & C	30.89	CLOSED	12 Sept 03	11119	12139	13010	14010	15010	16000	17010	18010
					11129							
7a	A, B, & C	42.08	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
8	A, B, & C	252.56	CLOSED	12 Sept 03	11119	12129	13010	14119	15119	16119	17010	18139
					11129							
					11149							

**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 BARREN DESIGNATION RECORD**

Barren No	Alternative	Barren Acres	Barren Designation	Barren Designation Date	Barren Evaluation Criteria							
					1	2	3	4	5	6	7	8
9x	A, B, & C	181.33	CLOSED	12 Sept 03	11119	12129	13010	14129	15119	16119	17139	18139
					11129	12139						
					11149							
9a	A, B, & C	22.09	OPEN	16 Sept 03	11010	12010	13010	14010	15010	16212	17010	18010
9b	A, B, & C	8.72	OPEN	16 Sept 03	11010	12010	13010	14010	15000	16000	17010	18010
10a	A, B, & C	4.01	OPEN	16 Sept 03	11010	12010	13010	14010	15000	16000	17010	18010
10x	A, B, & C	55.17	CLOSED	16 Sept 03	11119	12129	13010	14010	15119	16119	17010	18010
11	A, B, & C	17.88	CLOSED	16 Sept 03								18139
12	A, B, & C	105.31	CLOSED	16 Sept 03								18139
13	B	62.17	OPEN	16 Sept 03	11010	12010	13010	14010	15010	16212	17010	18010
13	A & C	62.17	CLOSED	16 Sept 03								18139
14	A, B, & C	99.87	CLOSED	16 Sept 03		12119						18129
15	A, B, & C	141.19	CLOSED	16 Sept 03								18119
16	A, B, & C	36.58	CLOSED	16 Sept 03								18119
17	A, B, & C	176.26	CLOSED	12 Sept 03								18119
18	A, B, & C	46.78	CLOSED	12 Sept 03								18119
19	A, B, & C	12.9	CLOSED	12 Sept 03								18119
20	A, B, & C	14.99	CLOSED	03 Sept 03								18119
21	A, B, & C	39.27	CLOSED	12 Sept 03								18119
22	A, B, & C	187.19	CLOSED	12 Sept 03								18139
23	A, B, & C	49.48	CLOSED	12 Sept 03								18139
24	A, B, & C	51.26	CLOSED	12 Sept 03								18139
25	A, B, & C	97.39	CLOSED	12 Sept 03								18119

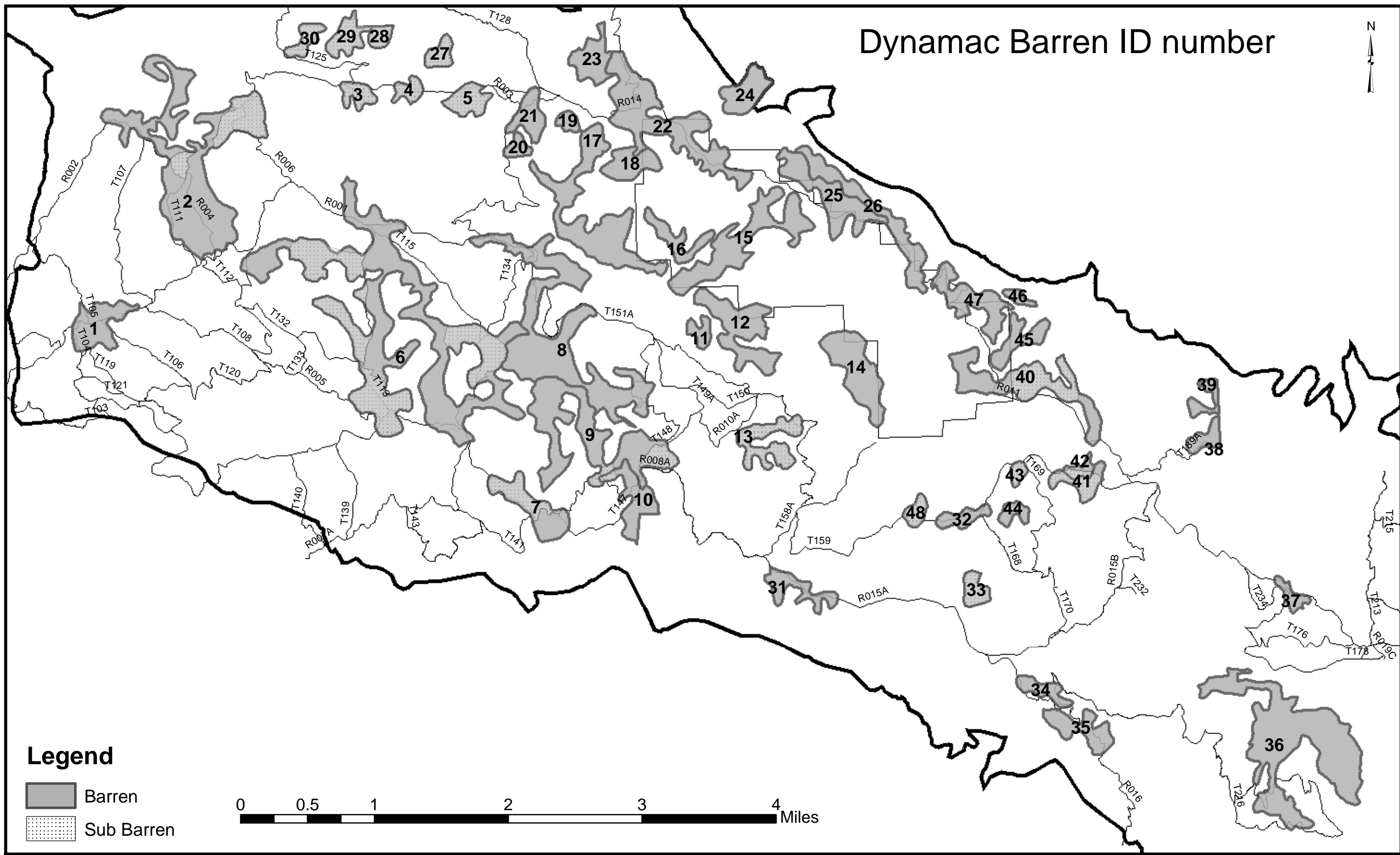
**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 BARREN DESIGNATION RECORD**

Barren No	Alternative	Barren Acres	Barren Designation	Barren Designation Date	Barren Evaluation Criteria								
					1	2	3	4	5	6	7	8	
26	A, B, & C	91.18	CLOSED	12 Sept 03									18119
27	A, B, & C	21.32	CLOSED	12 Sept 03			13020						18139
28	B	15.82	OPEN	16 Sept 03	11010	12222	13010	14010	15010	16212	17010	18010	
	A & C	15.82	CLOSED	16 Sept 03									18139
29	B	35.58	OPEN	12 Sept 03	11010	12222	13010	14010	15010	16212	17010	18010	
	A & C	35.58	CLOSED	12 Sept 03									18139
30	B	22.29	OPEN	16 Sept 03	11010	12222	13010	14010	15101	16212	17010	18010	
	A & C	22.29	CLOSED	12 Sept 03									18139
31	A, B, & C	40.95	CLOSED	12 Sept 03	11119	12129							18139
32	A, B, & C	24.58	CLOSED	12 Sept 03	11010	12010	13010	14119	15010	16119			18010
33	B	24.08	OPEN	12 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010	
	A & C	24.08	CLOSED	12 Sept 03									18139
34	A, B, & C	26.3	CLOSED	12 Sept 03	11119	12232	13010	14010	15119	16000	17010	18010	
35	A, B, & C	52.82	CLOSED	12 Sept 03									18139
36	A, B, & C	314.38	CLOSED	12 Sept 03									18139
37	A, B, & C	17.72	CLOSED	12 Sept 03									18139
38	A, B, & C	22.33	CLOSED	12 Sept 03		12119					17119		
39	A, B, & C	20.01	CLOSED	12 Sept 03		12119					17119		
40x	A, B, & C	74.79	CLOSED	16 Sept 03									18139
40a	B	62.33	OPEN	16 Sept 03	11010	12212	13010	14010	15010	16212	17222	18212	
40a	A & C	62.33	CLOSED	16 Sept 03									
41x	A, B, & C	5.49	CLOSED	16 Sept 03				14119		16119			

**HOLLISTER FIELD OFFICE  
 CLEAR CREEK MANAGEMENT AREA  
 BARREN DESIGNATION RECORD**

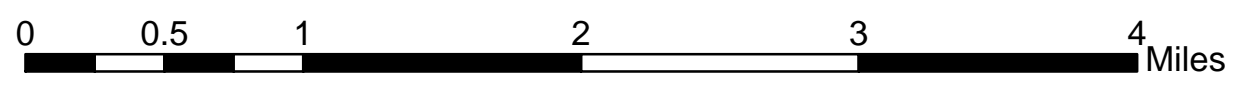
Barren No	Alternative	Barren Acres	Barren Designation	Barren Designation Date	Barren Evaluation Criteria							
					1	2	3	4	5	6	7	8
41a	A, B, & C	25.84	OPEN	16 Sept 03	11010		13010	14010	15010	16212	17010	18010
42x	A, B, & C	7.04	CLOSED	16 Sept 03				14119		16119		
42a	A, B, & C	6.46	OPEN	16 Sept 03								18139
43	B	10.45	OPEN	16 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
43	A & C	10.45	CLOSED	16 Sept 03								18139
44	A, B, & C	17.01	CLOSED	16 Sept 03	11010	12129	13010	14010	15010	16000	17010	18010
						12119						
45	A, B, & C	42.86	CLOSED	16 Sept 03								18119
46	A, B, & C	10.29	CLOSED	16 Sept 03								18119
47	A, B, & C	75.05	CLOSED	16 Sept 03								18119
48	B	17.14	OPEN	16 Sept 03	11010	12010	13010	14010	15010	16000	17010	18010
48	A & C	17.14	CLOSED	16 Sept 03								18139

# Dynamac Barren ID number

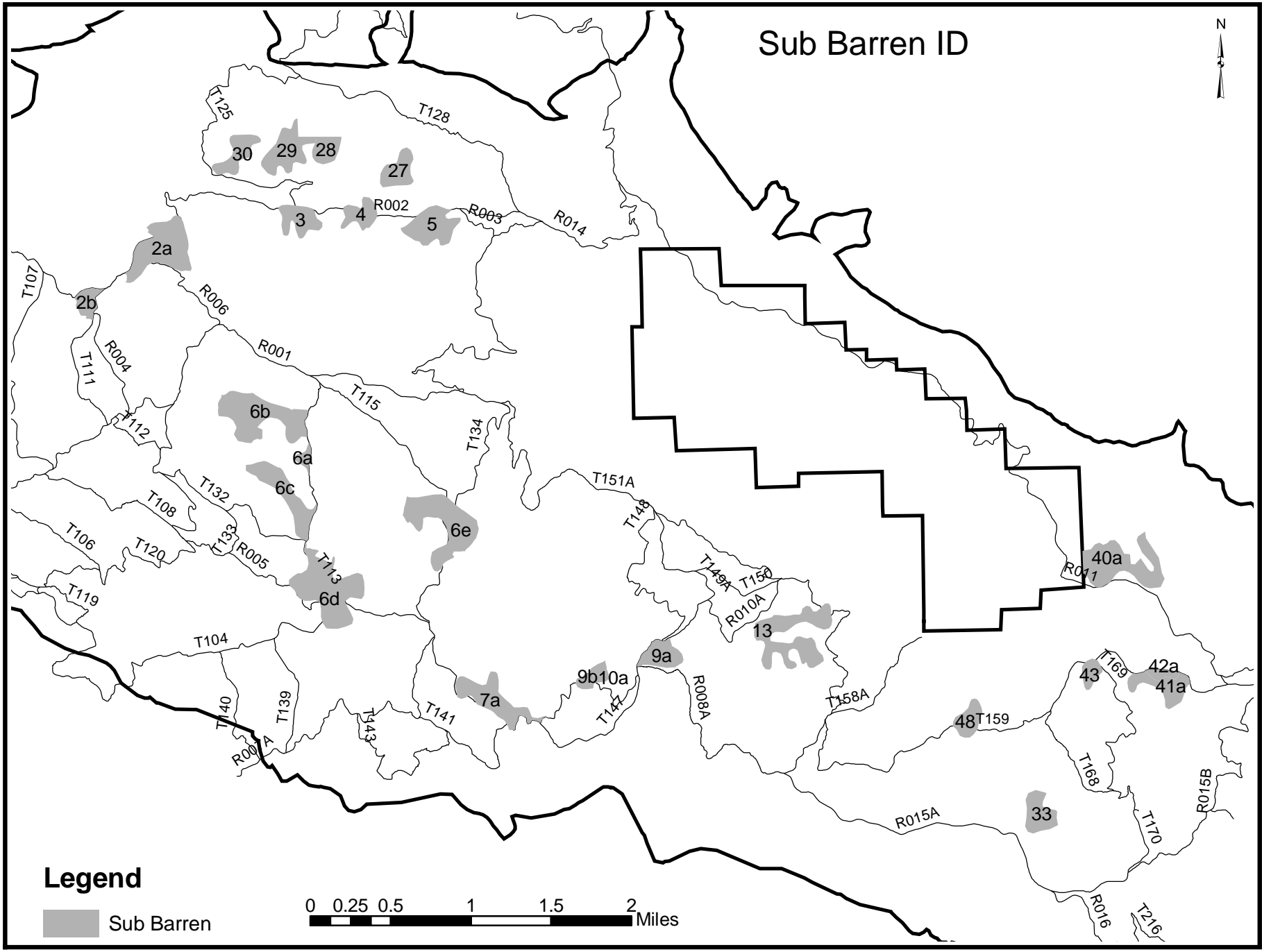


## Legend

- Barren
- Sub Barren



# Sub Barren ID

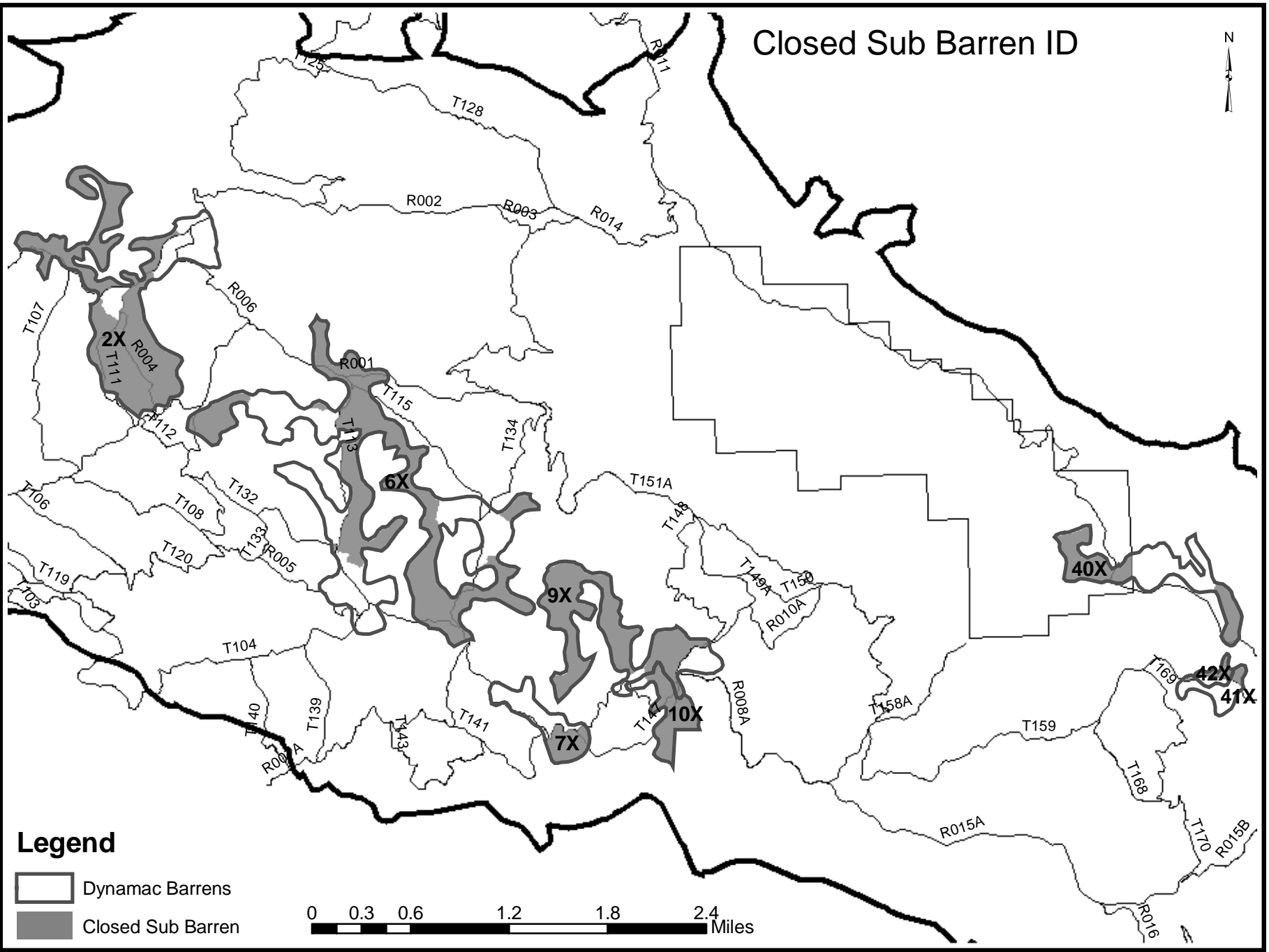


## Legend



 Sub Barren

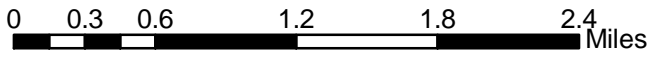
0 0.25 0.5 1 1.5 2 Miles

# Closed Sub Barren ID



## Legend

-  Dynamac Barrens
-  Closed Sub Barren



## APPENDIX C IMPLEMENTATION PLAN

Implementation of the proposed route designations will be phased in over five years. The schedule below identifies when implementation will first occur. Tasks such as monitoring, maintenance, patrol, and research would continue beyond the five-year period. Funding will come from BLM funds, grants, and partnerships. Volunteers will be used whenever possible. Rehabilitation and maintenance efforts will remain in accordance with Best Management Practices. With the exception of item twenty-two (22) and twenty-three (23), BLM has the necessary funding and personnel to accomplish these items. Items twenty-one (22) and twenty-two (23) have been submitted into the BLM's budget planning system.

### Immediate Actions (Target 0-2 Years):

1. Using GPS, identify and sign all open and limited route designations and create a database of sign locations and types. Signs will be placed at intersections of open and limited routes. Closed routes may be signed on a priority basis if there are problems with compliance. All routes not signed are closed to OHV use.
2. Corridor fence all remaining routes through any closed mine areas. Fence routes through closed barren areas as appropriate.
3. Fence, barricade, and sign closed routes which provide access to areas of concern (i.e. sensitive species, riparian areas, closed areas, and special management areas).
4. Continue implementing inventory and assessment of all designated routes in accordance with State soil loss protocols. Implement protocol for monitoring soils, vegetation, and species of concern.
5. Continue to perform annual recurring and corrective route maintenance and implement Best Management Practices (BMP's) according to Route Maintenance Objectives (RMO) for specific trail types based on the results of the soil loss assessment. A plan will be developed to implement Best Management Practices on stream crossings on the designated route system.
6. Prepare Research Natural Area Management Plan for the SBMRNA (Appendix E) and prevent trespass and impairment of values for which established.
7. Develop barren restoration plan to reclaim closed barrens and minimize erosion and sediment delivery.
8. Complete inventory of all routes not in the current database. Evaluate routes through the established screening criteria. Providing routes meet the criteria and contribute to the route network they may be added to the route system within the thresholds identified in this plan amendment.
9. Identify closed routes and implement restoration plan for reclamation to return to a natural state and trend towards background erosion rates.
10. Monitor soil erosion and sediment yield to streams. Implement soil erosion control measures, silt fences, and sediment trapping features.
11. Create and implement new Sign Plan. Place large portal signs at entry points informing visitors of vehicle use restrictions, asbestos public health hazards, and compliance with protective measures for sensitive species habitat.
12. Post maps of designated route and barren network on kiosks within the project area.
13. Have copies of maps with the revised route and area designations available for review and distribution at the Hollister Field Office.
14. Monitor closed routes for violations and rehabilitation needs according to BMP's. Monitor effectiveness of protection measures and law enforcement techniques.

15. Rehabilitate new illegal routes as they are discovered.
16. Ensure laws regarding sound levels of OHV use and ambient noise are enforced by sampling levels at selected sites during both peak and off-peak seasons.
17. Purchase, rotate, and monitor traffic counters. Log time of use, and monitor use patterns to include remote portions of the project area.
18. Continue existing, and explore new outreach approaches to contact visitors with brochures, maps, and information. Continue to emphasize the 'Leave No Trace' and the 'Tread Lightly' programs.
19. Conduct Fee Collection Study to determine effectiveness in implementing new fee collection in project area to help fund project activities. In the interim institute a program to register all vehicles and OHV's entering the area.
20. Construct and maintain kiosks at main access points to the project area.
21. Implement Park Host Program.
22. Acquire funds to construct new Decontamination Area near entrance to Clear Creek Management Area for BLM (and possible public) use.
23. Construct new entrance booth for information and collection of fees.
24. Develop and implement plan to sign routes of travel by levels of technical difficulty to better meet the needs of the public's range of skill and enjoyment and to promote safety.

Midterm Actions (Target 3-4 Years):

25. Continue to fence, barricade, and/or sign closed routes with continued OHV activity.
26. Continue to implement restoration plan for reclamation of routes to return to a natural state and trend towards background erosion rates.
27. Monitor the success of rehabilitation efforts.
28. Produce/revise local area brochures with a map of designated routes including the route's level of technical difficulty.
29. Research and implement techniques to control dust levels on routes traveled within the project area with respect to asbestos and within the guidelines of the BMP's.
30. Research and construct new 'alternative use' trails for non-motorized activities such as hiking, biking, and equestrian.
31. Maintain protocol for monitoring soils, vegetation, and species of concern.
32. Sample air quality (PM10 standards) for ambient quality and determine the effects of off-highway vehicles both within and outside of the Asbestos Hazard Area.
- 33.

Long-term Actions (Target 5+ Years):

34. Monitor soil loss, compliance, protection measures, and restoration data on routes of travel in the project area.
35. Continue to fence, barricade, and/or sign closed routes with continued OHV activity.
36. Continue to implement restoration plan for reclamation of routes to return to a natural state and trend towards background erosion rates.
37. Explore new methods of distributing route maps (e.g., CD ROMs, internet, etc.).

**Budgets/Funding**

Funding will remain at a level consistent with previous years. We do not anticipate increased appropriated funds in Fiscal Year 05 or in future years. Appropriated funding for recreation,

recreation facilities, threatened and endangered species, and cultural resources programs will be utilized benefiting the proposed actions. Funding will also be sought from other sources such as California Off-Highway Vehicle Commission Grants. Maintenance, monitoring, inventory, route assessment, updating surface land status maps, developing brochures, and installing and replacing kiosks are tasks that are needed under both the proposed action and the no action alternatives. Sign replacement and changing route numbers are tasks that would be accomplished by normal route maintenance. Whenever possible, volunteers, military training missions, donation of labor and equipment, and other sources of free labor will be utilized to stretch existing funds. Charging for maps, entrance fees, and brochures is a possible funding source. The implementation period would be extended if funding shortfalls would occur for equipment, materials, or labor.

### **Patrol**

Patrol is a high priority task to minimize damage to cultural and sensitive plant and wildlife species. Patrols are critical to obtaining compliance with route designations. Patrols are also used to aid the Sheriff's Office in search and rescue operations and to provide first aid assistance to visitors. Scheduled patrols will be conducted by park rangers and law enforcement rangers. In addition, all BLM staff will be responsible for day to day monitoring of recreational activities. Law enforcement rangers will enforce violations of route designations and resource damage.

### **Route Maintenance**

The two main objectives of route maintenance are implementation of Sign Plan and Route Maintenance Objectives.

Sign maintenance includes:

1. Installing emergency safety and resource closure signs as needed.
2. Replace faded and damaged signs with stickers for both carsonite and metal signs.
3. Replace damaged or faded carsonite and metal signs.
4. Remove and replace damaged sign posts.
5. Install new signs where violations occur, rehabilitation is needed, and as safety needs are identified.
6. Removal of closed signs where routes have successfully been rehabilitated.

Route Maintenance Objectives include:

1. Improved/Maintained Roads [Width > or = to 14 ft., Vertical Clearance > or = to 14 ft.]

Discussion: FIMMS level 4 road- this level is assigned to roads where management objectives require the road to be open all year (except may be closed or have limited access due to snow conditions) and to connect major administrative features (recreation sites, local road systems, administrative sites, etc.) to County, State, or Federal roads. Typically, these roads are single or double lane, aggregate, or bituminous surface, with higher volume of commercial and recreational traffic than administrative traffic.

The entire roadway is maintained at least annually, although a preventive maintenance program may be established. Problems are repaired as discovered. These routes will be maintained for access year-

round for all vehicles. Route designation will be open to all vehicles unless designated for administrative use only.

- General access to the CCMA

2. 4WD Recommended [Width > or = to 10 ft. Vertical Clearance > or = to 14 ft.]

Discussion: FIMMS level 3 road- this level is assigned to roads where management objectives require the road to be opened seasonally or year-round for commercial, recreation, or high volume administrative access. Typically, these roads are natural or aggregate surfaced, but may include low use bituminous surfaced roads. These roads have defined crossings section with drainage structures (e.g., rolling dips, culverts, or ditches). User comfort and convenience are not considered a high priority.

Drainage structures are to be inspected at least annually and maintained as needed. Grading is conducted to provide a reasonable level of riding comfort at prudent speeds for the road conditions. Brushing is conducted as needed to improve sight distance. Slides adversely affecting drainage would receive high priority for removal, otherwise they will be removed on a scheduled basis. Route designation will be open to all vehicles unless designated for administrative use only.

- Primary use trail/admin trail

3. Technical 4X4 Route/Jeep Trail [Width > or = to 6 ft., Vertical Clearance > or = to 6 ft.]

Discussion: FIMMS level 2 road- this level is assigned to roads where the management objectives require the road to be opened for limited administrative traffic. Typically, these roads are passable by high-clearance vehicles.

Drainage structures are to be inspected within a 3-year period and maintained as needed. Grading is conducted as necessary to correct drainage problems. Brushing is conducted as needed to allow administrative access. Slides may be left in place provided they do not adversely affect drainage. Route designation will be open to all vehicles.

- Primary use trail/no admin/occasional emergency fire/LE etc.

4. Multiple Use Trail (ATV/MC) – [Width > or = to 3 ft., Vertical Clearance > or = to 6 ft.]

Moderate use trail with visitor use on a seasonal/and or peak use period with frequent contact between parties. Trail management is conducted with occasional visitor use patrols. Visitors are not likely to encounter obstructions.

(Maintenance standards for level 3 trail)- The trail shall require a minimum of one condition survey 1 to 2 times per season. Major repairs shall be completed annually. Maintenance shall be scheduled two to three times per season, if required, to repair the trail for environmental damage and to maintain access. Route designation will be limited to ATVs or motorcycles.

- Primary use recreation access

5. Single Track Trail [Width > or = to 18 in., Vertical Clearance > or = to 6 ft.]

FIMMS level 2 trail- Low use trail with little or no contact between parties. Little or no visitor use management. Visitors may encounter obstructions like brush and deadfall.

Trail would require condition surveys once every year. Repairs will be done at the beginning of the season to prevent environmental damage and maintain access. Emphasis is given to maintaining drainage and mitigating hazards. Major repair may not be done for several seasons. Route designations will be limited to motorcycles only.

Infrequent storms may require extensive repair work. At times the repair work becomes a reconstruction project. Estimates for major repairs are not included due to their infrequency and cost variance.

- Primary use recreation access

### Sign Implementation Plan

Implementation of a sign plan will be a key factor in the success of gaining and maintaining visitor compliance. The Bureau uses signs to provide various types of information to visitors. For example, even though the visitor is responsible for knowing and complying with existing rules and regulations, the Bureau still uses signs and other methods to provide regulatory information. Typical uses of signs for managing off-highway vehicle use include:

1. Provide information about the area.
2. Describe regulations for an area.
3. Quickly inform visitors of changes in route designations (e.g., emergency safety closures) until new maps and brochures can be prepared and printed.
4. Advise visitors of where and how to obtain help in an emergency.
5. Interpret an area's history, geology, wildlife, botany, etc., for visitors.
6. Numbered route signs:
  - 6.1. Help to identify location and aid in accurately locating visitors in search and rescue operations.
  - 6.2. Help visitors plan, with maps, to meet friends at specific location or to take off-highway vehicles touring trips.
  - 6.3. Help visitors to precisely identify sections of routes they like or dislike. For example, where maintenance is needed.
  - 6.4. Reduce the probability of volunteers becoming disoriented and making a mistake while traveling routes.
  - 6.5. Allow visitors to accurately report the location of safety hazards (e.g., shooting across routes of travel, drunk drivers, fires, open mine shafts, etc.).
7. Identification of route designations, open play areas, and Research Natural Area boundaries.
8. Identification of Open and Limited routes of travel within the CCMA.
9. Identify problem Closed routes and barrens.
10. Aid in minimizing conflict between different recreational users.

Area designation signs and route signs relate directly to implementing route designations proposed by this Plan Amendment. The route signing plan will work in compliance with 43 CFR 8342.1 which establishes criteria for designating routes and areas and informing the public of where OHV use is

authorized. The presence, or absence, of signs does not change route designations. Signs identify authorized use of current route designations and prohibit use of non-designated or 'closed' routes.

### **Protocol for Monitoring Soils, Vegetation, and Species of Concern**

Monitoring protocol meets or exceeds the requirements mandated by the California Department of Parks and Recreation, OHMVR Division. This protocol can be viewed at the BLM Hollister Field Office. The protocol requires monitoring all designated OHV trails on BLM lands in California that benefit from Green Sticker Funds granted to the BLM by the OHMVR Commissioners.

Objectives for monitoring soils, vegetation and species of concern include:

1. Reduce environmental degradation stemming from OHV activity.
2. Protect federal and State of California threatened, endangered, and special status plant and animal species.

Yearly monitoring of designated routes will be conducted in accordance with this protocol. Using GPS technology, the OHV Trail Monitoring Team will survey routes and input data concerning designated OHV trails into an Access database.

### **Seasonal Closures**

There are two types of seasonal closures are applicable to the CCMA; wet season and dry season. In both cases, roads would remain open for administrative use. The dry season closure would reduce air emissions, thus protecting the public from these airborne emissions. The wet season closure would reduce rutting of roads and trails, reducing sediment transfer into the various watersheds.

The dry season closure would be implemented to protect the visiting public from airborne emissions such as asbestos. Under Alternative C, all routes except R001 through R019 would be closed from June 1<sup>st</sup> through September 1<sup>st</sup>. All other alternatives would close routes according to the following procedures. The HFO personnel take air samples as part of their duties while working on CCMA. If at any time during the year a personal exposure limit is above 0.1, BLM will post warning notices throughout the CCMA. If this result persists for two consecutive weeks, BLM will close trails excluding R001 through R019 until the results are below the 0.1.

The wet season closure procedures could be implemented after the annual total precipitation exceeds 8 inches. Once 8 inches of precipitation has been exceeded, the following would apply. Additional rainfall exceeding ½ inch within a 24 hour period or 1 inch within a 72 hour period would result in a three day closure. Once the area has been closed a field inspection will be completed prior to reopening, and daily thereafter to determine suitability of road conditions.

### **Best Management Practices and Protection Measures**

The BLM would implement Best Management Practices (BMP) to reduce impacts to watershed resources, and would continue to evaluate and update these measures as needed to minimize impacts to water quality, control erosion and sediment production. These measures include drainage improvements, construction of rolling dips, water bars, rock armored/hardened stream crossings,

hardened sills, and half-pipe bridges, and are contained in Appendix D. These site treatments are incorporated into BLM's annual corrective route maintenance plan. BLM will also institute protection measure to protect riparian areas and sensitive species habitat. Closed routes will be restored and obscured with natural barriers or barricades. The following table lists unit costs for these management practices.

	Cost in \$	Unit Qty		Cost in \$	Unit Qty
<b>Trail Repairs</b>			<b>Rehabilitation</b>		
Rolling Dip	105	each	Trails <48" Wide		
Outslope	10.5	feet	Stabilization	3,400	<i>mile</i>
Grading	1,050	mile	Obliteration	17,000	<i>mile</i>
Brushcutting	2,000	acre			
Remove Berm	10.5	feet	Trails <96" Wide		
Berm Drain	65	each	Stabilization	6,800	<i>mile</i>
Fill Ditch	1,050	mile	Obliteration	27,000	<i>mile</i>
Re-Route	4,000	mile			
Waterbar	55	each	Trails <144" Wide		
Energy Dissipator	650	each	Stabilization	13,600	<i>mile</i>
			Obliteration	55,000	<i>mile</i>
<b>Stream and Drainage Crossings</b>					
			Trails >144" Wide		
Correct Drainage	210	each	Stabilization	21,250	<i>mile</i>
Clean Inlet (Culvert)	85	each	Obliteration	85,000	<i>mile square</i>
Clean Outlet (Culvert)	170	each	Revegetation	25	<i>yard</i>
Flume	250	each			
Reset Flume	125	each	<b>Facilities</b>		
Drop Inlet	150	each	Visitor Contact Sta.	40,000	<i>each</i>
Excavate Crossing	350	each	Vault Latrines	18,000	<i>each</i>
Ford Crossing	3,500	each	Campground/1 site	4,000	<i>each</i>
Install Culvert	2,000	each	Info Kiosk 3- panel/roof	2,500	<i>each</i>
Retaining Wall	125	sq ft	Info Kiosk 2- panel/roof	2,000	<i>each</i>
			Info Kiosk 1- panel/roof	1,000	<i>each</i>
<b>Habitat Protection</b>			Info Board	450	<i>each</i>
Sign	50	each	Gate, Type 1	3,000	<i>each</i>
Fence	4	feet	Gate, Type 2	2,000	<i>each</i>
Repair Fence	100	each	Gate, Type 3	1,000	<i>each</i>
Pipe Barrier	25	<i>feet</i>			

## **APPENDIX D 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 the watershed concerns influenced by a variety of agency programs and actions. 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 will need to be monitored and evaluated to determine their effectiveness. These management practices have been grouped into the following, broad categories: general, mining and related activities, roads, and recreation facilities, and barrens. Many of these management practices have been implemented over the years. BLM does not propose to have funds available to implement all referenced management practices. The continuing priority in the short term is to provide for protection of unstable areas, minimize sediment production, protect water quality by minimizing soil erosion, and ensure that constructed erosion control structures are stabilized and working. Of primary concern are management practices to reduce impacts from erosion related to roads, which have been identified as a significant contributor of sediment yield above background erosion rates. Minimizing erosion on OHV routes/trails, involving control of drainage, road slope stabilization, slope design, stream crossings, stream course protection, and restriction of road use during the wet season are critical components to improving watershed conditions.

### **Watershed Management Goals Related to Soil Loss:**

- Limit sediment production from roads, trails, and disturbed areas (hill climbs, mining areas).
- Limit vegetation and stream channel disturbance and associated sediment production.
- Minimize direct mass movement of soil into stream channels (from steep slopes and mining areas).

### **Watershed Management Actions:**

Special management practices will be developed for the ACEC, in order to protect and prevent irreparable damage to important resource values and to protect life and property from natural hazards.

Develop barren area restoration plan within one year.

Erosion control structures will be used to decrease erosion resulting from public recreation activities.

Install additional vehicle barriers to control access to riparian corridors and sensitive watershed areas.

Stabilize/rehabilitate severely eroding trails, hill climbs and naturally barren areas in Clear Creek Canyon. Stabilization methods include rock walls, rock armoring of stream crossings, contour trenching, gully plugs, and water diversions.

Continue a regular planned maintenance program for major routes and trails in the Clear Creek Management area (e.g., waterbar construction and outsliping).

The following is a list of practices 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, BMPs will be identified that best address resource condition objectives and will be phased in over a period of time.

**On-going Management Actions – High Priority**

- MP – 6: Watershed Restoration
- MP – 17: Erosion Control on ORV Trails
- MP – 1: Protection of Unstable Areas
- MP – 12: Road Stream crossings
- MP – 7: Erosion Control Structure Maintenance
- MP – 16: Control of Road Drainage
- MP – 11: Stream course Protection
- MP – 19: Maintenance of Roads
- MP – 13: Road Slope Design
- MP – 18: Minimization of Side-cast Material
- MP – 10: Environmental Health and Safety Hazard Awareness
- MP – 3: Restrict Development within the Floodplain
- MP – 14: Road Slope Stabilization

**Management Practices Needing Further Development –( 0-2 years)**

- MP – 5: Re-vegetation of Surface Disturbed Areas
- MP – 20: Control of Road Use During Wet Periods
- MP – 2: Streamside Management Zone Designation
- MP – 24: Silt Fences
- MP – 25: Erosion Control Blankets
- MP – 26: Rock Backfilling of Gullies
- MP – 15: Dispersion of Subsurface Drainage from Cut and Fill Slopes
- MP – 30: Rock Filter
- MP – 31: Gabion Mattresses
- MP – 21: Surface erosion Control at Facility Sites
- MP – 9: Restoration of Borrow Pits, Quarries, and Mining Operations (ongoing)

**Lower Priority MPs**

- MP – 22: Control of Sanitation Facilities (completed)
- MP – 23: Control of Refuse Disposal (completed)
- MP – 8: Regulation of Streamside Gravel Borrow Areas (not currently applicable)
- MP – 27: Check Dams (significant planning and study required)
- MP – 28: Interceptor Dyke and Swale (significant planning and study required)
- MP – 29: Sediment Basin (significant planning and study required)
- MP – 4: Specifying Riprap Composition

**GENERAL**

- 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 ORV use away from these areas, and by 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 avoid these problems and insure adequate erosion control.

**MINING AND RELATED ACTIVITIES**

MP – 8: 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 – 9:** 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. When ever 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 – 10:** Environmental Health and Safety Hazard Awareness

**Objective:** Improve the level of visitor awareness of environment health and safety hazards, e.g., asbestos hazard in dust and water.

**Explanation:** The public will be encouraged through signs, pamphlets, media exposure and public contact to conduct their activities in ways that will not unnecessarily expose themselves to environmental hazards.

## **ROADS**

**MP – 11:** 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 – 12: 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 – 13: 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 fill 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 – 14: 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 – 15: 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 – 16 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 – 17: Erosion Control on ORV Trails and Temporary Roads.

Objective: To protect water quality by minimizing erosion and sedimentation derived from ORV trails and roads.

Explanation: Installation of erosion control measures may be required on OHV trails and temporary roads. 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 – 18: 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 – 19: 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 – 20: 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 unrestricted and official 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.

## **RECREATION FACILITIES**

MP – 21: 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 soils in place as possible and to reduce the amount of soil entering streams. Some examples of erosion control methods that could 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 – 22: 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 – 23 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.

**BARRENS**

The purpose of this section is to present sediment and erosion control BMPs that are potentially applicable for active OHV play areas. Due to the unique conditions at the Clear Creek Management Area (i.e., topography, climate, soil types, vegetation, and recreational OHV use), the effectiveness of the proposed BMPs is difficult to predict. There is very limited practical experience with BMPs for conditions similar to those found at Clear Creek.

In order to directly evaluate the efficiency of the proposed BMPs at Clear Creek, it is recommended that a BMP pilot program be implemented. Under the pilot program, the BMPs considered by BLM to be most feasible based on the available budget will be implemented on a limited scale. Each selected BMP is implemented at one or two sites that meet its applicability criteria and using different designs where possible. The effectiveness of each BMP is then evaluated over the course of one year. At the end of the evaluation, BLM will identify the most effective BMPs and designs and will expand their use at other sites with similar features within the Clear Creek Management Area.

MP – 24 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 – 25 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 BMP 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 – 26**      **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 – 27**      **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 – 28**      **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 upland areas, whereas, silt fences allow runoff to filter through the fence and reach lower areas.

**MP – 29      Sediment Basin**

**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 through 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 front 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 – 30      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 – 31      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.

## **WATER QUALITY & WATERSHED POLICY AND PLANNING GUIDANCE**

### **Management Summary & Reference Chronology**

- 1984 & 1986 Watershed Protection Measures (also called best management practices or BMP's) were adopted in 1984 Hollister Resource Management Plan & subsequent 1986 Clear Creek Activity Plan.
- 1990, EPA conducted a regional report, "Characterization of Disturbances Related to Mining and Exploration in the New Idria Study Area". This report documented erosion & sediment sources and remedial measures to reduce off-site sediment transport in the area.
- 1992, BLM, publishes in the Federal Register, Planning Criteria for the Clear Creek Environmental Impact Statement. The planning criteria included references to the Clean Water Act, and State of California OHV Grant Soil Loss guidance and standards.
- 1993, BLM's consultant completed a report on the 10,000 acre Clear Creek Watershed, which field mapped and computer modeled the erosion and sediment transport due to natural and anthropic (accelerated erosion).
- 1995, BLM's consultant (Pacific Watershed Associates, PWA), completed a 110 mile road related erosion and sediment watershed assessment.
- 1996, BLM installed with the USGS, a water quality monitoring station in Clear Creek. This station monitors water quality (heavy metals, asbestos, total sediment), and is real-time data available both published annually and on the internet.
- 1998, BLM's consultant completed two reports, water quality monitoring of abandoned mined areas, and a geomorphic evaluation of the "OHV play areas".
- 1999, California OHV Green Sticker Grant for Clear Creek requires a soil loss monitoring plan.
- 2000, BLM completes 5 abandoned mercury mine restoration projects.
- 2003, BLM develops dust mitigation plan for the Monterey Bay Unified Air Pollution Control Board, for road related erosion stabilization projects
- 2003, draft mercury sediment TMDL for Clear Creek proposed by Central Coast Regional Water Quality Control Board.

## **Appendix E**

# **SAN BENITO MOUNTAIN RESEARCH NATURAL AREA INTERIM MANAGEMENT PLAN AND MANAGEMENT GUIDANCE**

In 1999 (Clear Creek Management Area Plan Amendment and Final FEIS Record Of Decision, 1999), the BLM designated the San Benito Mountain Natural Area as a Research Natural Area (SBMRNA) to encourage research and provide protection of the unique conifer forest and vegetation communities on and around San Benito Mountain. The 1999 ROD also expanded the boundaries of the existing SBMRNA as identified in this Plan Amendment. A Research Natural Area Management Plan (Activity Level Plan) will be completed within one year. This interim plan will guide management of the SBMRNA and identify management goals and objectives that the subsequent RNA management plan will address in greater detail. Management objectives and prescriptions will be developed that 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.

J.R.Griffin (1970) stated in his original recommendation to establish the San Benito Mountain Natural Area that "...it would in no way duplicate any North Coast Range serpentine natural area and would be a highly desirable contrast with them." The SBMRNA and proposed expansion possess a combination of soils, climate, elevation, and location that has resulted in an assemblage of serpentine vegetation without duplication elsewhere (Griffin 1970). The San Benito Mountain Forest is the only forest in the world that supports Jeffrey, Coulter, and gray pines, and incense cedar, and Jeffrey x Coulter pine hybrids. The federally threatened San Benito evening-primrose (*Camissonia benitensis*) also occurs here. While not common, serpentine ecosystems range widely in California. Great diversity in California topography, geologic history, and climate makes a representative "typical" serpentine area in California impossible. By including the SBMRNA, BLM completes a full representation of protected serpentine ecosystems of California. The relatively intact soils toxic to most plant species, the isolated high-elevation ecological processes, and the unusual plant and animal species composition qualify the area as having outstanding and unusual ecological, soil and water features. Parallel to the biological diversity and endemism of the Clear Creek Management Area, the natural mineralogical diversity contributes to the global uniqueness of Clear Creek.

These distinctions represent the function of CCMA forests to conserve the biodiversity represented by the unusual genetic and species assemblages of this Research Natural Area.

The following planning criteria will guide development of the San Benito Mountain Research Natural Area Management Plan:

## 1.2 PLANNING

### 1.2.1 Management Goals

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

- 1) To protect the globally unique San Benito Mountain serpentine forest ecosystem, special status species, and the adjacent ecotones in their natural state for science research and educational purposes.

The San Benito Mountain serpentine forest ecosystem brings together conifer tree species in the San Benito Forest, a forest type that occurs nowhere else in the world (Griffin 1974; Sawyer and Keeler-Wolf 1995). This forest also has endemic shrub and herbaceous serpentine species that include the federally threatened San Benito evening-primrose (*Camissonia benitensis*). The complex geological history of this area has produced exceptionally toxic soils that have influenced the composition of forest vegetation.

This goal furthers resource management under the Resource Management Plan for the lands administered by the BLM Hollister Field Office (1984, Vegetation and Soil, Air, and Water components) and under the Clear Creek Management Area Proposed Resource Management Plan Amendment and Final Environmental Impact Statement (1995) including the Modified Preferred Alternative 3 (1997).

- 2) To define and create a environment for research designed (1) to investigate and better understand the geology, biology, ecology, and archaeology; (2) to address asbestos related public health issues; and (3) to build an information base for guiding management of this and other serpentine ecosystems on BLM lands.

This goal furthers the public interest under the Environmental Protection Agency regulations regarding asbestos in natural environments. In addition, this goal establishes a natural laboratory for gathering information about this unique ecosystem for improved management and conservation.

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

As a natural laboratory, the RNA will have limited public access to reduce impacts and influences of people on the terrain and vegetation. However, BLM will encourage visits guided by BLM personnel and researchers on site for the public. BLM will also specialize in interpretive services for the public so that people may learn about the RNA and enjoy visits to the RNA.

### 1.2.2 Management Objectives

Management objectives result in actions that 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 RNA and nearby ecosystems, the management objectives may evolve over 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 RNA:

- 1) Include and maintain for conservation, within management constraints, the entire San Benito Forest and a buffer with the transitional chaparral / woodland habitats that border the Forest.
- 2) Establish RNA 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 slope exposures and elevational features, and should follow natural boundaries.”
- 3) Protect the sites of known occurrences as well as potential habitats of the San Benito evening-primrose and provide conditions within the RNA 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, September 16, 1996.
- 4) Protect existing occurrences and habitat of all other known BLM sensitive species that occur within the RNA boundaries. [Refer to Tables 1 and 2, Appendix F for the list of the BLM sensitive species.]
- 5) Protect all cultural resources and encourage public partnerships for research and educational use of the RNA.
- 6) 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.
- 7) Facilitate quality research with an established steering 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 steering committee will identify research needs and guide proposed research. Establishment and function of the steering committee shall meet the provisions established by the Federal Advisory Committee Act (FACA).
- 8) Foster other uses of the RNA 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 RNA.
- 9) Implement the Hollister Resource Management Plan, the Clear Creek Management Area (CCMA) Plan Amendment and accompanying Environmental Impact Statement, and Record of Decision as they specifically apply to the San Benito Mountain Research Natural Area for the protection and improvement of soil, air, biological, and water resources.

- 10) Provide for public safety.
- 11) Develop a Fire Management Plan for the SBMRNA with a pre-fire season trip with the Hollister Field Office Fire Management Officer (FMO) so that the FMO is aware of the sensitive species habitat locations and vehicle access routes.
- 12) Develop a barren area restoration plan to reduce erosion, sediment transport, and restore vegetation buffers.
- 13) Develop a science agenda to determine characteristics of the unique ecosystem that are important and what the management response will be to changes in these characteristics.

### **1.2.3 Science Agenda**

Science supports the sustainable resource management of the Clear Creek Management Area 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 for all elements in the Science Agenda for the San Benito Mountain Research Natural Area. People interested in the Science Agenda would 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.

Development of the Science Agenda would include the following components:

- 1) Natural resource inventories;
- 2) Historic research of sociological and ecological events;
- 3) Vegetation and habitat classification by soil, topography, surficial geology, and climate regime;
- 4) Monitoring for ecosystem processes, species, and recreation;
- 5) Ecological research;
- 6) Ecosystem modeling; and
- 7) Partnerships for accomplishing the science agenda.

#### **1.2.3.1 Natural Resource Inventories**

##### **Ultramafic Rock Outcrops and Barrens**

Remote sensing techniques and follow-up ground-truthing can delineate more accurately areas of exposed chrysolite-bearing ultramafic outcrops and barrens. The BLM is contracting for digital aerial imagery of the entire CCMA in 2004, correlating spectral reflectance data to vegetation and soil types.

A preliminary database of ultramafic rock outcrops and barrens (Dynamac, 1998) will furnish a set of reference sites where BLM can inventory fungi, plants, and animals found on outcrops and barrens; monitor natural asbestos in the air, water, and soil; and detect and monitor eventual changes stemming from historical OHV recreation play on barrens within the RNA.

##### **Lichen Species**

Both saxicolous (on stone) and epiphytic (on trees and shrubs) lichens are present in the SBMRNA. Information about lichens in ecosystems with ultramafic soils and rock is very limited. Saxicolous lichen species on ultramafic rock respond to an atypical geochemical environment as well as extreme ranges of humidity/aridity, temperature, and solarization. The inventory of lichen species will provide a baseline from which researchers can monitor eventual changes in distribution and frequency

within the SBM RNA. Identification of lichens may uncover previously unknown range extensions of rare species and complete the inventory of lichens.

Because lichens are useful for detecting heavy metal concentrations and air-borne pollutants, they may serve as indicators of environmental changes relevant to human health and ecosystem function. The unique ultramafic soils in the SBMRNA frequently contain high amounts of mercury, chromium, and other heavy metals as well as unusual assemblages of vascular plant species. Unusual mixes of lichen species may occur as well. The physiological and chemical interactions between lichens and their rock substrates may help researchers to better understand ways to mitigate environments contaminated with heavy metals and asbestos found in the SBMRNA.

### **Non-Vascular and Vascular Plant Species and Habitats**

The diversity of rare vascular plants is one of the most remarkable features of the CCMA. Inventory of all plant species in the SBMRNA is currently underway with the help of BLM natural resource specialists, and local botanists working under the MOU between the BLM and the California Native Plant Society. This Inventory serves as a baseline for GIS analyses describing the ranges of habitat characteristics in which rare plants currently exist, existed in the past, or might exist under BLM management. The inventory 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 delineation of suitable and occupied habitats
- a risk-management strategy, identification of habitat locations that have a high probability to sustain populations without directed BLM management or with species-specific directed management.

The plant species of most immediate concern for mapping and for habitat delineation are found in Appendix F.

### **Arthropod Species**

Little information about the diversity or uniqueness of arthropod species from the Clear Creek Management Area is available. However, endemism of arthropod species in ultramafic ecosystems of the CCMA is likely. Studies of the checkerspot butterflies at Jasper Ridge in Santa Clara County (Dobkin et al. 1987), for example, have documented that rare or endemic arthropods are likely in ultramafic ecosystems of California. The isolation and uniqueness of the SBM RNA forest ecosystem provides an island-like condition for endemic evolution: a forest island within an ultramafic soil island. Many rare ultramafic plants have associated arthropod species that are rare and that have unique physiology, such as accumulation of heavy metals (Schwarz and Wall 2001).

### **Bat Species**

Presently, no data are available about bats resident in the SBMRNA or in the rest of the Clear Creek Management Area. 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 bats species are BLM California species of management concern. In view of the absence of information about bat populations in the SBM RNA and the CCMA, wildlife biologists want to know whether abandoned mines there are suitable habitat for bats, and in particular rare bats.

### **Forest Inventory Analysis of SBMRNA**

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 the changes in the SBM RNA forests, the BLM can review the data collected from the Forest Service over several decades. In addition, the BLM would “intensify” the number of long-term monitoring plots by random selection of additional plots.

Small isolated populations of conifer tree species in the Central California Coast Region are important globally for genetic resources. The genetic resources from 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. The genetic resources of these conifer species may be atypical in comparison with populations of these species in the core areas of their ranges. Ledig (2000) has found that the unique hybrids between Coulter pine and Jeffrey pine from San Benito Mountain, first described by Zobel (1951a,b), may have altered the genetic structure of Coulter pines through introgression.

### **1.2.3.2 Historical Research**

The research agenda here refers to factors and forces that have shaped the RNA into its present form today and provide a point of departure for management into the future. BLM will encourage other government and university researchers as well as interested members of the public to pursue these topics.

### **Climate History of the SBMRNA**

Understanding the development of soils and vegetation types in the SBM RNA for the future requires identification of the processes that have created the current forest in the RNA. Of particular importance to the BLM is to know whether the ecological conditions in the past that created the current forest are similar to diverse modeled scenarios of future climate.

### **Fire History of the SBMRNA**

Coupled with climate history, fire frequency is likely to have had and will continue to have a profound effect on the vegetation cover of ultramafic soils of the SBM RNA. Knowing the fire history through tree core analysis and soil sampling and correlating that history with information on historical climate will provide BLM resource managers with information to model likely outcomes of future fires in the RNA.

In shrubland parts of the RNA, the chaparral biomass loads may fuel natural fires in ways different from adjacent forest lands. Analysis of fire history in chaparral ecosystems such as those by Keeley (2002) in the Sierra Nevada foothills and Moritz (2003) in the nearby Los Padres National Forest may help BLM managers guide future fire occurrence and protect chaparral vegetation for key vertebrate species that rely on extensive chaparral habitats.

### **Inundation History of the SBMRNA and Effects on Surficial Geology**

Several plant species of management concern, most notably the San Benito evening-primrose, inhabit alluvial terraces of the RNA. Rare floodwater events may be critical to the amount of

potential habitat for the evening-primrose and affect sub-populations of the species with local extinctions and with new habitats after flood events. The history of flood events would provide a range of natural conditions under which the species has survived. If flooding frequencies and intensities begin to occur significantly outside the past statistical distribution of occurrences, BLM managers will be able to respond with conservation measures to meet new conditions.

### **Human History and Land Use of the CCMA**

The BLM archaeologist at the Hollister Field Office has begun compiling current knowledge about the history of the CCMA before European settlement. Additional interpretive information about the history of settlements and land use is invaluable to the public to understanding the types and variety of ecological impacts and economic benefits generated in the CCMA. Values such as recreation opportunity, biological diversity, and ecosystem sustainability are part of the mix of values that people seek from the CCMA.

#### **1.2.3.3 Vegetation and Habitat Classification**

The BLM Hollister Field Office contracted a soil survey for the Clear Creek Management Area that met the 1989 Order 3 Soil Survey standards established by the USDA Natural Resource Conservation Service (NRCS). Data from the Survey are now part of the Field Office geographic information system. In the time since completion of the Clear Creek soils survey, the NRCS has expanded its portfolio of services to include delineation of ecological sites, that is, sites with uniform patterns of vegetation types and plant and animal species composition linked to soils, topography, and climate. Classification of vegetation according to correlations with soil types provides important information to resource managers. Information from the ecological site descriptions and delineations help BLM resource managers predict more accurately outcomes of management actions on the soils, plants, and animals of the diverse ecosystems that comprise the Management Area. Ecological site delineation and derived analyses will assist managers in making decisions about restoration projects, habitat suitability and management for targeted wildlife species, and protection measures for plant species composition.

#### **1.2.3.4 Monitoring for Ecosystem Processes and Recreation Use**

##### **Rates of Ultramafic Soil Formation and Erosion**

One major concern of BLM managers is the stability of ultramafic soils under differing kinds of disturbance. Results from monitoring can combine over time to provide a watershed-scale model of net amounts of sediment flows and changes to stream channel morphology. Both sediment flows and stream morphology are critical factors for shaping and transforming land areas in ways that affect populations of rare plants such as the San Benito evening-primrose.

One easy way to measure soil erosion is to establish silt fences at key sites of overland erosion (Robichaud and Brown 2002). These fences can measure changes to sites, especially near habitats for the San Benito evening-primrose, and provide verification for needed restoration throughout the RNA. Soil Loss Monitoring protocol done in connection with the California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division, BLM would determine locations to establish silt fences in tandem with restoration projects to document the effectiveness of intended improvements.

##### **Water Erosion and Sediment Deposition**

Maps of surface geology can help BLM managers organize management actions to improve recreation and to conserve species habitats. Understanding the susceptibility of soils (sediment) to

erosion helps managers to balance management appropriate to the soil and terrain with the capacity for site stability.

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 RNA to minimize sediment flows and erosion. Monitoring erosion may be critical for controlling and improving water flows, water quality, and habitat creation and conservation for rare plant species. Soil Loss Monitoring determines routes requiring tread repair, drainage structures, and signing. Soil Loss Monitoring of this sort will continue with modifications as recommended by the federal and state agencies and following the OHMVR Division standards.

### **Special Status Plant Species**

Inventories described in this document will likely contribute information about species that scientists and managers have little information. The uniqueness and comparative ecological isolation of the CCMA, and especially of the SBMRNA, may have created evolutionary conditions for endemism in non-vascular plants, lichens, fungi, and arthropods parallel to the species endemism for vascular plants.

#### *Strategies for Monitoring Species and Species Group*

Many tasks for monitoring species and species groups in the CCMA are in place with grant support from the California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division. Monitoring for amphibians, rare plants, raptor birds, and breeding bird censuses are part of the current CCMA monitoring. New elements for species monitoring are: lichens in the SBM RNA, coast horned lizard throughout the CCMA, bat species, and chaparral bird species.

Monitoring for rare plants focuses on ultramafic-endemic vascular plants. BLM has two types of monitoring and associated research for rare plants. BLM monitors all rare plants listed as threatened or endangered by the US Fish and Wildlife Service and all plants designated by the BLM California State Office as Species of Management Concern. The first priority is for establishing field studies for the San Benito evening-primrose (*Camissonia benitensis*). Complete details of monitoring and field studies for the evening-primrose are part of the Recovery Plan for the San Benito Evening-Primrose.

The second set of vascular plants comprises a monitoring watch list of those species categorized by the California Native Plant Society as Class 4 species. These species are sufficiently rare and thought to be adversely susceptible to disturbances stemming from human activities including vehicle travel, mining, and grazing. BLM staff will track selected populations that natural resource specialists see as particularly susceptible to human-caused disturbances.

### **Special Status Animal Species**

#### *Foothill Yellow-legged Frog*

The foothill yellow-legged frog is considered a BLM sensitive species and is a federal species of concern. Although this frog species is declining over its entire range, the populations in the Clear Creek ultramafic streams and riparian habitat appear to be self-sustaining. The foothill yellow-legged frog depends on aquatic and terrestrial habitat; however, it is rarely encountered far from permanent water. Ely (1992) conducted herpetological surveys at CCMA in 1992 (Ely, 1992), and BLM staff developed a monitoring protocol for the foothill yellow-legged frogs in 2001. Additional transects were added to monitoring efforts in 2003, and BLM will conduct the next surveys in May-June, 2004.

### *South Coast Horned Lizard*

In the most southern coastal counties of California, the South Coast horned lizard populations are declining rapidly as urbanization (Fisher et al. 2002) and the non-native Argentine ant (Suarez et al. 2000, 2002) spreads over the range of the lizard.

The herpetological surveys conducted in 1992 recorded sightings of this terrestrial species, however, a formal monitoring plan has not been developed to date. BLM Hollister Field Office will work closely with the BLM El Centro Field Office and the US Geological Survey in developing a monitoring plan. A review of monitoring methods is needed to adapt other horned lizard monitoring protocols from desert and chaparral ecosystems for the forest-chaparral mosaic characteristic of the CCMA. The BLM Hollister Field Office will develop the baseline inventory and monitoring protocol for the coast horned lizard in 2004. Monitoring will start in 2004 and cover the species throughout the CCMA.

### *Populations of Birds of Special Management Concern*

Populations of passerine birds in chaparral and chaparral-forest birds are of particular concern because these habitats are increasingly rare and fragmented. Johnson and Cicero (1985) also note that the high-elevation San Benito Mixed Conifer Forests provide habitat islands for several bird species found nowhere else in the Central Coast Range. Changes in the populations of unusual nesting bird species may be initial indicators that the habitat the conifer forest habitat in the SBM RNA is changing.

At the highest elevations in and around the SBM RNA, BLM will coordinate long-term monitoring for breeding populations of the following species: mountain quail (*Oreortyx pictus*), olive-sided flycatcher (*Contopus cooperi*), 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*). In addition, BLM will continue long-standing monitoring for raptor species and the breeding bird survey in the CCMA.

### *Rare Bat Species*

If researchers find that rare bat species are present in the CCMA based on inventory results, bat biologists will assist BLM in the design of species-appropriate to abandoned mines on BLM lands and monitor seasonally the movements of bat species of management concern around important bat habitats for roosting in abandoned mines and for foraging.

## **Recreation**

BLM rangers have been monitoring trail conditions systematically since 2001 according to the Soil Loss Monitoring Standards established by the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation. These standards are currently under review by the Division and the partner federal agencies. As data requirements for OHV trail conditions change, BLM will support changes to conform to regulations.

### **1.2.3.5 Research and Field Studies**

The following types of studies may be undertaken within the RNA and would be addressed in the subsequent RNA management plan:

- Distributions of Heavy Metals and Asbestos and Their Cycling Patterns in the Clear Creek Management Area

- Effects of Chrysotile Asbestos on the Health of BLM Employees and Recreation Visitors to the CCMA
- Tree Seed Collection and Ex Situ Tree Breeding
- Demography of Populations of Conifers / Analysis of Aerial Photographs
- Identification of Invertebrates that Impact Tree Growth
- Reforestation Practices to Restore Logged and Burned Forests on Ultramafic Soils
- Rates of Natural Regeneration of Chaparral Shrub Species on High-Elevation Sites with Ultramafic Soils
- Plant Adaptations to Heavy Metals: Cobalt (Co), Chromium (Cr), Copper (Cu), Mercury (Hg), Nickel (Ni), and Selenium (Se)
- Invasions by Non-Native Plants and Animals: Ecosystem Resistance and Management Response for Control on Ultramafic and Non-Ultramafic Soils

### **1.2.3.6 Ecosystem Modeling**

One of the most important elements of land management is ecosystem modeling. Computer-based models are important to management because they incorporate knowledge and data to approximate future outcomes, within intervals of error and defined risks. As new information from inventories, monitoring, and research become available, BLM resource managers adapt models of the Clear Creek Management Area to reflect these new findings. In this way, modeling becomes a catalyst for changes to improve land management.

Depending on the environmental and social concerns of people, the store of predictive models for the Clear Creek Area can be quite large. Based on the topics covered thus far, the following four models are a few of key models that researchers and managers could develop or adapt for simulating future conditions in the CCMA resulting from a program of management actions:

- Model 1. Modeling Natural and Human-Initiated Risks to Long-Term Viability for Species of Management Concern, with special reference to the San Benito evening-primrose;
- Model 2. Modeling Air Quality Impacts in the CCMA under Alternate Management Scenarios, with special reference to the transport of air-borne asbestos, mercury, nitrogen- and sulfur-based gases, and ozone;
- Model 3. Modeling Soil Movement in the CCMA under Alternate Management Scenarios, with reference to the frequency and severity of naturally occurring and human-facilitated erosion; and
- Model 4. Modeling the Development of Forest Vegetation on San Benito Mountain and Changes in the Animal Species Populations, under different interacting scenarios of global (climate change) to local (recreation) impacts.

### **1.2.3.7 Partnerships**

Funding for science at BLM to improve land management has not been a fiscal priority in the recent past. BLM cannot depend on internal funding to initiate or support many of the elements of the Science Agenda. Without investment, tasks for inventories, monitoring protocols, and field research in the San Benito Mountain Research Natural Area may proceed slowly.

The BLM Hollister Field Office staff, and especially its natural resource and recreation specialists, can 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 the Clear Creek Management Area.

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. Such efforts improve lines of communications between BLM employees and interested scientists from regulatory and research agencies and universities.

In the course of researching and preparing the Science Agenda for the SBMRNA, the BLM Hollister Field Office staff found the institutions listed below 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: Berkeley, Davis, Santa Cruz  
California State University System: San Francisco, San Jose, Stanislaus  
Stanford University  
University of Utah

#### **California State Agencies**

Department of Fish and Game  
Department of Forestry and Fire Prevention  
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 the United States**

Canadian Geological Survey

#### **Non-Governmental Non-Profit Agencies**

California Native Plant Society  
Southern California Gem Society  
Peninsula Gem Society

Point Reyes Bird Observatory

### **1.2.4 Fire Management**

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

#### **Characteristics**

This Fire Management Unit (FMU) consists of an area with bald hills which are naturally barren because of serpentine derived soils. The elevations of this FMU range from 2000 feet to over 5000 feet. The highest peak in the FMU is San Benito Mountain, a part of the Diablo Mountain Range, at 5,241 feet. Steep, barren slopes with extremely erosive soils are surrounded by brush-covered slopes, with occasional rock outcrops. The vegetation is unique and valuable for its contributions to science and for its natural beauty. Conifer forests within the FMU also comprise a unique vegetation community.

This FMU supports several sensitive plant species (serpentine endemics), most notably the San Benito evening primrose (*Camissonia benitensis*) and rayless layia (*Layia discoidea*). Both plants are annual and appear only in years of favorable precipitation. The evening primrose has been found in only a few locations – one in the San Benito Mountain Natural Area. It has been listed federally endangered. The rayless layia has a somewhat more widespread distribution. Talus fritillary (*Fritillaria falcata*), also a sensitive plant, occurs in one location on San Benito Mountain. *Pentachaeta exilis aeolica* may also occur in this FMU; this plant is exceedingly rare and its habitat is mainly grasslands off the serpentine area.

#### **Fire History**

Fire history for the SBM RNA may be characterized as one of minimal to infrequent fires, as a result of low fuel loads on the serpentine soils and barren landscape. Fire starts are predominantly lightning caused, but the potential for human caused fires exists. Brush fields on north slopes could pose a 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.

#### **Fire Management Objectives**

- Manage the habitat for threatened and endangered species of plants and animals to maintain viable populations in their natural ecosystems.
- Maintain air quality to meet or exceed applicable federal and state standards and regulations.
- Promote natural conditions within plant communities of the RNA.
- Restore and maintain the structures, species composition, and processes of native ecological communities and existing ecosystems
- Use fire to restore and/or sustain ecosystem health base 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 Sensitive Plants:*

- 1) Protect potential habitat for special status plant species and the Southern Ultramfic Jeffery pine forest.
- 2) Provide mosaic of seral stages.
- 3) Improve native plant community diversity and structure.
- 4) Provide habitat for a number of natives.

*Suppression Objectives:*

- 1) The use of retardant drops and heavy equipment (dozers) is acceptable in the initial attack to keep the fire small as possible. A resource advisor from the Hollister Field Office must be notified before any retardant drops from aircraft.
- 2) Fire will be managed for the protection of sensitive resource values. Protect the conifer forest and serpentine chaparral – this seems to repeat management emphasis #1 above.
- 3) Keep the maximum individual fire size to ten acres.
- 4) Use existing roads and natural barriers as the preferred method for containment and control of wildfire in the FMU.
- 5) The Monterey Air Board must be notified when any earth disturbance activities occur to conform to the Air Toxic Control Measures (ATCM).
- 6) 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) Burn 10 to 100 acres a year on a rotational basis (on a 10-year rotation). 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 (RTE) plants and habitat, chaparral components important to wildlife, and the spread of invasive plants.
- 4) Construct hand line and natural fuel breaks as for control lines and firing.
- 5) Protect and enhance the conifer forest within the RNA. What does this mean?
- 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) Initiate post-fire rehabilitation and restoration to re-establish quickly the RTE plants and chaparral and annual grasses important to wildlife.
- 2) Prevent soil erosion and flooding by outfitting fireline and fuel breaks with water bars.
- 3) Monitoring and evaluate ecological effects from fire. (For example, the unwanted introduction and spread of invasive plants and weeds).
- 4) Reseed with stock from local native plants in appropriate sites for species or use straw bales to trap seed and hold water at seed germination sites.

Restoration and rehabilitation will emphasize the reestablishment and perpetuation of RTE species, habitat diversity for a number of natives and improve the native plant community diversity and structure.

**Fire Management Strategies:**

- Use of Appropriate Management Response (AMR) to manage all fires for management objectives and based on current conditions and fire location.
- Prevent wildland fires from spreading to private land and the repeater tower site on San Benito Mountain.
- The use of aerial application of fire retardant and the use of natural barriers is the choice for containment.
- Restore and Rehabilitate fire suppression lines created during fire suppression efforts in a timely manner to prevent erosion. Straw may be used on areas with soil disturbance to learn more about the effects from fire suppression efforts.

Implement the full range of wildland fire fuels management practices, including prescribed fire, chemical, biological, and cultural treatments that will move all affected landscapes toward desired future condition as described in the RMP. AMR strategies would respond appropriately to address areas where plant communities are at high risk due to current conditions or other ecological constraints. AMR strategies would address critical habitat for wildlife, T&E species, areas of soil instability, and preservation of cultural resources. Use AMR to prevent wildland fires from spreading to private and other agency lands. All fires occurring at Fire Intensity Levels (FIL) 1 through 3 will be suppressed at <100 acres 90% of the time. All fires occurring at FIL 4-6 will be suppressed at <10 acres 75% of the time. Once the decadal burn target has been reached of 300 acres, from either planned or unplanned ignitions, a review of objectives and strategies will lead to new suppression criteria on all wildland fires. Predominate fire cause would more likely be caused by humans and/or possible lightning with size class A through D.

The appropriate management response is to prevent wildland fires from spreading to private land and to the repeater tower location on San Benito Mountain. Suppression is coordinated between BLM and CDF. The FMU is within Local Responsibility Area where the State provides direct protection under contract with the agency. But because of asbestos in the FMU, CDF will not enter the SBM RNA, but rather take up 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.

#### Wildland Fire Use

Wildland fire use for resource benefit is a fire management option within this FMU. Allow wildland fire use to promote natural conditions [which are?]. Established natural barriers may be able to hold fire within certain areas, depending on time of year, fuel loading, weather, location, and firefighting resources on hand, and if safety concerns have been addressed and mitigated.

Refer to the section on Fire Management in the San Benito Natural Area in the Hollister Fire Management Plan.

### 1.2.5 Recreation Access

Recreation and access will be fully addressed in the subsequent RNA management plan, using the Recreation Opportunity Spectrum (ROS) process, consistent with RNA management objectives. This process will identify recreation activities to be managed or discouraged in the RNA, including:

- OHV touring
- Competitive Events
- Commercial Activities (e.g., filming, outfitters)
- Camping
- Educational Field Trips
- Hiking
- Hunting
- Target Shooting
- Equestrian Trail Rides
- Mountain Bicycling
- Rock Hounding
- Bird/Wildlife Viewing
- Botanizing

## 1.3 MONITORING

The following monitoring methods will be continued and/or developed and implemented to fulfill the aforementioned goals and objectives. Additional biological and abiotic monitoring will be and assessed and implemented as a result of adaptive management.

- 1) Continue to collect data on San Benito evening-primrose (*Camissonia benitensis* (CABE)) from the known populations within the SBMRNA. The monitoring data will enable the BLM assess the recovery and habitat condition of this federally threatened plant species. Ongoing consultation with the US Fish and Wildlife Service will continue.

BLM will continue to fulfill its responsibilities for species recovery under the Federal Endangered Species Act.

*Monitoring:* BLM compliance with stipulations for managing the San Benito evening-primrose from the US Fish and Wildlife.

*Monitoring:* Public Compliance with Regulations and with BLM's Protection Measures Concerning Habitats for the San Benito evening-primrose.

Objectives:

This monitoring program documents in a systematic and repeatable way what type and intensity of disturbance occurs on potential and occupied habitats of *Camissonia benitensis* on a monthly basis during the use season (Oct-Apr) and bimonthly (May-Sep) outside of the primary use season. With this documentation, BLM can be accountable as to when inspections were made, what was found on the ground, what was done in response, and when corrective measures were taken.

First, BLM monitors public compliance at known sites for San Benito evening-primrose.

Second, BLM monitors the effectiveness of its measures to protect the species and its habitats with informational signs, fences, and pipe barriers to reduce disturbances caused by motorcycles and other vehicles in San Benito evening-primrose habitats. Inspection of protection measures shall occur on a weekly basis. The BLM and the US Fish and Wildlife Service designed a monitoring program (BLM, 1998) that conforms to the recent "no-jeopardy" biological opinion from the Service.

Third, BLM monitors the frequency of disturbances to evening-primrose habitats from landslides, flooding and other natural events.

Fourth, this monitoring also documents the Bureau's responsiveness (implementation monitoring) to these findings.

Monitoring Protocol Methods and Materials:

BLM natural resource specialists and volunteers inspect each known site in sufficient detail to determine whether change, either human-caused or natural, has occurred since the last inspection. The time needed at each potential habitat site varies by site size, its distance from a designated route, and the integrity around the perimeter of the habitat patch. Depending on the weather conditions and water level in Clear Creek, inspections take from less than five minutes to 120 minutes per site. One BLM employee working two days each month can complete compliance and effectiveness monitoring each month. Monitoring is possible in one day if BLM employees use a motorcycle or quad-runner to reduce transit time between polygons.

The protocol considers a human-caused disturbance within an area closed to the public or otherwise protected from motorized travel from a recreation visitor an instance of non-compliance, and is recorded for future management decisions. Non-compliant events vary in type, number and severity.

At each site during each visit an observer must:

- *Review tables for changes or unfinished recommendations*
- *Compare the site to the base map*
- *Check trails for use*
- *Check for new trails*
- *Check that signs are in place*
- *Check for use impacts in habitat*
- *Check for barrier damage (including tampering)*

- *Obscure tracks to establish baseline for the next inspection*
- *Identify impacts by location, type and severity*
- *Retake reference photos pre- and post-use season*
- *Check for sediment or erosion impacts to habitat*
- *Photograph impacts when warranted*

Each habitat site for *C. benitensis* is unique, and therefore, the inspection requires different strategies. If physical barriers are present at a site, BLM employees inspect the barriers to look for obvious breaks and to see whether people have moved barriers to hide the tampering. Cover-ups are the most difficult type of user non-compliance to detect quickly. However, because of the detailed notes available on track numbers and locations, BLM employees usually detect these kinds of infractions even when an attempt to obscure vehicle tracks is made.

#### Adaptive Management in Response to Compliance and Effectiveness Monitoring for the San Benito Evening Primrose

This monitoring tests the efficacy of recommended protective measures, detects gaps in protection, and report gaps in the protection of *C. benitensis* habitat. In areas where data collection shows that people have driven vehicles across habitat areas, BLM resource specialists respond with measures to reduce damage and reinforce public compliance.

Every two months the BLM Hollister Field Office reports on the findings from monitoring the *C. benitensis* habitats and on the management responses to prevent illegal damage to plants and their habitats. The degree of compliance with BLM regulations and with BLM management measures to protect the evening-primrose sets up structure for adaptive management of the RNA. One aspect of adaptive management for the benefit of the San Benito evening-primrose is to create habitat suitable for the species at sites where habitat does not currently exist. Creation of new habitat would be a hedge against loss of original habitat and reduce the risk of extinction of a plant subpopulation in the event of a rare event such as a flood.

#### *Monitoring Population Counts of the San Benito Evening-primrose*

Population monitoring is improving understanding of the status, distribution and habitats of this species (Taylor 1992 and 1995, BLM 1997). In addition to the plant inventory, botanists documented the descriptions of habitat and threats to potential habitats and occupied occurrences.

- number of known / historic / extant / potential habitat sites
  - pattern of distribution (patchy, ephemeral, scale, habitat shape)
  - time since last observed
  - status of populations at sites of known habitats annually (counts, biomass)
  - quality of sites: frequency, intensity, and extent of natural and human disturbances
  - portion of potential habitat as occupied: annually, short-term, long-term
  - measures of connectivity of habitat and of genetic composition
  - population trend
  - presence of pollinators / fecundity / viability of seed
- 2) Continue to monitor known locations, and increase inventory efforts, of all sensitive plant and animal species that occur within the SBMRNA (Appendix F).

These special status plants are include the rayless layia (*Layia discoidea*), talus fritillary (*Fritillaria falcata*), San Benito fritillary (*Fritillaria viridea*), twolobe spineflower (*Chorizanthe biloba* var.

*immemora*), slender pentachaeta (*Pentachaeta exilis* ssp. *aeolica*), and coast range false bindweed (*Calystegia collina venusta*).

#### Monitoring Objectives

This monitoring program for rayless layia documents in a systematic and repeatable way: the status of human and natural disturbance on known *L. discoidea* populations and its potential and occupied habitats; and the pattern of appearance of plants in known occupied habitat.

#### Monitoring Protocol

During 2004, the BLM Hollister Field Office and the California Native Plant Society will develop a species-specific inventory and monitoring protocol for *L. discoidea* that follows with the ongoing mapping and inventory work to describe the range and habitat for this species. Monitoring habitat will occur monthly.

#### Management Response Based on Monitoring

Management prescriptions for *L. discoidea* are consistent with management for *C. benitensis*. Further research regarding site characteristics for *L. discoidea* and *C. benitensis* is critical to gain an understanding of each species' ecological requirements. Based on monitoring results, adaptive management will determine actions and protection measures for all sensitive plant species within the RNA. In areas of high use or where continued non-compliance occurs, fences are constructed for added protection.

Monitoring for special status animal species will include the foothill yellow-legged frog and South Coast horned lizard. BLM staff developed a monitoring protocol for the foothill yellow-legged frogs in 2001. Additional transects were added to monitoring efforts in 2003. BLM will conduct annual surveys for this species. Herpetological surveys conducted in 1992 recorded sightings of the South Coast horned lizard. However, a formal monitoring plan has not been developed to date. BLM Hollister Field Office will work closely with the BLM El Centro Field Office in developing a monitoring plan. The El Centro Field Office has taken the lead in multi-agency monitoring across the range of the rare flat-tailed horned lizard (*P. mcallii*). A review of monitoring methods is needed to adapt other horned lizard monitoring protocols from desert and chaparral ecosystems for the forest-chaparral mosaic characteristic of the CCMA.

The BLM Hollister Field Office will develop the baseline inventory and monitoring protocol for the coast horned lizard in 2004. Monitoring will start in 2004 and cover the species throughout the CCMA.

### 3) Soil Loss Monitoring

BLM staff has been monitoring trail conditions systematically since 2001 according to the Soil Loss Monitoring Standards established by the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation. These standards are currently under review by the Division and the partner federal agencies. As data requirements for OHV trail conditions change, BLM will support changes to conform to regulations. Soil loss monitoring in the RNA will continue on designated routes in accordance with State soil loss guidelines. Based on this survey, routes requiring tread repair, drainage structures, and use signing are identified for further investigation and correction by resource and implementation staff.

As trail or barren conditions relate to undesired erosion rates, BLM will install silt fences to monitor for sources of erosion. BLM will close and reconfigure trails when trails are the cause of erosion.

Highest priority trails are those that are in the immediate vicinity of populations of the San Benito evening-primrose. Second priority for BLM is those trails that cross known habitats of BLM species of management concern. Third priority of concern is those OHV trails that cross potential habitats of BLM species of management concern.

- 4) Continue breeding bird and nest surveys in the SBMRNA.

The high-elevation San Benito Mixed Conifer Forests provide habitat islands for several bird species found nowhere else in the Central Coast Range. Changes in the populations of nesting bird species may be initial indicators that the habitat the conifer forest habitat in the SBMRNA is changing.

Chaparral bird species as indicators of large-scale environmental change are as follows: California thrasher (*Toxistoma redivivum*), rufous-crowned sparrow (*Aimophila ruficeps*), Bell's sage sparrow (*Amphispiza belli* spp. *belli*), and black-chinned sparrow (*Spizella atrogularis*). These four species are key indicator bird species nominated by the Point Reyes Bird Observatory for the California Partners In Flight Program for bird conservation (Lovio et al., 2003). At the highest elevations in and around the SBMRNA, BLM will coordinate long-term monitoring for breeding populations of the following species: mountain quail, olive-sided flycatcher (*Contopus cooperi*), gray flycatcher (*Empidonax wrightii*), and Hammond's flycatcher (*E. hammondii*).

In addition, BLM will continue long-standing monitoring for raptor species and the breeding bird survey in the CCMA.

- 5) Inventory and monitor the San Benito Mountain conifer forest to gain an understanding of the demography and health of the populations.
- 6) Monitor and develop protocol to eradicate and control invasive plant and animal species.
- 7) Design and implement habitat restoration plan to obscure and/or rehabilitate closed trails and to measure and control erosion.
- 8) Continue ORV compliance monitoring and increase enforcement as necessary to halt unauthorized vehicle use in the SBMRNA.

Law enforcement officers from BLM and from the Sheriff's Departments of Fresno and San Benito Counties check regularly for compliance among OHV recreation visitors to the CCMA. All BLM law enforcement and park rangers have training in monitoring OHVs for compliance with California State Standards for Noise. Monitoring for noise is ongoing and is an integral part of the workload for rangers.

Information about the spectrum of visitors to the CCMA is of poor quality. BLM needs much more information about the people who are visiting the Area because their thoughts and opinions about BLM services for the Area can guide resource and recreation management. Also, demographic information from visitors and from nearby residents can help BLM plan better for future changes in recreation management. Another aspect for monitoring is remote sensing with electronic counters to record numbers of vehicles at major entrance points and selected locations. This visitation information is important in understanding recreation use patterns and in developing strategies to address recreation use demand

- 9) Develop a monitoring plan for all fire management projects for the SBMRNA.

- 10) Develop a barren monitoring plan that will enable BLM staff to understand the biologic crust and implement management actions to control erosion rates and sediment delivery from serpentine barrens.

Monitoring rates of soil formation and erosion in areas with naturally occurring processes and in areas impacted by human use, can combine over time to provide a watershed-scale model of net amounts of sediment flows and changes to stream channel morphology. Both sediment flows and stream morphology are critical factors for shaping and transforming land areas in ways that affect populations of rare plants such as the San Benito evening-primrose.

One easy way to measure soil erosion is to establish silt fences at key sites of barren related erosion. These fences can measure changes to sites, especially near habitats for the San Benito evening-primrose, and provide verification for needed restoration throughout the RNA. When indicated by Soil Loss Monitoring protocol done in connection with the California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division, BLM may establish silt fences at barren erosion sites in tandem with restoration projects to document the effectiveness of intended improvements. Monitoring erosion throughout sub-watersheds of the RNA may be critical for minimizing sediment flows, improving water flows and water quality, and habitat creation and conservation for rare plant species.

## **1.4 ALLOWABLE USES**

Uses inconsistent with the preservation of the values for which the RNA was designated will not be allowed. Allowable uses will be addressed in detail in the subsequent RNA management plan. Allowable uses identified in this document will guide management of the RNA in the interim.

The following uses will be allowed:

- Educational tours;
- Research – require written authorization;
- Existing rights-of-way, easements, and real estate permits;
- Motorized and mechanized vehicle use on designated open routes;
- Native American access – written authorization if beyond the scope of allowable uses;
- Prescribed fire – to preserve the desired characteristics of the RNA;
- Hiking on marked and designated trails.

The following uses will not be allowed:

- Camping
- Hunting/target shooting
- Special Recreation Permit events except on R011 (Spanish Lake Road)
- Geo-caching
- Paintball
- Hang-gliding
- Wood-fueled campfires
- Plant or animal collection
- Collection of cultural resources
- Wood collection

- Metal detectors
- Grazing
- Timber harvest

The above restrictions apply to recreational use only and may be allowable for research projects. This list is not all-inclusive and any uses not specifically authorized are restricted. Activities involving organized groups or commercial activities would need written authorization.

All uses will be in accordance with 43 CFR 8223.1

- A) 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.
- B) No person shall use, occupy, construct, or maintain facilities in a manner inconsistent with the purpose of the research natural area.
- C) Scientists and educators shall use the area in a manner that is non-destructive and consistent with the purpose of the research natural area.

## APPENDIX F SPECIAL STATUS SPECIES

### Special Status Plant Species

Special status plant species are those species that are: (1) Federally listed as Threatened or Endangered; (2) Federally proposed as Threatened or Endangered; (3) Federal candidates for listing as Threatened or Endangered; (4) State listed as Endangered, Threatened, or Rare; or (5) designated as sensitive by the BLM California State Director.

Seven different special status plant species occur within the CCMA. One of these species, the San Benito evening-primrose (*Camissonia benitensis*), is listed as federally threatened and is described in section 3.4.2. These plant species are either locally rare populations (geographic endemism) or are only known to exist on serpentine soils (edaphic endemism). The BLM considers special status species in planning any BLM-authorized activity, to ensure that the BLM does not contribute to negative impacts and declines of the species populations and their habitats.

The species described below are also listed by the California Native Plant Society as List 1B. List 1B includes plants that are rare, threatened, or endangered in California; therefore, it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA). All of the plants that make up List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Extensive inventory and monitoring by protocols is underway for the San Benito evening-primrose and the rayless layia (*Layia discoidea*). The remaining special status plant species in the CCMA will be part of an inventory and monitoring program scheduled for Spring 2004 and beyond.

Table X. Native Plant Species of Management Concern in the Clear Creek Management Area

Common Name <i>Scientific Name</i> Family	Life Form	Legal Status	Habitat	Vegetation Community
Federally Listed Plant Species				
San Benito Evening-primrose <i>Camissonia benitensis</i> Onagraceae	annual herb	FT BLM SS CNPS List 1B	chaparral, cismontane woodland, serpentine terraces. Known only from San Benito and w. Fresno Counties	Serpentine barrens, foothill pine / chaparral – woodland, serpentine riparian
BLM Special Status Plant Species				

Rayless layia <i>Layia discoidea</i> Asteraceae	annual herb	BLM SS FSC CNPS List 1B	Chaparral, cismontane woodland, lower montane coniferous forest, serpentine alluvium and serpentine talus. Known only from W. Fresno and San Benito Counties, primarily within the CCMA ultramafics.	Serpentine barrens, foothill pine / chaparral – woodland, southern ultramafic Jeffrey pine forest, serpentine riparian
Pale yellow tidytips <i>Layia heterotricha</i> Asteraceae	annual herb	BLM SS FSC CNPS List 1B	cismontane woodland, juniper woodland, valley and foothill grassland, on alkaline or clay soils, 300 to 1600 m elevation	This rare species is known from one site on private land in the far southeast corner of the CCMA.
Golden madia <i>Madia radiata</i> Asteraceae	annual herb	BLMS CNPS List 1B	cismontane woodland, valley and foothill grassland, 25 to 900 m elevation	There is one record of this species at the south end of the CCMA. Another occurs about 400 m from the CCMA boundary on the north side.
Mt Diablo Phacelia <i>Phacelia phacelioides</i> Hydrophyllaceae	annual herb	BLMSS CNPS List 1B	Chaparral, cismontane woodland, talus slopes, serpentine	Serpentine barrens, Non-serpentine
Panoche pepperweed <i>Lepidium jaredii</i> ssp. <i>album</i> Brassicaceae	annual herb	BLMS CNPS List 1B	valley and foothill grassland, on alluvial fans and washes, 185 to 275 m elevation	Botanists have found this species about 100 m outside the CCMA eastern boundary.
gray (Indian Valley) bushmallow <i>Malacothamnus aboriginum</i> Malvaceae	perennial deciduous shrub	BLMS CNPS List 1B	chaparral, cismontane woodland, on rocky soil, usually in burned areas, 150 to 1700 m elevation	This species is known from two locations inside the CCMA.
San Benito Fritillary <i>Fritillaria viridea</i> Liliaceae	annual herb	BLM SS CNPS List 1B	Chaparral, serpentine slopes.	Serpentine barrens, foothill pine / chaparral – woodland, southern ultramafic Jeffrey pine forest
San Benito Spineflower <i>Chorizanthe biloba</i> var. <i>immemora</i> Onagraceae	annual herb	BLM SS CNPS List 1B	Chaparral, cismontane woodland, sandy and gravelly soils. Known only from the East slope of the Diablo Range.	Foothill pine/chaparral - woodland
Slender pentachaeta <i>Pentachaeta exilis</i> ssp. <i>aeolica</i> Asteraceae	annual herb	BLM SS CNPS List 1B	Valley and foothill grassland. Known only from Monterey and San Benito Counties.	Non-serpentine

Talus Fritillary <i>Fritillaria falcata</i> Liliaceae	annual herb	BLM SS CNPS List 1B	Chaparral, cismontane woodland, shale granite or serpentine talus.	Serpentine barrens, foothill pine / chaparral – woodland, southern ultramafic Jeffrey pine forest
Other Plant Species of Management Concern				
<i>Aspidotis Carlotta- halliae</i> Carlotta Hall's Lace Fern Pteridaceae	fern	CNPS List 4	Generally serpentine slopes, crevices, outcrops	Serpentine barrens, foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest
Heerman's Buckwheat <i>Eriogonum heermannii</i> Polygonaceae	Perenni al shrub	CNPS List 4	Serpentine, sandy washes	Serpentine riparian (terraces)
Monardella antonina ssp. Benitensis Lamiaceae	Perenni al subshru b	CNPS List 4	Chaparral, serpentine	Serpentine barrens, foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest
Santa Clara thornmint <i>Acanthominth a lanceolata</i> Lamiaceae	annual herb	CNPS List 4	Chaparral, often serpentine, cismontane woodland, coastal scrub, rocky.	Serpentine barrens, foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest
San Benito Thornmint <i>Acanthominth obovata</i> ssp. <i>obovata</i> Lamiaceae	annual herb	CNPS List 4	Chaparral, often serpentine, cismontane woodland, coastal scrub, rocky.	Serpentine barrens, foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest
South Coast Range Morning Glory <i>Calystegia collina</i> ssp. <i>venusta</i> Convolvulacea e	Perenni al herb	CNPS List 4	Chaparral, cismontane woodland, valley and foothill grassland, serpentinite	Serpentine barrens, foothill pine – chaparral woodland, southern ultramafic Jeffrey pine forest
Hernandez Bluecurls <i>Trichostema rubisepalum</i> Lamiaceae	Annual herb	CNPS List 4	Gravelly streambeds	Serpentine riparian, Serpentine vernal pools

**Special Status Plant Species**

**Rayless Layia - *Layia discoidea***

The rayless layia is a two- to six-inch tall herbaceous member of the sunflower family which, produces in May inconspicuous yellow flowers lacking the showy, outwardly-extending ray flowers typical of most sunflowers. The legal status of this species includes federal species of concern, BLM

special status and CNPS list 1B. The distribution of the rayless layia includes approximately 25 known populations limited to the CCMA and to the Hepsedam Peak - Laguna Mountain area of Laguna Ranch two miles southwest of the CCMA. This distribution is as follows;

14 in Clear Creek watershed (all on public – fencing partially protects seven populations; another is the sole population of this species located in the San Benito Mountain Research Natural Area),

7 in San Carlos Creek watershed (five on public land),

2 in the Laguna Creek watershed (both on private land),

1 in Picacho Creek watershed (public),

1 in White Creek watershed (public),

-----

25 TOTAL (21 of which are on public lands within the CCMA)

Habitat for the rayless layia includes steep rocky (talus) slopes, serpentine barrens, openings on steep slopes within chaparral stands and under forest canopy, and stream terraces. Potential and occupied rayless layia sites occur in the following vegetation communities; serpentine barrens, serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine forest, and serpentine riparian. Portions of seven populations have been protected. Road construction and vehicle traffic have impacted portions of these and other known populations and available habitat for this species in the CCMA to the extent that this species may warrant listing as federally threatened or endangered in the near future.

#### **Pale Yellow Layia – *Layia heterotricha***

The pale yellow layia is known from few occurrences in non-serpentine soils southeast of the CCMA and one record on private lands within the CCMA. This fragrant member of the sunflower family is a CNPS 1B species that inhabits open, clay soils found in cismontane woodland, pinyon and juniper woodland, valley and foothill grassland.

#### **Showy Madia – *Madia radiata***

Showy madia, a CNPS 1B species, has been observed on non-serpentine soils in the south end of the CCMA. The golden yellow flowers open in clusters during March and April providing showy displays. This uncommon, annual herb occurs on grassy slopes of cismontane woodlands and valley and foothill grasslands.

#### **Mount Diablo Phacelia - *Phacelia phacelioides***

The Mount Diablo phacelia, a BLM special status, CNPS 1B rare species, is a two- to twelve-inch tall member of the waterleaf family. It produces purple-striped, white flowers in a coiled inflorescence at the tops of its branches from April to May. This plant is known to occur in fourteen rocky or chaparral sites in Alameda, Contra Costa, Stanislaus, and Santa Clara counties, and two sites in San Benito county within the CCMA. Within the CCMA the Mount Diablo Phacelia can be found in serpentine foothill pine–chaparral woodland and non serpentine vegetation communities.

#### **Panoche Pepperweed – *Lepidium jaredii ssp. album***

The Panoche pepperweed, a member of the mustard family, is a CNPS 1B species that occurs outside the CCMA in non-serpentine soils. This tiny annual herb occurs in alkali soils within valley and

foothill grasslands near the CCMA, however, no locations have been sited within the CCMA boundaries.

**Indian Valley Bushmallow – *Malacothamnus aboriginum***

The Indian valley bushmallow is a small perennial shrub known from s. San Benito, e. Monterey and w. Fresno counties. Only two locations of this hairy shrub are known from the CCMA on rocky soils. This species responds favorably to fires and is often seen in greater numbers in burned areas.

**San Benito Spineflower - *Chorizanthe biloba var. immemora***

The San Benito spineflower is a BLM special status, CNPS 1B annual herb that occurs in Fresno, Monterey, and San Benito counties. Its habitat includes sandy to gravelly openings on sedimentary soils in dry woodland and chaparral. These soils are found in the serpentine foothill pine-chaparral woodland, and serpentine riparian vegetation communities within the CCMA. Reveal and Hardham (1989) documented one of the few known populations of this species was documented near the mouth of Clear Creek in 1988. In 1994, BLM fenced a one-mile long area that surrounds this location to prevent impacts from vehicle use. Little is known about the San Benito spineflower, but it is exceedingly rare (Reveal and Hardham 1989).

**San Benito Fritillary - *Fritillaria viridea***

The San Benito fritillary is a BLM special status species and CNPS 1B, is a lily that grows at two to four years of age a one- to three-foot stem with periodic whorls of leaves and green-brown flowers. It is known from Monterey, San Benito, and San Luis Obispo Counties. Recent surveys in the CCMA have documented several new populations in openings between shrubs in the serpentine barren, serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine and non-serpentine vegetation communities. Habitat for this species is quite widespread in the CCMA and the San Benito fritillary may have several hundred populations in the CCMA.

**Talus Fritillary - *Fritillaria falcata***

The talus fritillary is a lily that grows from a bulb five to six inches below ground. Between March and May, plants produce mottled yellow-green flowers nearly prostrate on the ground. This fritillary occurs in five counties but only nine populations of this species have been recorded, and it is considered as BLM special status and CNPS 1B. Most populations support less than 100 individuals. One of the two populations in the CCMA supports several hundred individuals, making this the largest population of this species. Most individuals within this population are inside a protective fence enclosure. The other population in the CCMA is inside the San Benito Mountain Research Natural Area. This population is unfenced but impacts or threats to this population have not been recorded at this site. Low-intensity searches for additional populations of this fritillary, in apparently suitable habitat, have not documented additional populations, indicating that this species may be extremely rare. Inventory needs should be conducted in openings between shrubs in the serpentine barren, serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine and non-serpentine vegetation communities.

**Slender Pentachaeta - *Pentachaeta exilis ssp. aeolica***

The slender pentachaeta is a three- to five-inch tall herbaceous member of the sunflower family. This species is considered as BLM special status and CNPS 1B. It produces flowers with red-yellow centers (tube flowers) and white, outwardly extending (ray) flowers during April-May. This species

is exceedingly rare and is currently known from only two sites in the Santa Lucia Mountains near The Indians and from two sites near the mouth of Clear Creek in non-serpentine valley oak savannah. During 1994, BLM fenced the only known population of this species on public lands within the CCMA as well as most of the grassland that is suitable habitat for this species.

#### **Other Plant Species of Concern (CNPS List 4)**

In addition to the above special status plant species, several uncommon plant species that are typically associated with serpentic soils occur throughout the CCMA as well. The following species are on the CNPS List 4, a watch list for species of limited distribution.

#### **Carlotta Hall's Lace Fern – *Aspidotis carlotta-halliae***

A member of the Pteridaceae family, the Carlotta Hall's lace fern is a perennial fern with fronds that are 8-15 cm long, with leaflets (frondlets) that are tri-pinnate and leathery. This uncommon lace fern is known from five counties in the central western geographic subdivision of California. Carlotta Hall's lace fern habitat consists of rocky outcroppings and crevices, primarily on serpentine. The number of occurrences within the CCMA is unknown and inventory efforts are underway.

#### **Hernandez BlueCurls – *Trichostema rubisepalum***

The Hernandez blue curls is a highly aromatic, annual plant that occurs in gravelly stream beds in Napa, Tuolumne, Mariposa and San Benito counties. This species is known from only a few occurrences throughout the CCMA in the serpentine riparian vegetation community.

#### **San Benito Thornmint - *Acanthomintha obovata* ssp. *obovata***

The San Benito thornmint is an aromatic annual herb that blooms from April to July. The plants are four to 25 cm high, glandular, with spiny leaves and with purple-tipped white flowers. This member of the mint family occurs on grassy slopes, in oak woodlands, and in chaparral, only in San Benito and Monterey counties. A few populations are known to occur within the CCMA in serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine forest and non-serpentine vegetation communities.

#### **Santa Clara Thornmint – *Acanthomintha lanceolata***

This aromatic, spiny, annual herb, Santa Clara thornmint, is a member of the mint family. The plants are ten to 30 cm high, glandular, with pink-tipped white flowers. This thornmint occurs in few scattered location in seven counties, including San Benito and Fresno counties. Its habitat includes rocky serpentine outcrops in serpentine barren, serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine forest and non-serpentine vegetation communities. Several populations are present within the CCMA, however, a thorough inventory needs to be conducted.

#### **San Benito Monardella - *Monardella antonina* ssp. *benitensis***

The San Benito monardella is a fragrant, perennial herb that blooms July-August. The plants are low growing, generally less than 60 cm with purple flowers that occur in clusters. This species occurs on serpentine barrens and outcroppings and is only known from the New Idria serpentine area in San Benito County. Several populations have been documented within the CCMA serpentine barren, serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine forest and non-serpentine vegetation communities. Thorough inventory efforts have not been conducted.

**Guirado's Goldenrod – *Solidago guiradonis***

Guirado's goldenrod, a rare perennial member of the sunflower family, is known only from the CCMA in both San Benito and w. Fresno counties. This lovely goldenrod occurs in serpentine riparian vegetation community in heavy, asbestos-laden soils.

**Western Heermann's Buckwheat – *Eriogonum heermannii* var. *occidentale***

The western Heermann's buckwheat, a member of the buckwheat family, is a dioecious shrub bearing white to pink flowers that bloom from July to October. Its habitat is clay or shale slopes of only San Benito and Monterey counties. Within the CCMA, this buckwheat grows on the lower Clear Creek stabilized terrace. Further inventory and monitoring efforts are planned for 2004.

**South Coast Range Morning Glory - *Calystegia collina* ssp. *venusta***

The South Coast Range morning glory is known from a four-county area: Santa Barbara, Monterey, San Benito, and Fresno Counties. Plant surveys during 1991-1992 uncovered several populations in the Diablo Range near Vallecitos Valley, on Laguna Mountain, at Turkey Flat, and at the mouth of Clear Creek. This morning glory may occur on serpentine in some areas, and it is abundant on serpentine near Table Mountain in southeastern Monterey County. In the CCMA the south coast range morning glory is found in serpentine foothill pine-chaparral woodland, southern ultramafic Jeffrey pine and non-serpentine vegetation communities.

**Native Animals of Management Concern in Clear Creek Management Area**

Twenty-five native animals of management concern occur or have the potential to occur in the Clear Creek Management Area. The occurrence of any native animal species of management concern on public lands is a factor considered in planning for the CCMA. Bureau wildlife biologists queried the California Natural Diversity Data Base for twenty USGS 7.5-minute quadrangles, including the CCMA and the surrounding region, to augment information in BLM files on native animals species of management concern that do occur and could occur in the CCMA. Biologists did not consider animals such as the California tiger salamander, or rare invertebrates, which have not been found within ten miles of the CCMA or that occupy habitats not found in the CCMA. California state species of special concern may not have extensive data to include in this document. Future monitoring, confirmed sightings, or specimens recovered from the CCMA will establish a known occurrence for species that may or are likely to occur in the CCMA. These new occurrences will become a factor considered in future planning for the CCMA. All sensitive animal species are part of the CCMA Wildlife Habitat Protection Plan (BLM, 2003). Monitoring programs are currently being developed. Species descriptions come from the following Internet sources: [www.dfg.ca.gov](http://www.dfg.ca.gov), [www.sdnhm.org](http://www.sdnhm.org), [sacramento.fws.gov](http://sacramento.fws.gov), and [endangered.fws.gov/wildlife.html](http://endangered.fws.gov/wildlife.html).

The HFO –BLM notes observations and is developing monitoring protocol for the six DFG California Species of Special Concern which occur in the CCMA. "Species of Special Concern" (SSC) status applies to animals not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

Table XI. Native Animal Species of Management Concern in Clear Creek Management Area

Common Name <i>Scientific Name</i>	Legal Status	Habitat	Vegetation Type	Potential for Occurrence
<b>INVERTEBRATES</b>				
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	Vernal pools	Serpentine Vernal Pools	Initial surveys completed March 17, 2004, Results pending.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	Vernal pools	Serpentine Vernal Pools	Initial surveys completed March 17, 2004, Results pending.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Vernal pools	Serpentine Vernal Pools	Initial surveys completed March 17, 2004, Results pending.
Valley elderberry longhorn <i>Desmocerus californicus dimorphus</i>	FT	Riparian habitats and associated habitats where elderberry ( <i>Sambucus sp.</i> ) grows	Serpentine Riparian	Unknown
Ciervo aegialian scarab beetle <i>Aegialia concinna</i>	BLM sensitive	Larvae live in soil or sand, feeding on organic materials or plant roots, little known	Non-Serpentine (other)	Unknown
San Joaquin dune beetle <i>Coelus gracilis</i>	BLM sensitive	Adult dune beetles spend a majority of their time in sandy soils, whereas larval forms are found exclusively in loose sands, little known	Non-Serpentine (other)	Unknown
<b>AMPHIBIANS</b>				
Foothill yellow-legged frog <i>Rana boylei</i>	BLM sensitive, USFWS SC, DFG SSC	partly shaded, shallow streams and riffles, with some cobble-sized substrate for egg-laying.	Serpentine Riparian	Clear Creek is known as a core population of the FYLF. Surveys indicate the presence of self-sustaining populations in all perennial streams within the CCMA.
California Red-legged frog <i>Rana aurora draytonii</i>	FT	Ponds and pools with dense riparian vegetation	Serpentine Riparian, Serpetine Vernal Pools	Recently discovered on lands within the CCMA south of Condon Peak.

REPTILES				
Northwestern pond turtle ( <i>Clemmys marmorata marmorata</i> ) and Southwestern pond turtle ( <i>Clemmys marmorata pallida</i> )	UFSWS SC, DFG SSC & BLM sensitive, DFG SSC	aquatic habitat including ponds, marshes, rivers, streams with aquatic vegetation. Requires basking sites and sandy banks or grassy open fields in upland habitat for egg-laying.	Serpentine Riparian	Has been observed in the Clear Creek/San Benito River confluence where all habitat requirements occur.  (The two subspecies are considered together here due to the difficulty in field identification and overlapping ranges)
Two-striped garter snake <i>Thamnophis hammondi</i>	BLM Sensitive DFG SSC	aquatic, in or near permanent fresh water, along streams with rocky bottoms and riparian habitat.	Serpentine Riparian	Has been observed within the CCMA streams
Coast horned lizard <i>Phrynosoma coronatum frontale</i>	UFSWS SC DFG SSC	variety of habitats including open areas for sunning, brushes for cover, friable soils and abundant supply of ants and other insects.	Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Occurs throughout the CCMA at a various elevations.
BIRDS				
California condor <i>Gymnogyps californianus</i>	FE, DFG SE	foraging; foothills, grasslands, oak-savannah, roosting /nesting higher elevation on cliffs.	Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Recent reintroduction at Pinnacles National Monument within 25 miles distance from CCMA. Former foraging habitat southern San Joaquin Valley.

Bald eagle <i>Haliaeetus leucocephalus</i>	BLM sensitive, USFWS SC, DFG SE,	breeding; mountain and foothill forests and woodlands near reservoirs; migratory	Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	One known breeding/nest pair on NE edge of Hernandez Reservoir, contiguous to CCMA; other winter migrants within 25 mile radius of CCMA
Golden eagle <i>Aquila chrysaetos</i>	DFG SSC	rock outcroppings, forest and woodlands, grasslands, streams and waterways.	Serpentine Foothill Pine-Chaparral Woodland, Serpentine Chaparral, Non-Serpentine (other)	Has been observed within CCMA. Nests within 25 miles of CCMA at Pinnacles National Monument.
Prairie falcon <i>Falco mexicanus</i>	DFG SSC	variety of habitats; open grassland, woodlands, streams and rocky outcroppings.	Serpentine Foothill Pine-Chaparral Woodland, Serpentine Chaparral, Non-Serpentine (other)	Observed in the overall CCMA, no known nesting.
Sharp-shinned hawk <i>Accipiter striatus</i>	DFG SSC	mixed conifer forests, woodlands.	Serpentine Foothill Pine-Chaparral Woodland, Serpentine Chaparral Non-Serpentine (other)	Nests within the San Benito Mountain RNA and throughout forested areas within the CCMA.
Bell's sage sparrow <i>Amphispiza belli belli</i>	DFG SSC	chaparral, coastal sage scrub.	Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Occurs within the CCMA chaparral.
<b>MAMMALS</b>				
Western mastiff bat <i>Eumops perotis californicus</i>	BLM sensitive DFG SSC	Open woody and brushy habitats in arid, and semi-arid areas. Roosts in buildings, crevices in cliffs and trees, and tunnels	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown

Pallid bat <i>Antrozous pallidus</i>	BLM sensitive DFG SSC	Open woody and brushy habitats in arid, and semi-arid areas. Roosts in caves, mine tunnels, crevices in rocks, buildings and trees.	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown
Townsend's western big-eared bat <i>Plecotus townsendii townsendii</i>	BLM sensitive DFG SSC	Open woody and brushy habitats in arid, and semi-arid areas. Roosts in caves, mine tunnels and buildings.	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown
Fringed myotis <i>Myotis thysanoides</i>	BLM sensitive	Open woody habitats in arid, and semi-arid areas. Roosts in caves and buildings.	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown
Long-eared myotis <i>Myotis evotis</i>	BLM sensitive	Open, thinly woody habitats in arid, and semi-arid areas. Roosts primarily in buildings or trees, occasionally caves.	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown
Small-footed myotis <i>Myotis ciliolabrum</i>	BLM sensitive	Open woody habitats. Roosts in caves, mine tunnels, crevices in rocks, buildings, and trees.	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown

Yuma myotis <i>Myotis yumanensis</i>	BLM sensitive	Open woods in arid areas. Roosts in caves, tunnels, and buildings	Serpentine Riparian, Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown
Big-eared kangaroo rat <i>Dipodomys elephantinus</i>	DFG SSC	chaparral woodland communities	Serpentine Foothill Pine-Chaparral Woodland, Southern Ultramafic Jeffrey Pine Forest, Serpentine Chaparral, Non-Serpentine (other)	Unknown

FE = Federally Endangered, FT = Federally Threatened, SC = Federal Species of Concern, DFG SE = CA State Endangered, DFG ST = CA State Threatened, DFG SSC = CA Species of Special Concern

**Branchiopods**

**Conservancy fairy shrimp – *Branchinecta conservatio***

**Vernal pool fairy shrimp – *Branchinecta lynchi***

**Vernal pool tadpole shrimp – *Lepidurus packardi***

These vernal pool invertebrates are considered together here because of overlapping habitat requirements within the CCMA. The vernal pool fairy shrimp is federally listed as threatened. The conservancy fairy shrimp and the vernal pool tadpole shrimp are federally listed as endangered. The California linderiella fairy shrimp is a U.S. Fish and Wildlife service federal species of concern. These invertebrates inhabit rain-filled ephemeral pools, within the vernal pool vegetation complex of the CCMA, that form in depressions in bedrock and meadows. Pools must fill frequently and persist long enough for the species to complete its lifecycle, which takes place entirely within vernal pools.

The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. This highly disturbed remnant habitat is imperiled by a variety of human-caused activities, primarily urban development, water supply and flood control projects, and agriculture.

The Conservancy fairy shrimp (*Branchinecta conservatio*), and the Vernal pool fairy shrimp (*Branchinecta lynchi*), are small crustaceans ranging in size from about ½ to one inch long. They have delicate elongate bodies, large stalked compound eyes, no carapaces, and eleven pairs of swimming legs. They glide gracefully upside down, swimming by beating their legs in a complex, wavelike movement that passes from front to back. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The vernal pool tadpole shrimp (*Lepidurus packardi*) is a small crustacean with compound eyes, a large shield-like carapace (shell) that covers most of the body, and a pair of long cercopods (appendages) at the end of the last abdominal segment. Vernal pool tadpole shrimp adults reach a length of 2 inches in length. They have about 35 pairs of legs and two long cercopods.

## **Insects**

### **Valley elderberry longhorn – *Desmocerus californicus dimorphus***

The valley elderberry longhorn beetle is a federally listed species (threatened). Valley elderberry longhorn beetles are stout-bodied ranging from ½ to 1 inch in length. Adult males have red-orange elytra (wing covers) with four spots. Adult females have dark colored elytra. The valley Elderberry beetle is an insect subspecies endemic to the central valley of California. The beetle is found in riparian and upland associated habitats where elderberry (*Sambucus* sp.) grows. Potential Valley elderberry longhorn beetle habitat is defined by the presence of elderberry plants in areas below 3,000 feet in elevation. Within the CCMA, the valley elderberry longhorn beetle will be associated with the riparian vegetation communities where its food source, elderberry, occurs. Due to the extensive destruction of California's Central Valley riparian forests the valley elderberry longhorn beetle, though wide-ranging, is in long-term decline.

### **Ciervo aegialian scarab beetle – *Aegialia concinna***

The Ciervo aegialian scarab beetle, a tiny, flightless beetle, is a BLM sensitive species. Little is known about its specific life history traits and habitat. Larvae live in soil or sand, feeding on organic materials or plant roots. The Ciervo aegialian scarab beetle has been associated with Delta and inland dune systems and sandy substrates; however, plant associations specific to this species have not been reported. This invertebrate may occur in the non-serpentine areas within the CCMA that meet its habitat requirements.

### **San Joaquin dune beetle – *Coelus gracilis***

The San Joaquin dune beetle is a BLM sensitive species. Little is known about this tiny brown beetle's specific life history traits and habitat. Activity coincides with the growth period of the winter ephemeral plants under which San Joaquin dune beetles reside. Adult dune beetles spend a majority of their time in sandy soils, whereas larval forms are found exclusively in loose sands. This invertebrate may occur in the non-serpentine areas within the CCMA that meet its habitat requirements. Adults typically are found 5 to 10 centimeters (2.0 - 3.9 inches) underground under a canopy of vegetation, and less often under ground with a bare surface.

## **Amphibians**

### **Foothill yellow-legged frog - *Rana boylei***

The foothill yellow-legged frog is a BLM sensitive species, a U.S. Fish and Wildlife Service federal species of concern and a California species of special concern. This frog usually ranges in size from that of a nickel to a 50-cent piece. Formerly, it occurred from western Oregon south along coastal mountains to Los Angeles County, California and in the Sierra Nevada foothills. It is now rare or absent south of northwestern San Luis Obispo County and the southern Sierra Nevada foothills. The foothill yellow-legged frog inhabits rocky streams, creeks, and rivers in chaparral, woodland, and forest. This frog is associated with the riparian vegetation community, and occurs in all major creeks of the CCMA, with the largest population in Picacho Creek. During warm months, foothill yellow-legged frogs occupy the entire length of Clear Creek.

**California red-legged frog – *Rana aurora draytonii***

The California red-legged frog is a federally listed species (threatened), with critical habitat proposed in the federal register. California's largest native frog, it ranges from 1.5 to 5 inches in length. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. The adults require dense riparian vegetation closely associated with still or slow moving water.

The historic range of the California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties.

**Reptiles**

**Northwestern pond turtle *Clemmys marmorata marmorata* and  
Southwestern pond turtle *Clemmys marmorata pallida***

These two subspecies of the Western pond turtle (*Clemmys marmorata*) are considered together here because the two intergrade and are difficult to distinguish in some localities. The Southwestern pond turtle is a BLM sensitive species and a California species of special concern. The Northwestern pond turtle is a California Species of Special Concern. It ranges in size from three to seven inches long. This pond turtle is mainly found east of the Cascade-Sierra Nevada crest in northwest California, with outlier populations in southern California. For part of its life cycle, this turtle depends on streams, or lakes and reservoirs in open woodland, grassland, or open forest associated with the riparian vegetation community, of the CCMA. In the CCMA, the western pond turtle occurs in lower Clear Creek and in the San Benito River but has not been documented in any other CCMA creeks, perhaps because of the lack of large enough pools.

**Coast horned lizard – *Phrynosoma coronatum ssp. frontale***

The coast horned lizard is a California Species of Special Concern and a U.S. Fish and Wildlife Service federal species of concern. This lizard, cryptic in coloration, blends into the environment, and ranges in size from 2.5 to 4 inches. Coast horned lizards are known to occur in a variety of habitats, including chaparral, grassland and coniferous forests. Within the CCMA, this species is most commonly sighted in the shrub-dominated communities where loose, fine soils and an abundance of native ants occur which includes the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas. It relies on open areas for sunning and nearby brush for cover.

**Two-striped garter snake - *Thamnophis hammondi***

The two-striped garter snake is a BLM sensitive species and a California species of special concern. This snake ranges in size from seven to eighteen inches and occurs in perennial fresh water locations such as streams with rocky beds. It can be found from the vicinity of Salinas (Monterey County, California) to northwestern Baja California. Within the riparian vegetation community of the CCMA, the two-striped garter snake occurs in Clear Creek and White Creek sub-watersheds and may occur in all other creeks in the CCMA.

## **Birds**

### **California condor - *Gymnogyps californianus***

The US Fish and Wildlife Service listed the California condor as federally endangered on March 11, 1967 (32 FR 4001) and currently the California condor is listed by the state of California as endangered. This immense vulture has a wingspan of nearly ten feet and weighs about 22 pounds. It is one of the largest flying birds in the world, as well as one of the rarest. Adults are black except for white under-wing linings and edges of the upper secondary coverts. The head and neck are mostly naked; the skin on the neck area is gray, grading into various shades of yellow, red, and orange on the head. As scavengers, condors do not kill for food but feed on available carrion.

The California condor declined quickly over the past century. The last wild condor was captured in 1987; the US Fish and Wildlife Service has raised young birds in captivity and reintroduced them into the wild in western Monterey County, eastern San Luis Obispo County, and eastern Santa Barbara County in California. In San Benito County a reintroduction program is underway at the Pinnacles National Monument, approximately ten to fifteen miles west of the CCMA. Release at the National Monument is scheduled for December 2004.

Habitat for the California condor consists of arid foothills and mountains of southern and central California, and formerly included the San Joaquin Valley. Potential condor foraging and nesting habitat exist within and around the CCMA within the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas. The BLM will consider the habitat needs and food supply for California condors in future planning for the CCMA.

### **Bald eagle - *Haliaeetus leucocephalus***

The bald eagle was listed as endangered in 1970 and declassified as threatened on July 12, 1995. The bald eagle is a BLM sensitive species, a U.S. Fish and Wildlife Service federal species of concern and a California endangered species. This species has no designated critical habitat. Original declines in bald eagles were attributed to the use of DDT. In 1978, only 40 nest territories were known in California. As of 1997, 142 bald eagle nests were known from the six northern California National Forests, and public and private lands sites in California (CDFG 1998). In the BLM Hollister Field Office area, bald eagles are found during the winter and are generally associated with open bodies of water, such as reservoirs.

Wintering habitat for bald eagles is varied but requires a food source close by, with proximity probably the most important factor influencing perch selection. Favored perch trees are invariably located near feeding areas, and individual eagles consistently use preferred branches (Stalmaster 1976). Winter surveys seem to indicate that bald eagles roost singly in larger trees that may be characteristic for open areas (Isaacs and Anthony 1983). There is no evidence of a communal bald eagle roost within the BLM Hollister Field Office area. Bald eagles winter along open bodies of water in the CCMA area, in particular the San Benito River and the Hernandez Reservoir near the CCMA. U S Geological Survey and California Department of Toxic Substance Control are currently measuring mercury levels in Clear Creek to characterize potential threat to bald eagles in the Hernandez Reservoir. These monitoring studies are ongoing and will be used in adaptive management of the CCMA. Vegetative communities within the CCMA that may serve as roosts or perches can be found in the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas.

**Sharp-shinned hawk – *Accipiter striatus***

The sharp-shinned hawk, a California Species of Special Concern, is the smallest accipitrid raptor species. It is approximately eleven inches long, with male birds just barely larger than an American robin. The sharp-shinned hawk formerly bred in small numbers throughout northern California and in even smaller numbers in southern California. At present the breeding population appears greatly reduced, but good data are lacking. Only a few individuals are reported during the summer months, and a small breeding population in Contra Costa and Alameda counties has apparently disappeared. Winter populations are larger and appear to be stable. Sharp-shinned hawks occupy forested and woodland habitats and occur within the CCMA San Benito Mountain serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas outside of the breeding season. BLM staff monitors this species annually and data are analyzed to guide management decisions.

**Golden eagle – *Aquila chrysaetos***

The golden eagle, is a BLM sensitive species, a California Species of Special Concern and a California fully protected species, was once a common permanent resident in open rangeland, but is now reduced to an estimated 500 nesting pairs in California. Natural population densities are very low, and its reproductive rate is very low as well. Golden eagles nest on rocky cliffs within the Pinnacles National Monument, approximately ten miles west of the CCMA. This large eagle species occurs regularly within the CCMA along Clear Creek and in other open areas. Potential golden eagle foraging and nesting habitat exist within and around the CCMA within the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine areas.

**Prairie falcon – *Falco mexicanus***

Prairie falcons, a California Species of Special Concern, and a BLM sensitive species, was once a common permanent resident throughout California, but has declined in recent decades. They inhabit dry, open country, grasslands, and woodlands. Potential Prairie falcon foraging and nesting habitat exist within and around the CCMA within the serpentine foot hill pine-chaparral woodlands, southern ultramafic Jeffery pine forest and non-serpentine vegetative communities. A small nesting population occurs within the rocky outcrops of the Pinnacles National Monument, about ten miles west of the CCMA. Prairie falcons have been sighted flying over the CCMA, however, no nesting of this species is known in the CCMA.

**Bell's sage sparrow – *Amphispiza belli ssp. belli***

Bell's sage sparrow, a California Species of Special Concern, tolerates a fairly broad range of shrublands, from coastal sage scrub to diverse types of dry chaparral on interior foothills. Nevertheless, sage sparrows are not distributed uniformly through tracts of seemingly suitable habitat. Within the CCMA, where Bell's sage sparrow breeds and nests, most sightings have been in dense chamise (*Adenostoma fasciculatum*) habitat, and not necessarily throughout the entire serpentine foot hill pine-chaparral woodlands vegetation type. The taxonomy of Bell's sage sparrow subspecies is uncertain at present, and genetic studies will determine whether populations of coastal California year-round resident populations, are distinct from migratory desert populations nesting in the Great Basin and Mojave deserts. If the two subspecies deserve status as full-species, systematic analysis will drive the degree of recognized endangerment for both populations (Fitton, pers comm., 2003).

## Mammals

### **Yuma myotis – *Myotis yumanensis***

The Yuma Myotis is a BLM sensitive species and a California species of special concern. This bat species forages primarily over water and above low vegetation in meadows, and roosts in crevices, caves, and buildings.

### **Long-eared myotis – *Myotis evotis***

The Long-eared Myotis is a BLM sensitive species. Long-eared myotis bats feed on insects captured in flight or gleaned from foliage among trees, over water, and over shrubs. Long-eared myotis habitats include forested areas over a range of elevations. The Long-eared Myotis roosts primarily in hollow trees, especially large snags, and prefer riparian edge habitat.

### **Fringed myotis – *Myotis thysanoides***

The Fringed Myotis is a BLM sensitive species. This species is found in mid to lower elevations in deciduous and mixed conifer forest habitats, where it feeds in open areas and over water by gleaning insects from foliage. Roosts include caves, buildings, and trees, especially large conifer snags.

### **Western small-footed myotis – *Myotis ciliolabrum***

The Small-footed Myotis is a BLM sensitive species. This bat species forages in wooded and brushy habitats near water, and roosts in mines, caves, and trees.

### **Townsend's western big-eared bat – *Plecotus townsendii townsendii***

Townsend's western big-eared bat is a BLM sensitive species and a California species of special concern. This colonial bat roosts primarily in caves, mine tunnels and buildings. This bat species requires caves, mines, or buildings for roosting, and forages for insects on brush and trees in moist areas. Habitats include oak, pine and chaparral woodlands.

### **Pallid bat – *Antrozous pallidus***

The Pallid bat is a BLM sensitive species and a California species of special concern. Pallid bats prefer forested habitats over a wide range of elevations. This colonial bat roosts in caves, mine tunnels, crevices in rocks and trees.

### **Western mastiff-bat – *Eumops perotis californicus***

The Western mastiff bat is a BLM sensitive species and a California species of special concern. Mastiff bats are found in a wide variety of habitats to over 10,000 feet in elevation. They roost primarily in crevices on cliff faces, and forage primarily over meadows and other open areas, but will also feed over forest canopy.

### **Big-eared kangaroo rat - *Dipodomys elephantinus***

The big-eared kangaroo rat is a California species of special concern. This kangaroo rat reaches body length of about five inches with a tail seven to eight inches long. Its distribution is restricted to chaparral from the Del Puerto Canyon area of Stanislaus County to the Gabilan and Diablo Mountains

in southern San Benito County (Williams 1986). Collections for museum specimens of this species come from the area near the peak of San Benito Mountain (1936) and near Sawmill Creek (1944). In 1980, Williams (pers. comm. 1994) trapped individuals of this species near the Jade Mill near the northern edge of the CCMA serpentine block. Because serpentine foot hill pine-chaparral woodlands is common in the CCMA and this is the preferred habitat of the big-eared kangaroo rat, threats to the species population in the CCMA may be negligible in the CCMA. However, wide trails, which are common in the CCMA, may act as barriers that this species has trouble crossing (Best, pers. comm., 1994). In addition, this kangaroo rat has never been observed in large numbers (Best, pers. comm., 1994). Given the discrepancy from this scant information, more studies would clarify this species' status in the CCMA.

## APPENDIX G AIR QUALITY

Although motor vehicle use within the Clear Creek Management Area contributes gaseous air pollutants from engine exhaust (including carbon monoxide, oxides of nitrogen, and fine particulate matter), by far the most significant air pollutant emissions would be fugitive particulate matter from unpaved road surfaces.

An analysis of potential particulate matter emissions by Alternative was prepared for the Clear Creek Management Area EIS (Archer 2004), using U.S. Environmental Protection Agency (2003) emission factors, assumed soil (NWS 2003) and precipitation (WRCC 2003) conditions, as well as motor vehicle types, properties and vehicle miles traveled.

Table G-1 indicates the assumed seasonal and total distribution of vehicle miles traveled for All Terrain Vehicles (ATV), Sport Utility Vehicles (SUV), and motorcycles (MC). Table G-2 summarizes the total annual particulate matter emissions (PM-2.5 fine particulate matter; PM-10 inhalable particulate matter; and TSP Total Suspended Particulates) by Alternative. It should be noted that although Alternatives A, B and C represent smaller total road miles than Alternative D (No Action), this analysis assumed the total vehicle miles traveled would not change among alternatives; existing use would simply be redistributed among each Alternatives assumed roads. Given these assumptions, total particulate matter emissions are predicted to increase slightly (about four per cent) above existing conditions (Alternative D – No Action).

**Table G-1. Assumed Vehicle Miles Traveled by Vehicle Type**

Vehicle Type	Total VMT	Summer VMT	Winter VMT
ATV	111,180	43,360	67,820
SUV	96,511	37,639	58,872
MC	864,738	337,248	52,7490

**Table G-2. Calculated Particulate Matter Emissions by Alternative (tons/year)**

Pollutant Type	Alternative			
	A	B	C	D
PM-2.5	28	28	28	27
PM-10	190	188	189	183
TSP	489	483	486	471

References

Archer, S.F. 2004. Microsoft Excel<sup>®</sup> Spreadsheet Estimate of Total Particulate Matter Emissions by Alternative - Clear Creek Management Area EIS. BLM-National Science and Technology Center. Denver, CO.

EPA. 2003. Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: *Stationary Point and Area Sources*; Chapter 13, Miscellaneous Sources; 13.2.2 Unpaved Roads. December, 2003. Research Triangle Park, NC.

Available online at: <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0202.pdf>

National Weather Service (NWS). 2003. Monthly Soil Moisture Climatology - Soil Wetness: Calculated Soil Wetness Climatology (1971-2000) Maps. Climate Prediction Center. Camp Springs, MD.

Available online at: [http://www.cpc.ncep.noaa.gov/soilmst/wclim\\_wetness\\_frame.html](http://www.cpc.ncep.noaa.gov/soilmst/wclim_wetness_frame.html)

Western Regional Climate Center (WRCC). 2003. Historical Climate Information: Priest Valley, California (047150); 1948 to 2003. Reno, NV.

Available online at: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caprie+sca>

## APPENDIX H WATER QUALITY DATA

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994**

MONTH	WATER DISCHARGE  CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE  TONS	BEDLOAD DISCHARGE  TONS	TOTAL SEDIMENT DISCHARGE  TONS
OCTOBER 1993	32.97	0.00	0	0
NOVEMBER . . . .	31.56	0.69	0	1
DECEMBER . . . .	38.90	11.83	0	12
JANUARY 1994	38.88	17.27	0	17
FEBRUARY . . . .	80.30	71.95	1	73
MARCH . . . . .	55.40	1.36	0	1
APRIL . . . . .	40.40	0.40	0	0
MAY . . . . .	34.56	0.50	0	0
JUNE . . . . .	18.71	0.00	0	0
JULY . . . . .	8.39	0.00	0	0
AUGUST . . . . .	3.11	0.00	0	0
SEPTEMBER . . .	3.26	0.00	0	0
TOTAL . . . . .	386.44	104.00	1	105

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1994	6.98	0.00	0	0
NOVEMBER . . . .	10.92	0.04	0	0
DECEMBER . . . .	13.26	0.00	0	0
JANUARY 1995	761.21	2034.63	4008	6043
FEBRUARY . . . .	279.00	26.20	137	163
MARCH . . . . .	1530.10	3728.89	40342	44071
APRIL . . . . .	596.00	50.96	84	135
MAY . . . . .	332.80	1.62	8	10
JUNE . . . . .	229.90	0.00	0	0
JULY . . . . .	127.00	0.00	0	0
AUGUST . . . . .	70.20	0.00	0	0
SEPTEMBER . . .	44.00	0.00	0	0
TOTAL . . . . .	4001.37	5842.34	44579	50422

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1995	39.20	0.00	0	0
NOVEMBER . . . .	37.70	0.37	0	0
DECEMBER . . . .	56.70	53.82	1	55
JANUARY 1996	65.80	115.76	7	122
FEBRUARY . . . .	271.80	595.29	70	665
MARCH . . . . .	346.60	468.08	83	551
APRIL . . . . .	161.10	1.97	5	7
MAY . . . . .	111.20	12.85	7	20
JUNE . . . . .	65.00	0.00	0	0
JULY . . . . .	43.80	0.00	0	0
AUGUST . . . . .	31.46	0.00	0	0
SEPTEMBER . . .	35.25	0.00	0	0
TOTAL . . . . .	1265.61	1248.14	174	1422

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1996	41.69	0.00	0	0
NOVEMBER . . . .	39.28	42.47	2	44
DECEMBER . . . .	183.00	249.13	74	323
JANUARY 1997	441.70	70.65	301	371
FEBRUARY . . . .	337.40	19.52	69	88
MARCH . . . . .	211.40	2.00	10	12
APRIL . . . . .	142.50	0.39	2	2
MAY . . . . .	106.40	0.00	0	0
JUNE . . . . .	65.00	0.00	0	0
JULY . . . . .	42.60	0.00	0	0
AUGUST . . . . .	28.04	0.00	0	0
SEPTEMBER . . .	23.21	0.00	0	0
TOTAL . . . . .	1662.22	384.16	456	841

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1997	23.63	0.00	0	0
NOVEMBER . . . .	43.52	48.89	2	51
DECEMBER . . . .	104.00	266.23	20	286
JANUARY 1998	146.50	47.66	15	63
FEBRUARY . . . .	1306.80	4373.45	4270	8643
MARCH . . . . .	852.00	397.60	239	637
APRIL . . . . .	627.00	195.70	71	267
MAY . . . . .	669.00	219.80	87	307
JUNE . . . . .	436.20	0.00	0	0
JULY . . . . .	211.90	0.00	0	0
AUGUST . . . . .	119.80	0.00	0	0
SEPTEMBER . . .	87.30	0.00	0	0
TOTAL . . . . .	4627.65	5549.33	4703	10252

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1998	73.10	0.00	0	0
NOVEMBER . . . .	48.18	7.68	0	8
DECEMBER . . . .	38.99	0.40	0	0
JANUARY 1999	45.82	0.35	0	0
FEBRUARY . . . .	97.10	33.28	1	34
MARCH . . . . .	116.20	20.97	0	21
APRIL . . . . .	189.10	56.78	1	58
MAY . . . . .	127.30	6.24	0	6
JUNE . . . . .	86.70	0.00	0	0
JULY . . . . .	41.81	0.00	0	0
AUGUST . . . . .	23.40	0.00	0	0
SEPTEMBER . . .	16.47	0.00	0	0
TOTAL . . . . .	904.17	125.70	2	128

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 1999	11.02	0.00	0	0
NOVEMBER . . . .	16.46	0.00	0	0
DECEMBER . . . .	19.68	0.00	0	0
JANUARY 2000	96.90	61.33	12	73
FEBRUARY . . . .	324.50	214.62	80	295
MARCH . . . . .	269.70	53.66	6	60
APRIL . . . . .	151.80	15.72	5	21
MAY . . . . .	95.20	0.15	0	0
JUNE . . . . .	63.00	0.00	0	0
JULY . . . . .	34.98	0.00	0	0
AUGUST . . . . .	23.16	0.00	0	0
SEPTEMBER . . .	16.01	0.00	0	0
TOTAL . . . . .	1122.41	345.48	103	448

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 2000	23.07	0.00	0	0
NOVEMBER . . . .	18.38	0.01	0	0
DECEMBER . . . .	18.65	0.00	0	0
JANUARY 2001	73.88	46.38	0	47
FEBRUARY . . . .	136.20	52.60	12	65
MARCH . . . . .	372.50	103.22	228	332
APRIL . . . . .	156.00	2.21	4	7
MAY . . . . .	86.90	0.01	0	0
JUNE . . . . .	55.40	0.00	0	0
JULY . . . . .	32.20	0.00	0	0
AUGUST . . . . .	23.08	0.00	0	0
SEPTEMBER . . .	20.69	0.00	0	0
TOTAL . . . . .	1016.95	204.43	246	450

**SUMMARY OF WATER AND SEDIMENT DISCHARGE, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002**

MONTH	WATER DISCHARGE CFS-DAYS	SUSPENDED SEDIMENT DISCHARGE TONS	BEDLOAD DISCHARGE TONS	TOTAL SEDIMENT DISCHARGE TONS
OCTOBER 2001	15.40	0.00	0	0
NOVEMBER . . . .	48.79	9.94	13	23
DECEMBER . . . .	99.30	164.65	11	175
JANUARY 2002	99.30	121.02	4	125
FEBRUARY . . . .	56.60	25.09	1	26
MARCH . . . . .	44.30	1.59	0	2
APRIL . . . . .	36.70	1.43	0	1
MAY . . . . .	26.46	0.04	0	0
JUNE . . . . .	11.00	0.00	0	0
JULY . . . . .	1.97	0.00	0	0
AUGUST . . . . .	0.65	0.00	0	0
SEPTEMBER . . .	0.77	0.00	0	0
TOTAL . . . . .	441.24	323.76	29	352

DISTRICT CODE 06

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY  
 11154700 -- CLEAR C NR IDRIA CA

PROCESS DATE 4-02-04

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Barium, water, filtered, ug/L	Cobalt water, filtered, ug/L	Iron, water, filtered, ug/L	Lithium water, filtered, ug/L	Manganese, water, filtered, ug/L	Mercury water, filtered, ug/L	Mercury water, unfiltered recoverable, ug/L	Molybdenum, water, filtered, ug/L	Nickel, water filtered, ug/L	Selenium, water, filtered, ug/L	Mercury bed sed <62.5um dry svd lab, total, ug/g
	(01005)	(01035)	(01046)	(01130)	(01056)	(71890)	(71900)	(01060)	(01065)	(01145)	(34912)
January											
29	61.5	<8	<10	18	<1.6	E.02	E.02	<30	E2.4	<3	.34
March											
15	33.3	<8	<10	10	2.7	E.01	2.75	<30	4.4	<3	.33
April											
9	67.6	<8	<10	17	1.8	.02	E.02	<30	2.6	<3	.29
May											
22	75.2	<8	<10	19	<1.6	.14	.03	<30	2.0	<3	.32

Remark codes used in this report:

- < -- Less than
- E -- Estimated value

DISTRICT CODE 06

PROCESS DATE 4-02-04

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY  
 11154700 -- CLEAR C NR IDRIA CA

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD,  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Instantaneous discharge, cfs	Temperature, water deg C	Bedload sediment discharge average unit composite, t/d/ft	Bedload sediment discharge, tons/day
	(00061)	(00010)	(04122)	(80225)
March				
7	2.4	15.0	.20	1.9
7	2.4	15.0	.21	1.9
15	16.0	15.5	.48	4.4
15	16.0	15.5	.26	4.4
April				
09	2.2	21.5	.55	2.2
09	2.1	21.5	.44	2.2

**APPENDIX I  
 ENVIRONMENTAL CONSEQUENCES FOR EACH ALTERNATIVE**

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.2 Air Quality	A 48% reduction of open routes and trails (215 miles), 84% reduction of open barren play areas (466 acres) would reduce emissions improving air quality conditions. All barren play areas within the San Joaquin Valley Air Basin portion of the CCMA will be closed.	Same improvement of air quality conditions as Alternative A except for the designation of 239 miles of unpaved open roads and trails and 813 acres of open barren play areas. This alternative would designate 40 acres of open barrens in the San Joaquin Valley Air Basin resulting in a slight increase in particulate matter emissions.	Same improvement of air quality conditions as alternative A except for the designation of 199 open miles of unpaved roads and trails and 466 acres of open barren play areas. Additional reductions in particulate matter emissions would result from vehicle restrictions during the dry season from June 1 - Sept. 1.	OHV use would continue to occur on 420 miles of unpaved open roads and trails and on 2,876 acres of open barren play areas. Direct impacts to the air quality and human health would result from unrestricted vehicle use, resulting in no change in current air quality conditions.
4.3 Human Health	Under this alternative, 2,410 acres of barrens would be closed resulting in the contribution to overall reduction in asbestos dust generation.	Same improvement of human health conditions as Alternative A except for the designation of 347 additional acres of open barren play areas resulting in a moderate increase in airborne asbestos emissions from surface disturbance.	Same improvement of human health as alternative A except for additional reductions in particulate matter emissions would result from vehicle restrictions during the dry season from June 1 - Sept. 1.	Direct impacts to human health would result primarily from unrestricted vehicle use in the area and associated asbestos emissions, and resulting in no change in current human health conditions or reduction in asbestos emissions and exposure.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
<p>4.4 Watershed Resources, 4.4.1 Water Quality</p>	<p>Under this alternative, the number of miles of available routes in the Larious and San Carlos watershed where the highest levels of background concentrations of hazardous metals are present would be reduced to 218 miles of unpaved roads and trails and 466 acres of barren play areas. Of the existing conditions, 5.04 miles of routes within riparian areas would be reduced by 59% while a 53% reduction of stream crossings to 152 would be available for use. The Aurora Mine site area would be completely closed between the Aurora grade and SBMRNA. Human exposure and contaminated sediment delivery would be reduced.</p>	<p>This alternative would allow for 245 miles of unpaved roads and trails and 813 acres of barren play areas. Environmental impacts would be as described for Alternative A, except for the number of miles of unpaved roads would be reduced by 38%, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos. The additional 347 acres of barren play areas under this alternative results in an average increase of 1,735 tons per year of sediment yield to CCMA watersheds. This alternative would allow a greater number of miles of routes available in the San Carlos watershed where the highest levels of background concentrations of hazardous metals are present, and also additional mileage in the Cantua watershed.</p>	<p>This alternative would allow OHV use on 199 miles of unpaved roads and trails and 466 acres of barren play areas. OHV use would be limited to the Clear Creek watershed. Environmental impacts would be the same as Alternative A except for reducing the number of miles of unpaved roads by 49%, and reducing soil disturbing activities at remaining mine sites, would contribute to reducing off-site transport of metals and asbestos. A 60% reduction of miles of routes available within riparian areas would be 4.91 while the number of stream crossings would be reduced by 56% further restricting vehicle access in the San Carlos, Cantua, and Arroyo Leona watersheds.</p>	<p>Direct impacts to water quality would result primarily from unrestricted vehicle use on 398 miles of unpaved roads and trails and 2,800 acres of barren play areas in the area resulting in current water quality conditions or potential for reduction in off-site transport of hazardous contaminants. This alternative includes 12.2 miles of routes within riparian areas and 326 stream crossings. Routes accessing mine areas would not be closed. Access in these areas continue t9 provide the potential for human exposure and contaminated sediment delivery of hazardous metals to waterways.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.4.2 Soil Loss and Erosion	Under this alternative, a reduction in erosion and sediment yield to streams within the CCMA and planning area would occur. 218 miles of unpaved roads and trails and only the clear Creek watershed would have 466 acres of barren play areas. Over 150 miles of roads and trails would be closed and restored over a 5 year period. A portion of R008 would be closed. Camping would be limited to within 40 feet of the centerline of designated open routes. Wet season closures would also be imposed. The remaining watersheds would see a reduction of approximately 11,670 tons per year.	This alternative allows for the designation of 245 miles of unpaved roads and trails and 813 acres of open barren play areas resulting in an average increase of 1,735 tons per year of sediment yield to the Larios, Cantua, and San Benito watersheds. The erosion and sediment yield associated with roads, would contribute approximately 17,999 tons per year to watersheds within the CCMA. This is a reduction of 28% of existing conditions.	This alternative allows for 199 miles of unpaved roads and trails and 466 acres of barren play areas. Further vehicle restrictions in the San Carlos, Cantua, and Arroyo Leona watersheds resulting in reduced sediment yields to those watersheds. The erosion and sediment yield associated with roads would contribute approximately 15,723 tons per year. Overall roads and barren play areas would contribute approximately 18,053 tons of sediment per year to streams within the CCMA.	This alternative would allow OHV use to occur on 398 miles of unpaved roads and trails and 2,800 acres of barren play areas. Direct impacts to soil loss and sediment delivery would result primarily from unrestricted vehicle use in the area, resulting in no change in current sediment yield conditions. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds. The 398-mile route network would contribute 24,969 tons of sediment affecting CCMA watershed resources. High erosion sub-watersheds would continue to contribute to resource impacts, particularly in the Clear Creek and Larios watersheds.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
<p>4.5 Biological Resources                      4.5.1 Vegetation Communities</p>	<p>This alternative will enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA. Soil disturbing activities would be reduced by the number of miles of unpaved roads by 45% and reduce the acres of barren play areas by 83%. Over 150 miles of roads and trails would be closed and restored under this alternative over a 5 year period. A portion of R008 could be closed to reduce impacts to sediment to the sub-watershed, riparian areas, and sensitive habitat. There is a 39% reduction of routes in proximity to CABE polygons. There is an 80% reduction in single track trails affecting these polygons. There is a 46% reduction of routes in rayless layia polygons. There is an 82% reduction of single track trails affecting these polygons.</p>	<p>This alternative reduces the number of miles of unpaved roads by 38% and reduces the acres of barren play areas by 71 percent. This alternative includes 5.29 miles of routes within riparian areas, which is a 57% reduction from existing conditions. There is a 39% reduction of routes in proximity to CABE polygons. There is an 80% reduction of single tract Trails affecting these habitat polygons. There is a reduction of 45% of routes in rayless layia polygon. There is an 82% reduction of single track trails affecting these polygons. An overall reduction of 43% of routes in both of these polygons.</p>	<p>This alternative reduces the number of miles of unpaved roads by 83%. There is a substantial increase in acreage for the SBMRNA, including a larger portion of the San Carlos Bolsa watershed. Most OHV use would be eliminated in the Condon Peak area, and all motorized vehicle use would be eliminated outside the serpentine ACEC in the Cantua and Arroyo Leona watershed. There is a 56% reduction of the number of stream crossings. There is a 39% reduction of miles of routes in proximity to CABE polygons. There is an 80% reduction of single track trails affecting these polygons. There is a reduction of 49% of miles of routes in proximity to rayless layia habitat. An overall reduction of 45% of routes in the CABE and rayless layia polygons.</p>	<p>Existing conditions would continue and route and barren designations would not be completed. There would be approx. 398 miles of open routes and trails and 2,800 acres of open play barrens. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds continuing to impact vegetation resources and sensitive species habitat. Restoration of closed routes and areas would not be accomplished to reduce erosion and sediment yields to background levels. There are 6.29 miles of routes in proximity to potential CABE polygons including 1.79 miles of single track trails affecting this habitat. There are 10.49 miles of routes in proximity to potential rayless layia habitat including 4.84 miles of single track trails affecting this habitat. The SBMRNA would be expanded in the CCMA FEIS (1995) and similar to the expansion in Alternative B.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
Serpentine Barrens	<p>This alternative would administratively close 2,300 acres, allowing an opportunity for potential restoration and biotic and abiotic monitoring. 466 acres of serpentine barrens limited to the Clear Creek watershed would be designated open. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed reducing sediment yield of 1,750 tons per year. Barrens within the Clear Creek watershed would contribute 2330 tons per year of sediment yield. All barrens within 1/4 mile of Clear Creek would remain closed. The remaining watersheds would see a sediment reduction of approximately 11,670 tons per year. The San Benito River, Sawmill Creek, and San Carlos Creek barrens would be closed and slated for restoration, substantially reducing impacts to resources.</p>	<p>This alternative would allow open OHV use on 831 acres of serpentine barrens. The additional 347 acres of barren play areas results in an increase of 1,735 tons per year of sediment yield to the Larios, Cantua, Sawmill Creek, and San Benito watersheds. The erosion associated with barren play areas would contribute approximately 4,065 tons of sediments per year affecting four CCMA watersheds. The majority of barrens in the Larios Canyon watershed would be closed and slated for restoration. There would be 347 less acres available for restoration. Designation of "The Bowl", a serpentine barren - Jeffrey pine habitat mosaic, for OHV use, would increase Jeffrey pine root exposure, seedling and sapling damage, as well as soil compaction and soil loss that would inhibit germination. The Bowl is contiguous to the SBMRNA and would therefore diminish the integrity of the RNA.</p>	<p>The acreage and location of serpentine barren designation in Alternative C is the same as Alternative A.</p>	<p>The 2,800 acres of barrens within the CCMA would continue to contribute 14,000 tons of sediment annually to all watersheds in the CCMA, and contribute to loss of habitat for several sensitive plant species and impacts to riparian areas. Serpentine barrens would continue to degrade under intensive vehicle use, and continue loss of the biologic crust, slow the rate of soil formation, increase erosion and sedimentation, and decrease plant cover and soil productivity. Controlling off-route and cross country OHV travel from this large barren network would continue to be problematic.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
Serpentine Foothill Pine-Chaparral Woodland	Under this alternative, 2.45 miles of designated routes and trails would be designated as open in the serpentine foothill pine-chaparral woodland, which is a 26% reduction from existing conditions.	Same as Alternative A.	Under this alternative there would be no OHV use designated in the Foothill Pine-Chaparral Woodland providing the greatest protection and benefit for this community.	There are 3.1 miles of routes within this community. Impacts from vehicle disturbance, soil erosion, route proliferation and cross country OHV use would continue to affect this vegetation community.
Southern Ultramafic Jeffrey Pine Forest	The San Benito Mountain Research Natural Area (SBMRNA) would be expanded to 3,991 acres to include most of the upper Clear Creek, most of the San Carlos Creek and Sawmill Creek watersheds beyond the northern and eastern perimeters of the existing SBMRNA. Open use within the forested ecosystem would be prohibited which would assist in forest regeneration and sensitive plant and animal protection. There would be a substantial reduction in motorized access in this community with the only routes authorized for OHV access being R011 (Spanish Lake Road), T158 (Sawmill Creek Road), and R013, reducing disturbance to this forest community. Overall there would be a 42% reduction of routes within this vegetation community.	This alternative would protect Southern Ultramafic Jeffrey Pine forest by increasing the total acreage within the SBMRNA by 3,522 acres. This is from 439 to 1058 less acres than the other alternatives. No additional acreage would be added in the Sawmill Creek watershed, and only a very small amount of acreage would be added in the San Carlos Creek watershed. There would be a slight reduction in motorized access in this community with T155. The Ridge Route (R010) would remain open. Overall there would be a 39% reduction of routes within this vegetation community.	General impacts would be similar as Alternative A, however, the SBMRNA would be expanded to 4,580 acres to increase protection of the unique Southern Ultramafic Jeffrey Pine Forest. The SBMRNA would be protected from future mineral exploration and include the largest portion of whole sub-watersheds, instead of only portions of them.	Within the SBMRNA the Southern Ultramafic Jeffrey Pine Forest would gain slight protection by increasing the total acreage of the RNA to 3,580 acres. Outside the RNA this vegetation community would continue to suffer impacts from vehicle disturbance, soil erosion, route proliferation and cross country OHV use.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
Serpentine Riparian Vegetation	<p>This alternative would designate 6.5 miles of open trails in, through, or along riparian ecosystems; and 152 stream crossings under this alternative represent a 53% reduction from the existing route inventory. This reduction should result in substantial reductions in sediment delivery and associated impacts to riparian and sensitive species habitat. There would be a significant reduction of routes affecting this vegetation community in the Larios watershed, and in particular closure of all routes in the upper east form of Larios Creek affecting rayless layia within this riparian community. There would be a reduction of approximately 350 acres of barrens for OHV use within the Clear Creek watershed.</p>	<p>Overall the implementation of Alternative B would reduce the number of miles along riparian corridors in the CCMA from approximately 13.5 miles to 7.0 miles of routes and trails and 159 stream crossings representing a 51% reduction from the existing route inventory. 813 acres of serpentine barrens would be designated as open and exceed the other alternatives by 347 acres. The use of roads would continue to cause approximately 1735 tons per year of sediments to the Larios, Cantua, Sawmill Creek, and San Benito watersheds combined. The erosion of barren play areas would contribute 4,065 tons of sediment per year which is a 43% increase over the other alternatives. The CCMA watersheds would see a sediment reduction of 9,935 tons per year..</p>	<p>This alternative would designate 4.95 miles of routes within riparian areas which a 60% reduction from existing conditions. Miles of routes would be 6.5 within this community with 144 stream crossings representing a 56% reduction from the existing route inventory.</p>	<p>Direct impacts to soil loss and sediment delivery would result primarily from unrestricted vehicle use in the area. Approximately 38,969 tons of sediment would be delivered to CCMA watersheds. This alternative includes 12.4 miles of routes within riparian areas and 326 stream crossings. The 2,800 acres of barrens would contribute 14,000 tons of sediment to the CCMA annually. Hillside slippage into riparian areas, unstable slopes causing the diversion of stream flow into the bottom of other slopes would continue to contribute thousands of cubic yards of sediments into CCMA creek channels causing physical damage to creek banks and loss of riparian vegetation. Use of roads would continue to cause approx. 77 tons/acre per year of sediments into creeks during heavy rainfall events.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
Serpentine Vernal Pools	Same as Alternative D since the current management situation prohibits all OHV use within the vernal pools. All known vernal pools within the CCMA are currently protected by fencing and pipe barriers to prevent disturbance by OHV recreation activities.	Same as Alternative A.	Same as Alternative A.	Vernal pools would continue to be protected under all alternatives.
Serpentine Chaparral	Under this alternative, 142 miles of routes would be designated within the serpentine chaparral. This is a reduction of 45% in this vegetation community.	There are 5 to 10 additional miles of open routes and trails in the serpentine chaparral vegetation community compared to the other alternatives. The 43% reduction of miles of routes in this vegetation community would have long-term benefits within the serpentine chaparral compared to the existing condition.	There would be 137 miles of routes and trails available for OHV use in the serpentine chaparral vegetation, a 2% difference from other alternatives. This is a 46% reduction of miles of routes in this vegetation.	There are 256 miles of routes and trails in the serpentine chaparral vegetation community. Route proliferation and cross country OHV use would continue to degrade this vegetation community over time.
Non-Serpentine Vegetation Communities	Under this alternative, 18 miles of routes and trails identified outside of the serpentine ACEC would be designated for OHV use. This is a 67% reduction in available routes. These routes are primarily in the Condon Peak area and a small area on the east side of the CCMA in the Cantua Creek watershed.	Under this alternative, there would be approximately 30 miles of designated routes and trails in non-serpentine vegetation types. This is a 44% reduction in the miles of routes compared to existing conditions. These routes are primarily in the Condon Peak area and a small area on the east side of the Arroyo Leona watershed..	This alternative would designate 11 miles of routes and trails for OHV use. This is an 80% reduction in the miles of routes compared to existing conditions. Most OHV use would be eliminated in the Condon Peak area, and all motorized vehicle use would be eliminated outside the serpentine ACEC in the Cantua and Arroyo Leona watershed.	54 miles of routes and trails would be designated for OHV use on non-serpentine vegetation types. This would continue to impact vegetation resources in the following areas: Condon Peak, White Creek, Arroyo Leona, Cantua Creek, Los Gatos, San Carlos Bolsa, and Larious Creek.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
<p>San Benito Evening Primrose (<i>Camissonia benitensis</i>)</p>	<p>Under all alternatives the current status of the 42 known San Benito evening primrose populations on public lands in the CCMA would be maintained or enhanced due to fence protection, habitat improvement, and public education. Greater protection of the San Benito evening primrose potential and occupied habitat would occur under the proposed alternative because of limited route, trail and barren designation. Roads and areas that impact this species would be rerouted or closed. Large portions of the existing Clear Creek Road, Sawmill Creek Road, and San Carlos Creek Road would be managed for restoring the primrose suitable habitat. Planned actions include: (1) the protection of San Benito evening primrose at 33 medium- and high-priority terrace sites; (2) the closure of nearly 2,000 acres of OHV open use areas to facilitate the protection of primrose terrace and streamside habitat and populations at the base of these closed "play areas"; and (3) the expansion of the SBMRNA would increase the number of primrose populations and acreage of habitat protected from OHV use within the SBMRNA;</p>	<p>Same as Alternative A. Expansion of the SBMRNA to 3,522 acres would be 475 acres less than the acreage designated under Alternative A. R010 would be designated as limited.</p>	<p>Same as Alternative A except the expansion of the SBMRNA to 4,082 acres compared to 3,991 acres.</p>	<p>As a result, degradation and loss of suitable habitat for the San Benito evening primrose would continue. Consultation with the USFWS would be requested which would likely result in a jeopardy opinion and possibly relisting as endangered. Overall loss of prime habitat and could result in this species extinction.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.5.6 Special Status Animal Species	<p>Alternative A, B, and C would enhance the long-term protection of the sensitive habitat and species that occur throughout the CCMA by reducing unregulated use, erosion, sediment yield, and impacts to watershed resources. The reduction of open routes and barrens, and the elimination of cross-country use will diminish habitat fragmentation, auditory disturbance, and the probability of being crushed by vehicles will be lessened through all action alternatives in upland and riparian wildlife habitats. The elimination of all barrens of low hydrographic position will reduce the sediment flow into watersheds within the CCMA increasing the protection and decreasing the negative impacts to the sensitive riparian areas and animal species. There would be a reduction of barrens for OHV use within the Clear Creek watershed. All barrens within 1/4 mile of Clear Creek would remain closed. Sediment yield from routes affecting riparian habitat would be reduced by an average of 9,000 tons per year.</p>	<p>Same as Alternative A except additional sedimentation in the CCMA riparian areas and terraces would occur due to the near doubled open barren acres compared to Alternatives A and C. Sediment yield from routes affecting riparian habitat would be reduced by an average of 7,000 tons per year. This alternative provides protection to species habitat while maximizing the extent of OHV recreation opportunities.</p>	<p>Same as Alternative A except for the SBMRNA will be expanded to the furthest extent providing a large contiguous expanse of species habitat within the CCMA that is closed to vehicle traffic.</p>	<p>Habitat for all animal species would continue to be impacted as a result of route proliferation and cross-country OHV use. Unregulated use and non-compliance would continue to have adverse impacts to sensitive species and their habitat in all communities within the CCMA. Increased sedimentation in the CCMA riparian areas and terraces would continue to occur.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.5.7 Invasive Weeds	The continued spread of invasive, non-native plants, specifically the yellow starthistle is common to all alternatives. Yellow starthistle seed is transported on the undercarriage of vehicles and colonization is occurring on both serpentine and non-serpentine soils. Rare plant and animal habitat is threatened and routes and trails outside of the serpentine ACEC are at greater risk of infestation.	Same as Alternative A.	Same as Alternative A.	This alternative offers the substantially larger route network and additional miles on sedimentary soils, along with continuing habitat disturbance would provide greater potential for weed introduction and invasion into areas previously unaffected.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
<p>4.6 Recreation Resources -            4.6.1 Motorized Vehicle Access Network</p>	<p>The trail network would consist of 139 trails comprising 218 miles of routes and trails comprising ranging from paved roads to single track trails. 111 miles of single track and ATV trails (51% of routes), and 60 miles of jeep trails (28% of routes.) Of the 218 miles would be open for public use. 9 miles would be limited to no motorcycle use. These routes are located on the southern end of the CCMA leading to Condon Peak. The remaining 209 miles would be open to all motorized vehicles. 28 miles would be for administrative use and closed to public use.</p>	<p>Same as Alternative A except the trail network would consist of 182 trails comprising 270 miles of routes ranging from paved roads to single track trails. Of the 270 miles of routes, 245 miles would be open for general public use. 129 miles of single track and ATV trails (53% of total routes), and 66 miles of jeep trails (27% of total routes), comprising 80% of the total routes available. 15 miles would be limited to no motorcycles. These routes are located primarily on the southern end of the CCMA in the Condon Peak area. The remaining 230 miles of routes would be open to all motorized vehicles.</p>	<p>Same as Alternative A except the trail network would consist of 129 trails comprising 203 miles of routes ranging from paved roads to single track trails. Of the 203 miles of routes, 5 miles would be limited to no motorcycles. The remaining 198 miles would be open for all motorized vehicles.</p>	<p>OHV use would continue to occur on 398 miles of routes ranging from paved roads to single track trails. The HFO has analyzed over 440 miles of routes throughout the CCMA. The majority of these additional routes are duplicative of routes and some are dead-end mining prospects or single track, highly eroded trails that would be difficult to traverse and extremely difficult to maintain. Unregulated use on the complete inventory of routes has conflicted with established management objectives, and contributed to non-compliant use, route proliferation, and trespass in closed areas that have reached levels which threaten closure of the CCMA. Though there would be a quantitative miles of routes benefit under this alternative, over time it is likely the quality of experience would diminish.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.6.2 Barrens	<p>This alternative provides 466 acres of open play areas for public use in a centralized area. There would be an 83% reduction in barrens available for recreation use from the complete barren inventory (2,800 acres). Many of the barrens in the inventory are already closed (RNA, mine areas) or are on private or state land. Barrens considered for open designation would be limited to those within the Clear Creek watershed. These areas would be mapped, easily recognizable and marked.</p>	<p>This alternative provides 813 acres of open play areas for public use. There would be a 71% reduction in barrens available for recreation use from the complete barren inventory (2,800 acres). There would be three general areas: Clear Creek Canyon, east fork of Larious Canyon, and the east central CCMA (Sawmill Creek and San Benito River watersheds). The "bowl" barren area adjacent to the SBMRNA would also be included in this alternative. Additional signing and fencing could diminish the recreation experience for some users seeking a more unregulated experience and wildland character of the area. to provide for less congestion in any one area.</p>	<p>Same as Alternative A.</p>	<p>This alternative would allow OHV use to occur on 2,800 acres of barren play areas dispersed throughout the CCMA. This includes barrens 10 acres in size and larger (barren areas smaller than 10 acres would remain closed.) These areas would be difficult to distinguish from the rest of the open areas. Users would find it difficult on the ground where the open area begins and ends. Impacts to resources beyond open barren areas would continue.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.6.3 Non-OHV Recreation Opportunities	<p>This alternative provides 139 trails comprising 218 miles of routes ranging from paved roads to single track trails. Non OHV activities would continue to occur in all alternatives. The majority of non OHV activities occur on foot (hunting, hobby gem &amp; mineral collecting, hiking, backpacking, wildflower viewing, hang gliding, and sightseeing) throughout the CCMA and destinations are reached using major routes which would remain open. Two routes would be closed in the Condon Peak area; however several miles of route would remain open to 4-2heeled vehicles to provide access for traditional hunting areas. The Condon Peak hiking trail would be closed to motor vehicles and provide an improved hiking experience. Passive recreation opportunities (hiking/backpacking, wildlife watching, and nature study) would be enhanced under this alternative with areas free of motorized disturbance and user conflicts.</p>	<p>This alternative provides 171 trails comprising 245 miles of routes ranging from paved roads to single track trails. Hunters would retain access to most current hunting areas. Passive recreation opportunities (hiking/backpacking, wildlife watching, and nature study) would benefit under this alternative with some areas free of motorized disturbance and user conflicts.</p>	<p>This alternative is the same as Alternative A except it provides 129 trails comprising 203 miles of routes ranging from paved roads to single track trails. This route network would provide access for a wide variety of non-motorized recreation users.</p>	<p>This alternative would allow 398 miles of trails. Lack of road maintenance and law enforcement compliance would continue and would limit the use by some members of 2-wheeled and 4-wheeled vehicles.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.7 Cultural Resources	Route and barren designation should not adversely affect any cultural resources. Incorporating the current database of known cultural (and paleontological) resources. Incorporating the strategies outlined in Appendices C and D will provide the tools and mechanisms for maintaining designated routes while affording cultural resource protection.	Under this alternative a high priority on motorized access to cultural resources would still be adequately protecting under the various mechanisms described in alternative A.	Under this alternative there would be a higher priority on environmental protection. The limitation of motorized access throughout the CCMA favors archaeological protection, as this alternative lessens the chances of impacts from OHV uses.	Under this alternative, the OHV characteristics of the CCMA would largely remain the same, at least for the short-term. In the long-term, the lack of a designated trail system may increase the chance for route proliferation, thus unintentionally increasing the risk that recreational users will damage archaeological sites that are currently off-route or adjacent to an existing route.

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
<p>4.8 Special Management Areas - 4.8.1 Serpentine Area of Critical Concern - 4.8.2 San Benito Mountain Research Natural Area (SBMRNA)</p>	<p>The boundary would be expanded by 3,991 acres to increase protection of the existing unique Southern Ultramafic Jeffrey Pine habitat. The added upland habitat would include most of the upper Clear Creek, San Carlos Creek, and Sawmill Creek watersheds. This transition zone also contains one of only two known populations of the Mt. Diablo phacelia within the CCMA. Open use or cross-country travel within the forested ecosystem would be prohibited. R010, T154, and T155 would be closed to OHV recreation. Three of the known San Benito evening primrose populations and thirteen acres of occupied primrose terrace habitat would be protected. Three additional miles of stream bank primrose habitat along upper Clear Creek would be protected.</p>	<p>This alternative would expand the SBMRNA to 3,522 acres and increase protection of the existing unique Southern Ultramafic Jeffrey Pine forest habitat. This is from 439 to 1,058 less acres than the other action alternatives. No additional acreage would be added in the Sawmill Creek watershed, and only a very small amount of acreage would be added in the San Carlos watershed. Open use within the forested ecosystem would be prohibited. One of only two known populations of the Mt. Diablo phacelia within the CCMA would be included in the RNA. OHV impacts to the "Bowl" would continue.</p>	<p>Same as Alternative A except the expansion of the SBMRNA to 4,580 acres compared to 3,991 acres. The added upland habitat would include most of the upper Clear Creek, Sawmill Creek watersheds, and the largest portion of the San Carlos watershed.</p>	<p>The SBMRNA would be expanded to approximately 3,580 acres, providing some protection to the unique Southern Ultramafic Jeffrey Pine Forest. The added habitat within the RNA would include most of the upper Clear Creek watershed. The Sawmill Creek and San Carlos Creek watersheds would not be fully protected. There would be no reduction in motorized routes in this community, with continued impacts to the ecosystem and diminishing the value of the RNA. The Ridge Route (R010) would remain open. Habitat would continue as well as reducing the integrity of the RNA from future mineral exploration.</p>

RESOURCES	ALTERNATIVE A Proposed Action	ALTERNATIVE B Enhanced Recreation	ALTERNATIVE C Enhanced Resource Protection	ALTERNATIVE D No Action
4.9 Socio-Economic	<p>This alternative would result in a decrease in the routes and areas available for OHV recreation and may result in a curtailment of OHV recreation related activities. This alternative would support current user levels and visitation with slight increases. This alternative would not likely support substantial increases in OHV recreation use over the long-term.</p>	<p>This alternative would result in a decrease in the routes and areas available for OHV recreation. There would be the potential for slightly increased user conflicts with non-motorized recreation activities, primarily within the RNA. An increased emphasis on providing additional recreation facilities could contribute to meeting growth in recreation demand for the area. The proposed route network provides for relatively undiminished camping opportunities throughout the planning area.</p>	<p>This alternative would result in a decrease in the routes and areas available for OHV recreation though it is not anticipated that this would result in a curtailment of OHV recreation related activities. This alternative would produce a reduction of user conflicts with non-motorized recreation activities, primarily within the RNA.</p>	<p>This alternative would allow OHV use to occur on the existing inventory of routes, including 398 miles of unpaved roads and trails and 2,800 acres of barren play areas. It is not anticipated that this would result in any significant increase in OHV recreation use, or corresponding increase in economic benefits to the region. This alternative would contribute to a greater degree to those values related to wildland experience and sense of exploration; increase the perception of conflict concerning resource use and the condition of public lands, and the ability to provide sufficient protection of natural resources and watershed values.</p>

## **APPENDIX J**

### **Clear Creek Management Area – Chronology**

**1942:** Transfer land from U.S. Forest Service to BLM

**1962:** Hernandez Reservoir built for flood control and ground water recharge

**1967-1979:** Asbestos mining continuing in the CCMA. BLM contracts for Cal Berkeley air monitoring data. Major recommendation was to include enact dry season restrictions through the planning process. (OSHA standards for asbestos fibers go from 2 fibers/cc in 1971 to 2 fibers/cc.

**circa 1969-1970:** Panoche Hills closed to OHV use and OHV use directed to Clear Creek

**1978:** Fresno MFP completed, with major decisions for Clear Creek, including:

a) Clear Creek Canyon to be managed for intensive recreational use, including development of primitive camping, and development of an administrative site, with use of OHVs to be restricted to designated areas, roads and trails to reduce sedimentation. Significant archeological sites and rare, threatened and endangered species to be fully protected but with methods that require least amount of closure;

b) Asbestos hazard to be studied;

c) Natural Area designation to be maintained, pending review for potential wilderness and OHV use to be prohibited in the Natural Area with exception of Ridge Road (R002) and the County Roads (Clear Creek Canyon, Natural Area and Sawmill Creek Roads)

d) Minimal camping facilities to be developed along Sawmill Creek and Spanish Lake, exploration for minerals to be encouraged around Santa Rita Peak area with emphasis on minimal environmental damage, and stands of conifers to be managed for commercial wood products.

**1979:** Atlas Mine owners declare bankruptcy. BLM develops handout for public safety awareness and installs asbestos warning signs. CERCLA (Superfund) becomes law.

- 1980:** Asbestos discovered in the California aqueduct. EPA and State agencies inspect the Atlas Mine.
- 1981:** San Benito County Water Flood Control goes on record stating that OHV use in the CCMA results in fish kill and acceleration of sedimentation of the holding ponds.
- 1982:** BLM closes Atlas to the public because of OHV use in the mining areas. BLM completes the initial OHV designations using the NEPA process.
- 1983:** Bureau of Reclamation and Central Valley Regional Water Quality Control Board collect water samples.
- 1982-1983:** Erosion study proposed and partially completed by Hollister Soil Scientist, John Key. Efforts were thwarted somewhat because it was a flood year, with an estimated 37-38 inches of rain fall. Three sites studied, with conclusions being that roads were the greatest contributor of erosion, and that OHV use should be restricted by use of barriers and signs. Installation of gauging station at mouth of Clear Creek was recommended.
- 1984:** EPA lists Atlas as a Superfund site. BLM completes Hollister RMP and creates the Serpentine ACEC within the Clear Creek Management Area because of the unique serpentine vegetation and because of the concern over human health risks from the asbestos-laden soils in the serpentine formation.
- 1985:** The San Benito evening primrose (*Camissonia benitensis*) was listed as a federally threatened species
- 1986:** Clear Creek Management Plan completed. Hollister FO receives their first green sticker grant for \$33,000. BLM constructs vehicle barriers and stream crossings. Park Rangers hired for public contact and resource protection. BLM begins scouting for contract to study for the San Benito evening primrose. OSHA revises asbestos exposure limit to .2 fibers/cc.
- 1987-1988:** EPA completes Superfund report. BLM continues to implement 1986 CCMA plan and begins air monitoring in the CCMA.
- 1988:** A new Bureau Administrative Site was built to increase field presence and management efficiency. Oak Flat Campground was constructed to direct people away from the asbestos.

- 1989:** BLM constructs fence, barriers, signing to redirect public access. Construction of Administrative Site begins. BLM prepares a first draft of the Employee Asbestos Health & Safety Plan. BLM presents Reasonable Reclamation Plan for Atlas to the EPA. BLM District Manager and Area Managers meet with State Director on options for continued OHV use in the CCMA. SD requests a NEPA document.
- 1990:** EPA completes a Regional Report of Mining Disturbances in the CCMA. Additional mines recommended for further action.
- 1991:** EPA issues ROD for Atlas Superfund Site, BLM continues implementing 1986 Plan, administrative site, ranger patrols and air monitoring. BLM sued as Potentially Responsible Party for the Atlas Mine Superfund Cleanup. BLM begins EIS for Clear Creek and contracts for erosion study and human health risk study for OHV use. April 30, 1991, FR issued for Notice of Intent (NOI) to prepare an EIS. Public Technical Review Team is formed.
- 1993:** Draft EIS is finalized and released, with public comment period opening on November 19, 1993 and closing on February 19, 1994. November 4, 1993, BLM staff Tim Moore, Jack Mills and Bob Beehler brief EPA in San Francisco. During November and December, BLM held three public meetings, in Hollister, Clovis and San Jose, respectively. EPA attends San Jose Meeting. EPA approves project design for Atlas re-vegetation. BLM meets with USFWS to discuss San Benito evening primrose recovery, USFWS comments.
- A full-time, permanent law enforcement officer is assigned to the Bureau's CCMA Administrative Site.
  - A watershed model was developed by PTI Environmental Services
- 1994:** February 19, comment period closes. BLM receives over 600 comment letters, about 2/3 of which are form letters. February - August, BLM reviews comments, re-analyzes impacts and completes revisions. March 9, 1994, BLM meets with EPA to discuss EPA's comments to the draft. Text is essentially complete by August of 1994. Final Map sent to the State Office for revision.
- BLM contracts and completes route inventory of 109 miles in the CCMA for erosion features. Field trip was held with OHV enthusiasts and environmentalists providing an opportunity to review potential play areas. Text of EIS in the SO, as BLM Hollister works with BLM SO to make map revisions. Spring, 1995, San Benito Mountain Natural Area "re-discovered" as an IA, necessitating an EA addressing IMP violations relating to road work in that area. BLM meets with USFWS to discuss plan and revisions.

**1995:** A road inventory conducted by Pacific Watershed Associates on 110 miles of most used routes with prescriptions to reduce road related erosion and sediment delivery.

- Initial recreation trail map completed in early summer.
- Formal Section 7 consultation package sent to USFWS

**1996:** March, EIS sent to the printer. Hollister BLM briefs State Parks in Sacramento on changes in EIS from draft to final. BLM Hollister holds TRT meeting, mid-March. EIS hits the streets in April. BLM sends copies of EIS to EPA in Washington D.C. EPA issues FR NOA on May 3, 1996. BLM holds multi-disciplinary, multi-user group and multi-agency field trip to the CCMA on May 10, 1996 to discuss the changes from the draft to the final, and address implementation issues. Three staffers from EPA were in attendance, several more were invited. BLM receives draft Opinion from USFWS. BLM meets with USFWS on May 8, USFWS says it will not issue Jeopardy if BLM prepares more detailed implementation strategy relative to protection and recovery of San Benito evening primrose and the vernal pool fairy shrimp.

- Protest period closes on June 3, 1996.
- A crew was hired to build protective fences that had been recommended for potential habitat polygons and riparian zones, 1996-1998. Fences were also built and maintained on occupied terraces.
- Compliance monitoring started on a monthly basis from October to May and bimonthly from June to September, allowing timely reporting of problems to fence crew and law enforcement officer to quickly change non-compliant use patterns. [The monitoring has documented a large reduction of non-compliant OHV use and intensity of disturbance as a result of protective measures. [Update](#)]
- All terraces identified by Taylor (1990) as potential CAGE habitat are being included in the more inclusive potential habitat polygons [(39 of 53 terraces have not yet been synonymized with the new nomenclature).]

**1997:** Consultation with U.S. Fish & Wildlife Service wherein a Biological Opinion on the 1996 CCMA Plan was issued.

**1999:** Record of Decision for the CCMA Management Plan and Final EIS signed by BLM State Director, Ed Hastey.

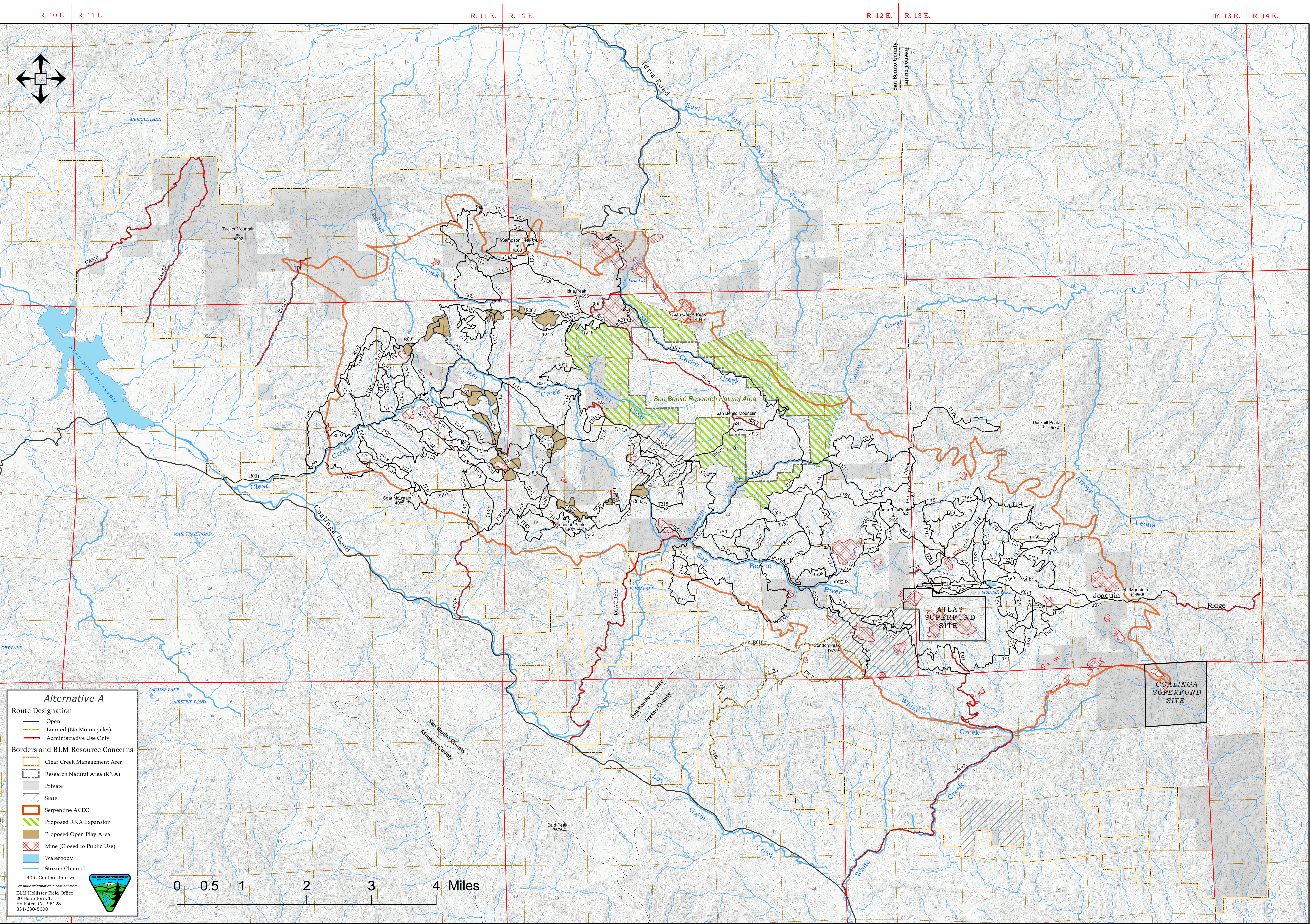
Designations:

- The San Benito Mountain Outstanding Natural Area is officially designated to the San Benito Mountain Research Natural Area
  - The boundaries of the Clear Creek Serpentine Area of Critical Environmental Concern (ACEC) officially expanded per Federal Register Notice of 1996, are re-affirmed.
  - The policy of managing the San Benito Mountain Wilderness Study Area per interim management guidelines until Congress makes a suitability determination is re-affirmed.
  - The decision to expand the RNA to as much as 4,082 acres is approved—final boundary designation to be determined coincident with the route/trail and barren designation
  - The CCMA OHV designation is changed to **Limited Use**.
- 2003:** April 29 Federal Register published notifying public of CCMA Route, Barren and San Benito Mountain RNA boundary Designation Environmental Assessment/Plan Amendment scoping.
- KCAC Mine closed





BLM Hollister Field Office  
Appendix J  
CCMA Plan Amendment and DEIS



**Alternative A**

**Route Designation**


- Open
- Limited (No Motorcycles)
- Administrative Use Only

**Borders and BLM Resource Concerns**

- Clear Creek Management Area
- Research Natural Area (RNA)
- Private
- State
- Serpentine ACEC
- Proposed RNA Expansion
- Proposed Open Play Area
- Mine (Closed to Public Use)
- Waterbody
- Stream Channel

40ft. Contour Interval

For more information please contact:  
 BLM Hollister Field Office  
 20 Hamilton Ct.  
 Hollister, Ca. 95123  
 831-630-5000




T. 17 S.  
T. 18 S.

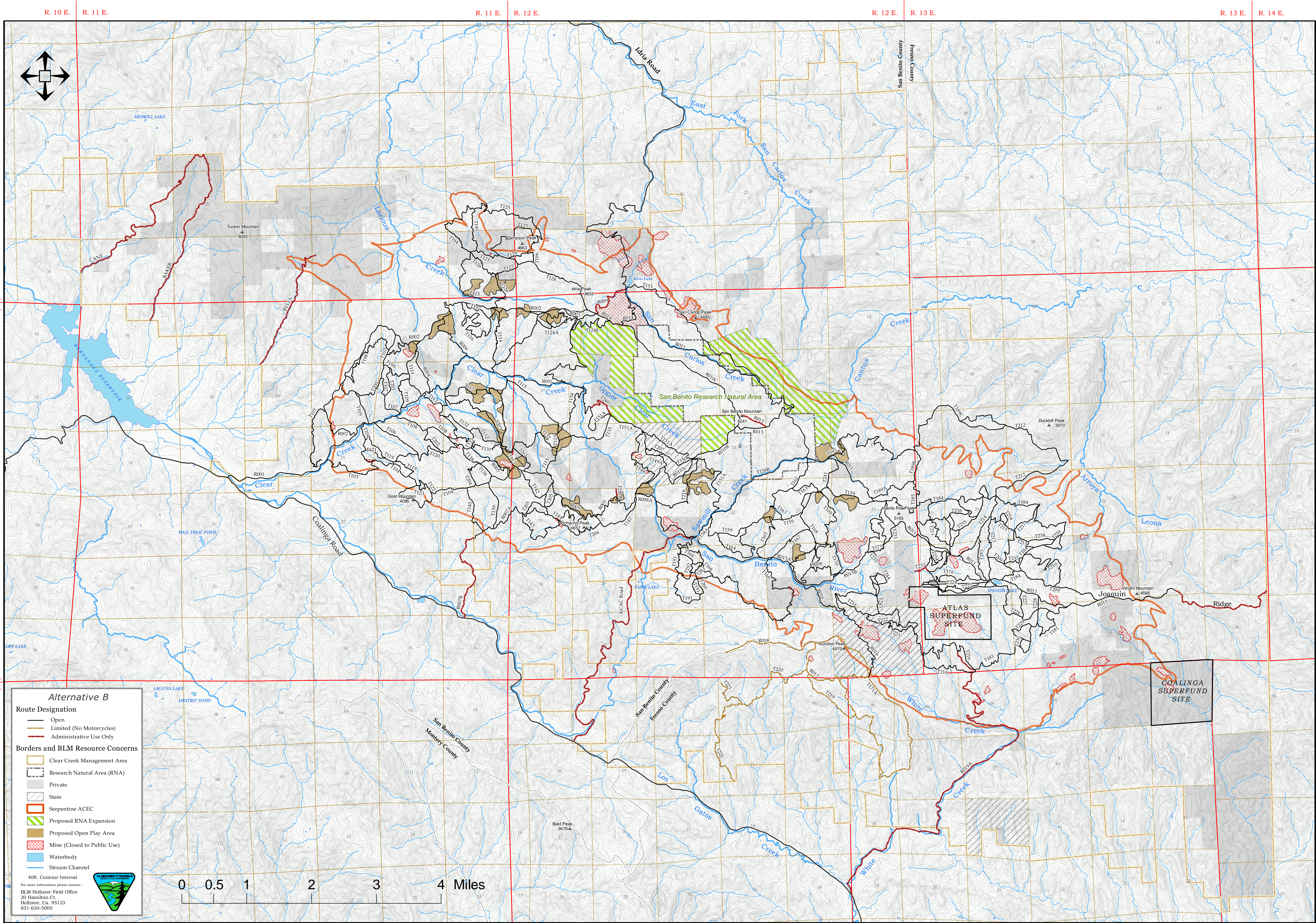
T. 17 S.  
T. 18 S.

T. 18 S.  
T. 19 S.

T. 18 S.  
T. 19 S.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.



**Alternative B**

**Route Designation**


- Open
- Limited (No Motorcycles)
- Administrative Use Only

**Borders and BLM Resource Concerns**

- Clear Creek Management Area
- Research Natural Area (RNA)
- Private
- State
- Serpentine ACEC
- Proposed RNA Expansion
- Proposed Open Play Area
- Mine (Closed to Public Use)
- Waterbody
- Stream Channel

40ft. Contour Interval

For more information please contact:  
 BLM Hollister Field Office  
 20 Hamilton Ct.  
 Hollister, Ca. 95123  
 831-630-5000




T. 17 S.  
T. 18 S.

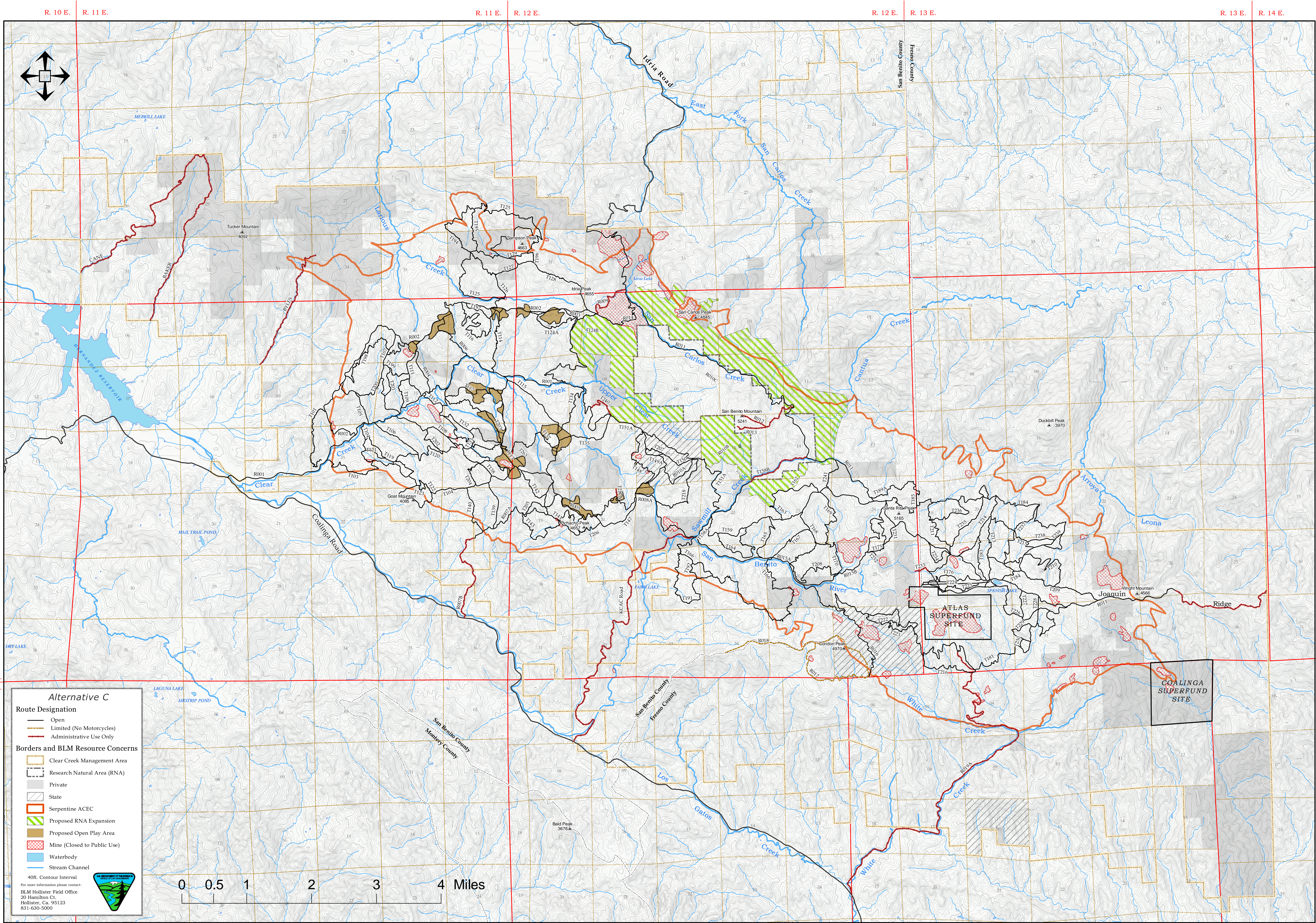
T. 17 S.  
T. 18 S.

T. 18 S.  
T. 19 S.

T. 18 S.  
T. 19 S.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.



**Alternative C**

**Route Designation**

- Open
- - - Limited (No Motorcycles)
- Administrative Use Only

**Borders and BLM Resource Concerns**

- Clear Creek Management Area
- Research Natural Area (RNA)
- Private
- State
- Serpentine ACEC
- Proposed RNA Expansion
- Proposed Open Play Area
- Mine (Closed to Public Use)
- Waterbody
- Stream Channel

40ft. Contour Interval  
 For more information please contact:  
 BLM Hollister Field Office  
 20 Hamilton Ct.  
 Hollister, Ca. 95123  
 831-630-5000



T. 17 S.  
T. 18 S.

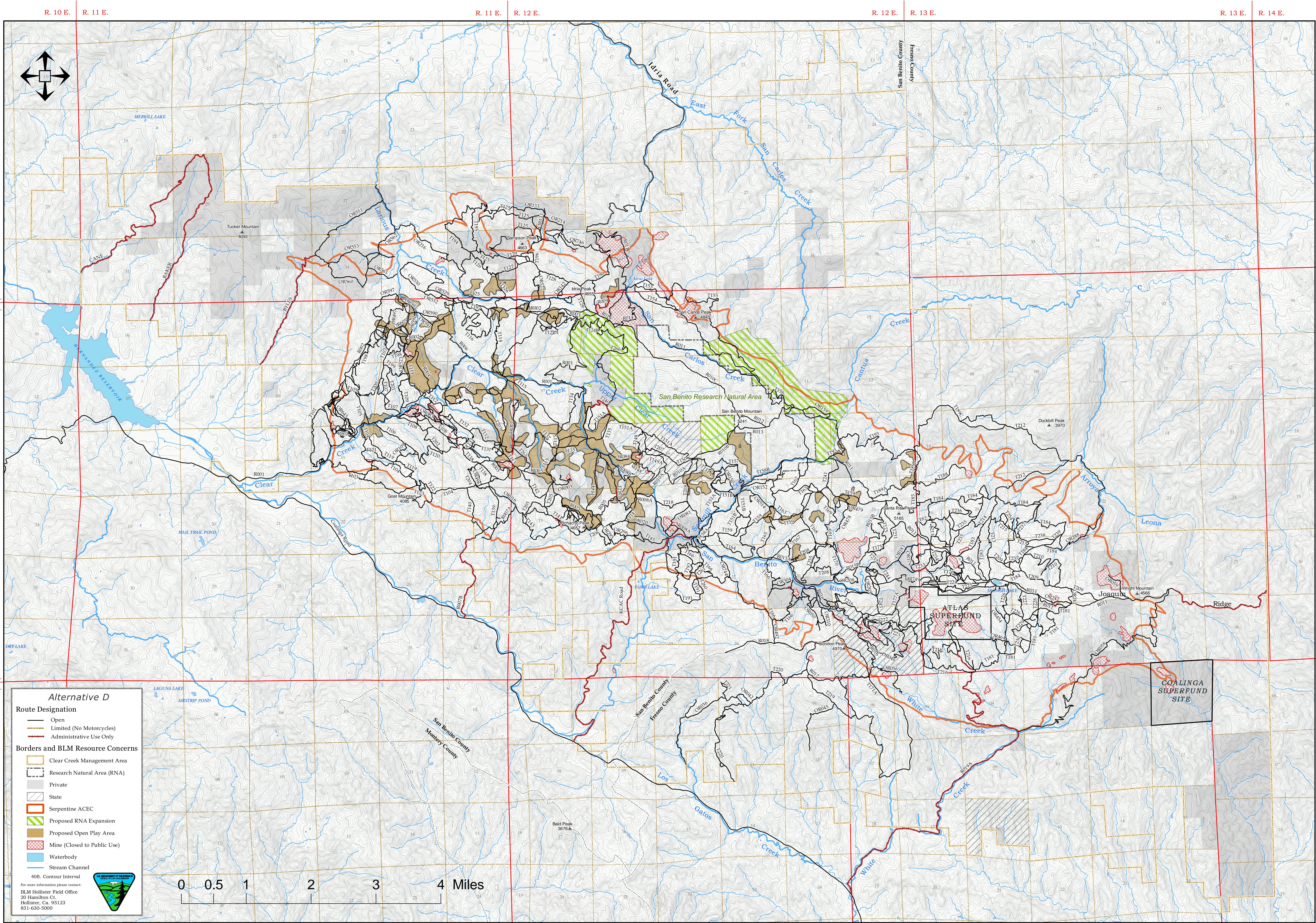
T. 18 S.  
T. 19 S.

T. 17 S.  
T. 18 S.

T. 18 S.  
T. 19 S.

R. 10 E. R. 11 E. R. 11 E. R. 12 E. R. 12 E. R. 13 E. R. 13 E. R. 14 E.

R. 10 E. R. 11 E. R. 11 E. R. 12 E. R. 12 E. R. 13 E. R. 13 E. R. 14 E.



**Alternative D**

**Route Designation**

- Open
- Limited (No Motorcycles)
- Administrative Use Only

**Borders and BLM Resource Concerns**

- Clear Creek Management Area
- Research Natural Area (RNA)
- Private
- State
- Serpentine ACEC
- Proposed RNA Expansion
- Proposed Open Play Area
- Mine (Closed to Public Use)
- Waterbody
- Stream Channel

40ft. Contour Interval

For more information please contact:  
 BLM Hollister Field Office  
 20 Hamilton Ct.  
 Hollister, Ca. 95123  
 831-630-5000



T. 17 S.  
T. 18 S.

T. 18 S.  
T. 19 S.

T. 17 S.  
T. 18 S.

T. 18 S.  
T. 19 S.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.

R. 10 E. R. 11 E. R. 12 E. R. 13 E. R. 14 E.

## List of Preparers

George Hill..... Assistant Field Manager, Hollister  
Robert LaFleur..... Clear Creek Management Area Manager  
Lesly Smith..... Outdoor Recreation Planner/NEPA Coordinator  
Julie Ann Delgado..... Botanist  
Gary Diridoni..... Wildlife Biologist  
Jason Clark..... Trails Coordinator  
Eric Wergeland..... GIS Specialist  
Tim Moore..... Physical Scientist  
Scott Archer..... Senior Air Resource Specialist, BLM-  
National Science and Technology Center