CHAPTER FOUR

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INTRODUCTION

The following analyses addresses impacts from BLM management of public lands surface and federal minerals, which would occur through the implementation of each of the alternatives described in Chapter 2.

The analysis presents the direct, indirect, and cumulative impacts on the human and natural environment in terms of environmental, social, and economic consequences. Separate sections describing cumulative effects, irretrievable or irreversible commitment of resources, and unavoidable adverse impacts are presented at the end of the chapter.

GENERAL ASSUMPTIONS FOR ANALYSIS

The methods and assumptions listed below, and for each resource in Chapter 4, are disclosed to provide a basis for the conclusions reached in environmental assessments. Assumptions common to all alternatives and all resources are listed below, whereas assumptions unique to specific resources and resource uses are listed under *Methods and Assumptions* in the appropriate resource section.

- Sufficient funding and BLM personnel would be available for implementing the final decision.
- Implementing actions from any of the RMP alternatives would comply with all valid existing rights, federal regulations, BLM policies, and other requirements.
- All alternatives are implemented in compliance with standard operational procedures (SOPs), best management practices (BMPs), design features, guidelines for surface-disturbing activities, and mitigation guidelines (Appendix L).
- The analysis of impacts focuses on the anticipated future incremental and meaningful impact of management actions and allowable uses proposed for each alternative. The impact of past and present actions is encompassed within the description of existing conditions (Chapter 3, Affected Environment).
- Projections of the level of activity for land uses are based on historical trends, existing land use agreements such as leases or permits, and statements of interest in land use by individuals and industry organizations. Reasonably foreseeable development scenarios to express these projections have been completed for mineral and energy development (Appendix M).
- Where a management decision restricts or prohibits an activity, a supplementary rule allowing for the enforcement of such a decision would be created with associated penalties and punishments (e.g., Prohibition of public access to industrialized areas assumes the creation of an enforceable supplementary rule prohibiting public access to the specific areas identified on a map or through legal description). Throughout the analysis where the impact of a restriction or prohibition decision is discussed, this serves as the analysis of the impact

of the creation of the supplementary rule for that action. Examples of the specific wording for supplementary rules for Alternative B are presented in Appendix N.

- Appropriate maintenance will be carried out to maintain the functional capability of all developments (e.g., roads, fences, and other projects).
- The discussion of impacts is based on the best available data. Knowledge of the planning area and professional judgment, based on observation and analysis of conditions and responses in similar areas, are used to infer environmental impacts where data are limited.
- Acreage figures and other numbers used in the analyses are approximate projections for comparative and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations. These figures were calculated using GIS technology, and there may be slight variations in total acres between resources. These variations are negligible and do not affect analysis.
- Mineral and right-of-way development is projected to result in 18,000 acres of surface disturbance through the life of the RMP.
- Illegal activities including dumping, trespass, route proliferation etc, will continue to occur.
- Education, interpretation and the establishment of a stewardship ethic in all public lands users will benefit all resources and programs.
- Climate change analyses are comprised of several factors, including greenhouse gases (GHGs), land use management practices, the albedo effect, etc. The tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that contribute to climate change. Qualitative and/or quantitative evaluation of the potential contributing factors within the planning area is included where appropriate and practicable.
- Additional livestock management strategies (such as herding or the installation of fencing) will be needed to implement allocations of Unavailable for livestock grazing. Periodic unauthorized grazing may still occur, especially on isolated, scattered parcels.
- Range improvements may be removed or allowed to remain in areas made Unavailable and these actions would be subject to site-specific assessments to comply with NEPA.

RESOURCES

4.1 AIR AND ATMOSPHERIC VALUES

Air resources in the Planning Area are subject to regulation under Federal and State Clean Air Acts (CAA) and actions affecting air quality must conform to applicable air plans (nonattainment plans, SIPs, attainment demonstration plans, etc.). These plans, developed for criteria pollutants in federal nonattainment areas are designed to meet NAAQS by established dates. The EPA must approve these plans, and when approved, these plans become part of the State Implementation Plan. As noted in Chapter 3, all potential sources of emissions are considered in these plans, and include contributors across the Planning Area. BLM activities and programs are a minor source. This section will discuss criteria pollutant emissions associated with BLM activities and programs proposed in the Plan; Prevention of Significant Deterioration (PSD); cumulative effects and climate change. In addition, this section includes a conformity analysis for nonattainment pollutants, where applicable.

This analysis is based upon various activities' potential to emit. In the case of the Bakersfield RMP, there are certain pollutants that have the potential to be emitted. The activities and programs associated with the Plan that would have a potential to emit pollutants and impact air quality include energy development (oil and gas), minerals development, vehicle use on unpaved roads (including OHV activities and wind erosion from disturbed areas), fire management, and livestock grazing. The analysis is also limited by the need to look at changes in emissions that would occur as a result of activities associated with various alternatives. All of these activities currently occur on BLM managed lands and result in pollutant emissions. This existing level of activity is the no action alternative. Emissions from activities not impacted or changed by the proposed alternatives will not be addressed in this analysis.

Of the proposed activities, energy development has the largest potential to emit pollutants. The USEPA lists the following steps in Oil and Gas operations: Exploration and production, Processing, Combustion, Storage and transport, and Wastewater. These activities currently occur on BLM lands and result in emissions of NOx, VOCs and particulates. Changes in OHV activities, vehicle routes and designations, and livestock grazing use could result in changes in disturbance rates to soil surfaces which could result in changes in PM10 and PM2.5 emissions. Fire management activities including wild fire control, prescribed fire and managed fire all result in emissions of a number of criteria pollutants and air toxics. Based upon the potential to emit and emissions that are likely to be affected by the Plan, the analysis will primarily address particulate emissions (PM10 and PM2.5) and ozone precursor emissions (NOx and VOC). In addition, these pollutants are important because large portions of the Planning Area are classified as federal nonattainment or maintenance areas for PM10, PM2.5 and/or ozone.

Impacts would be in the form of gaseous and particulate matter that is emitted into the air as a result of the activities and programs being analyzed. All of the pollutants subject to analysis are addressed in federal, state and local laws, statutes, regulations and rules. The federal and state ambient air

quality standards define the criteria pollutants emissions that are typically analyzed and are the focus of this analysis.

METHODS OF ANALYSIS

The air quality impact analysis for the Bakersfield RMP starts with regional (District level) emission inventories included in the statewide emission inventory, which is maintained by the California Air Resources Board (CARB). These inventories include data on emissions of VOCs, NOx, PM10 and PM2.5 from known sources, including the oil and gas industry (energy development), fire and vehicle use on unpaved roads by air districts. In many instances, emissions data by district is divided and reported by county. Examples of source categories identified as applicable to potential BLM emissions are detailed in Appendix A.

There are problems in directly using some of the data in that the inventory areas do not always correspond to the BLM Planning Area. In addition, some of the information included in the data is not always comparable. As an example, the category of fire emissions for one geographic area may be wildland fires; while in another area emissions data includes car and structure fires. Most existing emissions inventories do not contain data on emissions from range livestock grazing, since grazing is not considered a substantial source for criteria pollutant emissions. In this EIS, BLM has estimated the emissions from existing and proposed BLM activities. Where emissions cannot be quantitatively estimated, qualitative descriptions of potential impacts are used. Quantifications for emission estimates are included in Appendix A.

As part of the inventory information provided by the CARB there is information on the methodology used to estimate the inventory data. The ideal would be to have actual measurements of all sources; in reality this is impossible. As a result, much of the information is generated from models. The general equation for emission estimation is:

$$E = A \times EF \times (1-ER/100)$$

where:

E = emissions,
A = activity rate,
EF = emission factor, and
ER= overall emission reduction efficiency, %.

ER is further defined as the product of the control device destruction or removal efficiency and the capture efficiency of the control system. When estimating emissions for a long time period (e. g., one year), both the device and the capture efficiency terms should account for upset periods as well as routine operations.

An emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or

duration of the activity emitting the pollutant (e. g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i. e., a population average).

In order to identify significant impacts from actions affecting air quality the following criteria are used:

- Exceed any air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the geographic area is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Conflict with or obstruct implementation of an applicable air quality plan;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Affect long-term air quality as a result of operation and/or maintenance activities.

Management actions would result in impacts that could contribute to climate change if they would conflict with any applicable plan, policy, regulation, or state goals adopted for the purpose of reducing the emissions of GHGs.

ASSUMPTIONS:

- State Implementation Plans (SIPs) are prepared for the federal nonattainment/maintenance areas. These SIPs are designed to result in compliance with the NAAQS by federal deadlines. The SIPs are implemented through a series of rules. In addition, air quality within the Planning Area is highly regulated by a number of federal, state and regional regulations and rules. These regulations and rules apply to many of the activities that are proposed in the Plan alternatives. This is especially true in the oil and gas industry which is highly regulated and requires Air Quality Permits through NSR, ISR, etc. It is assumed that the activities would be conducted in compliance with applicable regulations and rules. In addition, it is assumed that the progress on reducing the emission levels would continue resulting in attainment/maintenance of the NAAQS.
- Emissions from route designation come from the number of miles traveled and the amount of disturbed surfaces. Changes in emissions under the proposed alternatives would occur from Comprehensive Trails and Travel Management (CTTM) decisions that result in changes to the number of designated vehicle routes (mileage) and the amount of disturbed lands available for wind erosion. Direction from the USEPA indicated that as a site rests after disturbance, the amount of PM emissions decline as the fine particles are blown away and the soils stabilize. The data indicated that the half-life of the emissions is only a few minutes during wind events and that unless the site is re-disturbed, the source goes away (USEPA 2003).

4.1.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Alternative A maintains the current management situation as the No Action alternative required by NEPA. It would continue current management under the existing 1997 Caliente RMP and 1984 Hollister RMP, as amended. Management of resources and sensitive habitats would remain at current levels but would not address emerging issues concerning public lands. This alternative also would not address the use of lands acquired after the signing of these RODs, including public lands at Atwell Island, Piedras Blanca Light Station, and portions of the San Joaquin River Gorge. When no specific management actions are described in the No Action alternative, management of lands and resources has been guided by BLM policy and interim management strategies.

All these emissions represent the base line emissions as described in existing air quality inventories and are accounted for in relevant air quality management plans (SIPs). All proposed alternatives are analyzed in terms of deviation from the baseline emissions either as quantitative numbers or more qualitative estimates when the necessary data is not available or is incomplete. The CARB and the local air districts are responsible for maintaining emission inventories of important sources of air pollution. These inventories can be accessed by source category and region through the CARB web site (http://www.arb.ca.gov/ei/emissiondata.htm). These inventories are exhaustive for the important sources of emissions. In addition to the actual emission inventory data, the web site includes information on methodologies used to estimate emissions. Table 4.1-1 lists available data from the CARB database that is applicable to this analysis and notes where data is not comparable or lacking.

Table 4.1-1
Air Quality Baseline Emissions for Applicable Criteria Pollutants– Alternative A

Activity (Source)	Pollutant	Total Emissions from Inventory (tons/year)	Emissions from BLM (tons/year)	% of Total Inventory	Location (Air District)	Notes
Oil and Gas Production in the Planning Area	NOx VOC PM10 PM2.5	11372.5 13379.2 950.4	1122.7 818.8 74.2	9.9% 6.1% 7.8%	SJVAPCD	In 2010, total oil and gas production represented >0.1% of NOx emissions in SJV air basin (refer to Figure 3.1-2)
	NOx VOC PM10 PM2.5	Data for the Planning Area portion is not available.	0	0%	MBUAPCD	This area is classified "attainment" for all criteria pollutants.
	NOx VOC PM10 PM2.5	811.7 905.1 44.3 42.9	82.4 10.3 4.7 4.7	10.1% 1.1% 10.6% 10.9%	VCAPCD	
Livestock Grazing	NOx VOC PM10 PM2.5	NO emission inventory data exists for range Livestock Grazing			SJVAPCD SLOCAPCD SBCAPCD VCAPCD EKAPCD	
Vehicle Use on Unpaved Roads	PM10 PM2.5	41.5	6.2 1.7	0.14%	SJVAPCD	
	PM10 PM2.5	Specific inventory is incomplete for this category			SLOCAPCD SBCAPCD VCAPCD EKAPCD	
Fire Management	NOx VOC PM10 PM2.5	Data is spotty for this source			SJVAPCD SLOCAPCD SBCAPCD VCAPCD EKAPCD	Inventories are not comparable.

4.1.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Several of the activities and sources of emissions are proposed to have the same activity level throughout all of the action alternatives (B-E). Fire management and the energy development RFD

remain the same between all proposed action alternatives, so the impact will remain constant between Alternatives B through E. The proposed alternatives include a number of activities which would generate emissions. Anticipated emissions include direct emissions of NOx, SOx and VOC (which are precursor emissions for ozone and PM2.5), CO, PM10 and PM2.5. These emissions are associated with combustion sources such as diesel drill rig engines, drill pad construction equipment (i.e., dozers, backhoe, grader, etc.), temporary production flare, remedial well work, equipment trucks, hauling of liquids, drill rig crew trucks/vehicles, portable lift equipment, portable testing equipment and temporary production facilities. In addition, PM10 will be released during the drill pad construction phase and from the daily ingress and egress of vehicles on unpaved access roads. The primary emission sources during any new construction at the drill sites and on Rights of Ways would be from heavy equipment exhaust and fugitive dust generation. Other emission sources will occur during the operation and maintenance of these leases and Rights of Ways. These sources include oil facilities, gas facilities, operator vehicle traffic, and any gas powered oil well pumping units.

The expected emissions from the proposed oil and gas RFD would be low both in relation to the overall activity in the region, and by itself As most wells are drilled over a period of days, the emissions would be short lived from this source. The proposed action is projected to result in an estimate of 4,000 wells over the next 10 year period or an average of 400 wells per year. The number of wells authorized has varied considerably over the last 10 years. In 2010, there were approximately 360 approvals issued. It should be noted that not all wells authorized in a given year are drilled in the same calendar year, and some never get drilled. For air analysis purposes, approximately 5% of the wells are projected to be in the South Central Air Basin while the remaining 95% would be in the San Joaquin Valley Air Basin. This is an increase of 40 wells per year (10%) over the no action alternative. Based upon existing estimates for oil and gas development, the proposed action to drill an additional 40 new wells per year would generate an estimated 7.4 tons per year of PM10 emissions and 112.3 tons of NOx per year in the SJVAB and 0.5 tons per year of PM10 and 8.2 tons per year of NOx in the South Central Coast Air Basin. These calculations are included in Appendix A. SOx emissions associated with energy development come from sulfur in diesel fuel; the use of low sulfur diesel nearly eliminates these emissions.

BLM requires that the lessee/operator has the responsibility for ensuring that all operations are properly permitted with the appropriate air management agencies, and that the operations are in compliance with all mobile and stationary source guidelines. Required control measures include such items as dust control using application of water or pre-soaking and limiting traffic speed on unpaved roads. They also include measures such as use of low-emission construction equipment, use of low sulfur fuel, and/or use of the existing power transmission facilities, where available, rather than temporary power generators.

Fire management is a very unpredictable activity in terms of area burned, acres burned, burning conditions and when fires may occur. The use of prescribed fire in place of wildland fire would result in fewer emissions because the activity would occur under permit from the respective air

districts (title 17 permits). Title 17 permits would have environmental reviews and prescriptions such as burning at certain fuel moisture, seasons, and burning on days when atmospheric conditions are conducive to smoke dispersal. Emission estimates from this prescribed fire cannot be estimated at this time because of the uncertainty of needs, and unpredictability of burn parameters. The smoke analysis will be completed as part of the permitting process for prescribed fires. Wildfire timing, location, size and emissions cannot be estimated in advance, and therefore estimates of emissions from this source cannot be determined.

4.1.3 IMPACT OF ALTERNATIVE B

Alternative B (preferred alternative) balances resource conservation and ecosystem health with the production of commodities and with public use of the land. This alternative places importance on collaborative arrangements with landowners, permit holders, and other land managers to provide opportunities to produce commodities from natural resources and to use the land for public purposes on a sustainable basis while maintaining key ecological, cultural, and recreational values. Alternative B would result in the following changes from baseline emissions under current management:

- Reduction in the miles of routes available for motorized vehicle use;
- Reduction in the amount of nonenergy minerals activity; and
- Slight increase in livestock grazing activity.

Alternative B would result in a decrease in available routes from the current 1895 miles to 770 miles. This represents a 59% decrease in routes and the associated disturbed surfaces which contribute to PM10 emissions. Based upon the methodology used by the USEPA (2003), this represents a decline from 6.2 tons per year (tpy) of PM10 to 2.55 tpy. PM2.5 emissions would likewise decline from 1.7 tpy to 0.67tpy.

Minerals activities (nonenergy) are projected to decline from 332 projects under current management to 203 projects as a result of Alternative B. This represents a 39% decline in activity. Although it is not known how much the change in emissions this represents, it is assumed that there would be a corresponding decline in PM10 emissions.

Livestock grazing use is projected to increase from 34,500 AUMs to a potential 40,000 AUMs as a result of Alternative B. This represents a 14% increase in use by allocating acquired acreage. Again, although it is not known how much the change in emissions this represents, it is assumed there would be a corresponding increase in PM10 emissions. PM10 emissions from rangeland livestock grazing activities are considered minor; state and regional air inventories do not identify or quantify rangeland livestock grazing as a significant source of PM10 emissions. As a result, any increases due to potential increases in rangeland grazing are expected to be clearly de minimis.

4.1.4 IMPACT OF ALTERNATIVE C

Alternative C emphasizes conserving natural resources, maintaining functioning natural systems, and restoring natural systems that are degraded. Management would focus on protecting sensitive resources while limiting or excluding certain resource uses in sensitive areas. The changes proposed under Alternative C would result in the following changes from baseline emissions under current management:

- Reductions in the miles of routes available for motorized vehicle use;
- Reduction in the amount of nonenergy minerals activity; and
- Slight increase in livestock grazing activity.

Alternative C would result in a decrease in available routes from the current 1,895 miles to 656 miles. This represents a 65% decrease in routes and the associated disturbed surfaces which contribute to PM10 emissions. Based upon the methodology used by the USEPA (2003), this represents a decline from 17.2 tpy of PM10 to 6 tpy . PM2.5 emissions would likewise decline from 1.7 tpy to 0.56 tpy.

Minerals activities (nonenergy) are projected to decline from 332 projects to 137 projects as a result of Alternative C. This represents a 59% decline in activity. Although it is not known what change in emissions this represents, it is assumed that there will be a corresponding decline in PM10 emissions.

Livestock grazing use is projected to increase from 34,500 AUMs to 37,800 AUMs. This represents a potential 9% increase in livestock grazing use. Again, although it is not known how much change in emissions this represents, it is assumed there would be a corresponding increase in PM10 emissions. Any increase in PM10 emissions from rangeland livestock grazing activities is considered minor since state and regional air inventories do not identify or quantify it as a significant source of PM10 emissions. As a result, any increases due to potential increases in rangeland livestock grazing are expected to be clearly de minimis.

4.1.5 IMPACT OF ALTERNATIVE D

Alternative D mimics Alternative C in all aspects except livestock grazing. This alternative eliminates livestock grazing from the public lands where the Bakersfield RMP provides administrative direction for the livestock grazing program. The changes proposed under alternative D would result in the following changes from baseline emissions under current management:

- Reductions in the miles of routes available for motorized vehicle use;
- Reduction in the amount of nonenergy minerals activity; and
- Elimination of livestock grazing activity.

Alternative D would result in a decrease in available routes from the current 1,895 miles to 656 miles. This represents a 65% decrease in routes and the associated disturbed surfaces which contribute to PM10 emissions. Based upon the methodology used by the USEPA (2003), this

represents a decline from 17.2 tpy of PM10 to 6 tpy . PM2.5 emissions would likewise decline from 1.7 tpy to 0.56 tpy.

Minerals activities (nonenergy) are projected to decline from 332 projects to 137 projects as a result of Alternative D. This represents a 59% decline in activity. Although it is not known what change in emissions this represents, it is assumed that there will be a corresponding decline in PM10 emissions.

Livestock grazing use is projected to eliminate all 34,500 AUMs of current grazing use on lands within the Decision Area administered by the Bakersfield FO as a result of Alternative D. This represents a 100%decline in authorized use. Again, although it is not known how much the change in emissions this represents, it is assumed there would be a corresponding decline in PM10 emissions. Since state and regional air inventories do not identify rangeland livestock grazing as a significant source of PM10 emissions, emissions from these activities are considered minor and expected to be clearly de minimis.

4.1.6 IMPACT OF ALTERNATIVE E

Alternative E emphasizes the production of natural resources commodities and public use opportunities. Resource uses such as recreation, livestock grazing, mining, oil/gas leasing and development, consistent with BLM guidance and constraints, would be emphasized. Potential impacts on sensitive resources would be mitigated on a case-by-case basis. The changes proposed under Alternative E would result in the following changes from baseline emissions under current management:

- Reductions in the miles of routes available for motorized vehicle use;
- Reduction in the amount of nonenergy minerals activity; and
- Slight increase in livestock grazing activity.

Alternative E would result in a decrease in available routes from the current 1,895 to 1,683 miles. This is an 11% decrease in routes and the associated disturbed surfaces which contribute to PM10 and PM2.5 emissions. Based upon the methodology used by the USEPA (2003), this represents a decline from 17.2 tpy of PM10 to 15.2 tpy. PM2.5 emissions would likewise decline from 1.7 tpy to 1.4 tpy under this alternative.

Minerals activities (nonenergy) are projected to decline from 332 projects to 227 projects as a result of Alternative E. This represents a 32% decline in activity. Although it is not known how much the change in emissions this represents, it is assumed that there will be a corresponding decline in PM10 emissions.

Livestock grazing use is projected to increase from 34,500 AUMs to 42,300 AUMs which represents a 23% increase in use. Again, although it is not known how much change in emissions this represents, it is assumed there would be a corresponding increase in PM10 emissions. Any increase in PM10 emissions from rangeland livestock grazing activities is considered minor since state and

regional air inventories do not identify or quantify it as a significant source of PM10 emissions. As a result, any increases due to potential increases in rangeland livestock grazing are expected to be clearly de minimis.

4.1.7 CONFORMITY

A general conformity analysis is required for any federal action within any federal nonattainment and/or maintenance area. There are six geographic areas within the Planning Area that meet these criteria. These include the San Joaquin Valley, Ventura County and Eastern Kern County ozone planning areas; the East Kern and the San Joaquin Valley PM10 planning areas; and the San Joaquin Valley PM2.5 planning area. . The Clean Air Act and its implementing rules (40 CFR part 93) state that federal agencies must make a determination that proposed actions in federal nonattainment and maintenance areas conform to the applicable implementation plan before the action is taken. In addition, the action cannot cause or contribute to any new violation of the NAAQS, cannot increase the frequency or severity of any existing violation of any NAAQS, or delay timely attainment of any standard or any required interim emission reduction or other milestones.

The BLM has developed a ten-step process to comply with the federal conformity requirements. These ten steps are: (1) Determine spatial and jurisdiction applicability, (2) Describe SIP status and content, (3) Develop any necessary background information, (4) Develop air quality impact analysis, (5) Compare activity to applicable SIP provisions and rules, (6) Develop conclusion statement, (7) Prepare a formal determination, (8) Conduct an agency/public review, (9) Submit the determination to appropriate regulatory agencies and (10) Archive the results. Steps 1-6 have been completed as part of this EIS. In accordance with (40 CFR 93.153 (b)(1&2)), Steps 7-10 of this process will be completed for the preferred alternative for ozone, prior to issuance of the Record of Decision.

Analysis and Conclusion:

Alternative A (No Action) represents the baseline emissions against which all of the other alternatives are compared. All of the SIP requirements for the six federal nonattainment/maintenance areas are met by the Plan alternatives.

Ozone: For Ozone, the analysis shows that precursor emissions would increase slightly under all alternatives in the San Joaquin Valley and Ventura County air basins. Based on the RFD scenario for oil and gas development, ozone precursor emissions would increase approximately 10% from BLM authorized actions under all alternatives. This increase equates to a 0.9 % increase in emissions for the Oil and Gas emission source category. However, this increase represents less than 0.09% of the regional emission inventory. These emissions are based upon projected population growth in the region. Ozone precursor emission levels for oil and gas development in the San Joaquin Valley under Alternatives B-E are estimated above de minimis levels (10 tons per year). An exceedance of a de minimis threshold value triggers the need for publication of a formal conformity determination, in compliance with EPA rules (40 CFR 9300). As a result, a formal conformity determination is required for this pollutant in the San Joaquin Valley 8-hour ozone nonattainment

area. A Conformity Determination will be completed for the Proposed Plan concurrent with the Proposed RMP/Final EIS and prior to the Record of Decision.

PM10: The analysis shows that all of the action alternatives result in reductions of PM10 emissions. The largest reductions in PM10 would occur under Alternative D, with the smallest reductions occurring in Alternative E. These emission reductions are achieved as a result of reductions in livestock grazing use and route designations. Emissions reductions will primarily occur in the San Joaquin Valley planning area with minor amounts occurring in the East Kern planning area. Estimated PM10 emissions are consistent with the SIPs and represent conformity. Since the calculated emissions of PM10 do not exceed de minimis threshold values for designated maintenance areas, no formal conformity determination is required.

PM2.5: Oil and gas development proposed under Alternatives B-D will result in increased PM2.5 emissions in the SJV. Estimated PM2.5 emissions are clearly de minimis and therefore no further analysis is required.

4.1.8 PREVENTION OF SIGNIFICANT DETERIORATION

As indicated in Chapter 3, no stationary sources of emissions that could affect Class 1 Airsheds are anticipated in the Planning Area, nor does the BLM Bakersfield FO anticipate actions or project(s) that would require a PSD permit. However, proposed BLM authorized actions that would result in substantial attainment emissions would be reviewed for PSD requirements and would need to secure all relevant air quality permits before operating.

4.1.9 CLIMATE CHANGE

The Council on Environmental Quality (CEQ) issued draft guidance on February 18th, 2010 which states that "if a Proposed Action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO2-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public" (CEQ 2010). The CEQ does not propose this as a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the NEPA analysis.

Secretarial Order 3289 outlines the Department of the Interior's approach for managing resources in light of the uncertainty surrounding climate change. The BLM has responded to this order by developing a multifaceted program to assess conditions across public lands at multiple scales. Although still early in strategy and operational development, this program can guide implementation of activities authorized by BLM resource management plans (http://www.blm.gov/wo/st/en/prog/more/climatechange.html). Once finalized, both Departmental and CEQ guidance are anticipated to be forthcoming.

While global and national GHG inventories are established, regional and state specific inventories are in varying levels of development. Quantification techniques are in development; for example,

there is a good understanding of climate change emissions related to fuel usage. Analytical tools necessary to quantify climatic impacts at the project level are presently unavailable. As a consequence, impact assessments of specific effects of anthropogenic activities are difficult to determine. The U.S. Global Change Research Program recognizes that further work is needed on how to quantify cumulative uncertainties across spatial scales, and the uncertainties associated with complex intertwined natural and social systems (Karl et al. 2009).

It is not possible to discern whether global climate change is affecting resources in the analysis area of the plan. For example, an analysis of the Bakersfield, CA temperature data from 1938 to 2009 shows that average annual temperature has remained about 1.19 degrees of the mean (one standard deviation) nearly every year for the period of record. Regular fluctuations occur every year. Figure 3.1-3 illustrates there is already great variation in temperatures within the region. It is important to note that projected changes are likely to occur over several decades to a century. Therefore many of the projected changes associated with climate change may not be measurable within the reasonably foreseeable future or within the lifespan of this plan. As noted in chapter 3, the predicted temperature changes are less than the existing year to year variations in the average annual temperatures.

Existing climate prediction models are global or continental in scale and there are no tools available to estimate potential impacts to climate change within the planning area, or potential impacts of a single GHG emission source on global climate change. Under this RMP GHG emissions are anticipated from vehicle fuel usage, public access and OHV use, prescribed burning, livestock grazing, and oil and gas production. The primary sources of greenhouse gases from existing and proposed BLM management are carbon dioxide (CO2) and methane (CH4), resulting mainly from continued oil and gas development. In addition, nitrous oxide (N2O) and VOCs are indirect air pollutants from oil and gas production that contribute to ozone formation and aid in prolonging the life of methane in the atmosphere. GHGs are produced and emitted by various sources during phases of oil and gas exploration, well development, production, and site abandonment.

Direct and indirect GHG emissions may occur from various sources during each phase of oil and gas exploration and development. During exploration and development, emissions are generated from well pad and access road construction, rigging up/down, drilling, well completion, and testing phases. GHG emissions for these phases are mainly CO2 emissions from fuel in internal combustion engines of diesel trucks, equipment, and rigs. As Zahniser (date unknown) noted in the Characterization of Greenhouse Gas Emissions Involved in Oil and Gas Exploration and Production Operations, Review for the California Air Resources Board, an additional one-time and potentially long term effect could include carbon sinks lost due to surface and vegetation disturbance associated with well site development.

In absence of final Departmental and/or CEQ guidance, the Bakersfield RMP analysis relies on the continued development of local or regional policy and guidance addressing GHG impacts under CEQA. The BLM will encourage the integration of design features and consider the application of BMPs to reduce project level GHG emissions. Consistent with the SJVAPCD guidance (SJVAPCD

2009b) on addressing GHGs under CEQA, if Best Performance Standards (BPS) are implemented then no quantification is required. Based on conformance with this guidance, GHG contributions resulting from proposed plan implementation would be undetectable on a nationwide basis and would be expected to have a very minor influence on global climate change.

4.2 BIOLOGICAL RESOURCES

Biological resources include the plant and animal species and populations, natural communities, and ecosystem processes that occur within the Decision Area. A diversity of vegetation, habitats, plant and animals, including numerous special status species, are known to occur on public lands.

Effects on biological resources, including special status species and riparian habitat, from other management programs include short term and long term habitat degradation, loss, and fragmentation. Surface-disturbing activities would damage and remove vegetation, destroy habitat features used by wildlife, injure or kill wildlife, and alter soil surface and water flow patterns, which can modify species composition and population levels. Interactions between biological resources, humans, and domestic animals would result in consumption of vegetation, mechanical damage to vegetation, displacement and harassment of wildlife, disruption of behavior patterns, and competition for space and other resources.

METHODS OF ANALYSIS

The analysis of direct and indirect effects is focused on species, populations and habitats within the Decision Area. Direct and indirect impacts to biological resources result from actions that physically alter, damage, or destroy habitat; disrupt essential behaviors such as feeding, breeding, and sheltering; or result in injury or mortality to plants or animals. Direct impacts occur as a direct result of management actions, at the same time and place. Indirect impacts occur later in time or in a different location than the original action.

Certain programs, such as livestock grazing, minerals, recreation, trails and travel, and lands and realty, have the greatest potential to modify habitat and affect species at both the local level and across the landscape. ACEC and biological resources management implement the greatest number of actions to restore, protect, and conserve biological resources, including special status species and riparian habitats. Such programs as air quality, geology, soils, cultural resources, and paleontological resources have limited to negligible effects on biological resources, including incidental protection of biological resources. Some programs have mixed effects. For example, the cave and karst program protect cave species and habitats but have little effect on other biological resources. Other programs, such as wildland fire ecology, may have short-term adverse effects on individual plants and animals, but result in long-term beneficial effects on biological communities and populations.

Potential effects of decisions and management actions to species, populations and habitats were identified by a team of biologists. A metric which best reflected the scale and magnitude of these effects, such as acres, miles or number of species, was selected whenever possible. A GIS data set

and overlays of resources and resource uses was used to quantify effects. In the absence of quantitative data, best professional judgment was used to provide detailed qualitative information.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- All actions undertaken as part of this RMP would be assessed in accordance with NEPA and the Endangered Species Act. If required, consultation with the U.S. Fish and Wildlife Service (USFWS) would be completed. SOPs, mitigation measures, and terms and conditions in this RMP and subsequent NEPA documents and biological opinions will be applied and followed.
- Valid existing rights, such as existing oil and gas leases, private mineral rights, and existing land use authorizations, would be honored, but SOPs, stipulations, mitigation measures, and terms and conditions in this RMP and subsequent NEPA documents and biological opinions will be applied and followed.
- If additional special status species or critical habitat were designated or discovered, the objectives and decisions in this plan would extend to such species as well.
- Over time, species distribution may change. Management action locations would change accordingly.
- Impacts on special status species would be similar to those discussed for species with no special status. Special status species may be more restricted in distribution, reducing the likelihood that certain activities would interact with them. However, impacts on special status species could be more pronounced due to reduced population sizes and ranges and increasing threats. More emphasis would be placed on avoiding or minimizing project effects on special status species since their populations are already in decline. Similarly, more emphasis would be placed on implementing conservation actions for special status species.
- Incomplete information includes undiscovered locations of special status species that may occur on public land and federal mineral estate.
- All areas within VRM Class I and Class II would be managed to meet VRM Class I or Class II objectives, regardless of visibility from a key observation point.
- Generalized impacts from certain programs (Livestock Grazing, Wildland Fire Ecology, Fluid Minerals, Solid Minerals, Trail and Travel Management, Lands and Realty, and Recreation) are common to all alternatives. These generalized impacts are presented below. The impact discussion presented for each alternative focuses on the particular impacts of that alternative and builds on the discussion of generalized impacts that occur under all alternatives.
- Proposed management of the following resources or programs would provide incidental protection of biological resources because they limit surface disturbance and human uses that affect species, populations and habitat, or have negligible adverse effects on Biological Resources: Air and Atmospheric Values, Cave and Karst Resources, Cultural Resources,

Paleontological Resources, Soil Resources, Visual Resources, Water Resources, Outstanding Natural Areas, Backcountry Byways, National Trails, Wild and Scenic Rivers, Lands with Wilderness Characteristics, Wilderness Study Areas, and Interpretation and Environmental Education. These resources and programs are not analyzed further.

Generalized Impacts that Occur under All Alternatives

Livestock Grazing. Direct impacts on vegetation, including special status species, resulting from livestock grazing management include disturbing soils and biological soil crusts, removing and trampling vegetation, depositing urine and manure, and dispersing seeds. Consumption and trampling affects the amount, physical structure, and vigor of grazed plants, which would have a long-term effect on species composition, distribution, and diversity in the grazed area. Grazing reduces seed production by removing plant parts, including reproductive structures, and has long-term impacts on the native seed bank. The deposition of urine and manure increases nitrogen and moisture levels, generally favoring nonnative weedy species. Livestock transport and introduce weed seed clinging to their fur and in their manure. Livestock hooves break and trample soil crusts and create germination sites for weedy species. Movement of livestock across non-level landscapes results in a generalized net movement of soil down slope; even moderate slopes are likely to suffer soil erosion under moderate grazing pressure (Mwendera et al. 1997). Impacts to riparian areas include loss of vegetation, soil disturbance, sedimentation, changes in water quality, and changes in channel morphology (Hoorman and McCutcheon 2005).

By altering vegetation composition, structure, and diversity, grazing alters wildlife habitat and animal species composition in the grazed area which usually occurs at varying levels across the landscape. Livestock also compete with wildlife for food, water, and space. Some animals avoid areas when livestock are present, while others are attracted to areas when livestock are present. Livestock hooves can collapse burrow entrances. Urine and manure affect water chemistry, which would influence aquatic species composition.

Livestock trails alter water flow patterns and erode steep terrain. Concentrated and repeated livestock hoof action compacts soil, such as that around water troughs or under shade trees.

Removing vegetation, especially persistent herbaceous material, reduces fine fuels that can carry wildfires that kill native shrub species that are not fire adapted. Removing persistent herbaceous material also creates an open habitat structure favored by certain wildlife species. On the other hand, grazing spreads the weedy nonnative grasses that form the bulk of the fine flashy fuels.

Infrastructure associated with grazing also alters habitat. Fences create travel barriers for some species and provide perches for predators. Water developments provide water for wildlife but may also divert water from natural channels and riparian habitat. Installation and repair of range improvements results in short- and long-term disturbance to habitat. Infrastructure affects livestock movement and creates heavily used areas near troughs and along fences and influences trail

development by livestock, which, in turn, creates areas of heavy impacts on vegetation over the long term.

The effects of grazing tend to be related to the intensity and timing of grazing. Higher levels and grazing during the plant reproductive season tends to have greater impacts on plant species. Riparian areas are more susceptible during the hot season, when livestock congregate in the cooler, moister, riparian area. Soil crusts are more susceptible to long-term damage during the dry season, when dormancy prevents their growth and repair and results in more potential for soil erosion by wind.

Due to the widespread nature of grazing, a number of special status species are affected.

Blue elderberry, the host plant for the valley elderberry longhorn beetle, can be grazed or mechanically damaged by livestock. Similarly, *Cammissonia* species, the food plant for larva of the Kern primrose sphinx moth, can be trampled or consumed. Kern primrose sphinx moth adults and larva can be trampled by livestock.

Livestock can consume water from vernal pools that provide habitat for the vernal pool fairy shrimp, spadefoot toad, succulent owl's clover, and other special status vernal pool species. Fecal material and urine alter pool chemistry and nutrient levels. Livestock can trample individual vernal pool plants and animals. Grazing can remove weedy vegetation that can decrease vernal pool habitat quality.

Ponds constructed and maintained for livestock water provide breeding habitat for special status amphibian species, such as the California tiger salamander and California red-legged frog.

Grazing can remove vegetation and create an open habitat structure that is preferred by some special status species, such as the blunt-nosed leopard lizard and mountain plover. In annual grasslands, these benefits are usually short term and vary from year to year, depending on precipitation.

Livestock can consume and trample special status plant species. Livestock hooves can compact soils or disrupt cryptogamic crusts, favoring germination of weedy nonnative species over special status plant species. Grazing is considered a threat to many rare plants. Kelso Creek monkeyflower populations have been impacted by livestock, and Springville clarkia is readily eaten by cattle. Although larkspur are poisonous to cattle, the plants are occasionally eaten and are easily damaged by trampling. Larkspur is readily eaten by sheep, which experience no ill effects. Habitat for short-statured species, such as the Kelso Creek monkeyflower, is degraded when livestock disturb the soil, degrade cryptogamic crusts, and create opportunities for the invasion of nonnative weedy species. Impacts from livestock grazing continue to be a problem for the monkeyflower populations in Cyrus Canyon.

Grazing prescriptions that take into consideration special status species requirements will generally minimize impacts on known populations. Populations or occurrences that have not been discovered may not be protected.

Grazing tends to promote weedy species. Livestock disturb soils, create nitrogen-rich habitat conducive to weeds, and act as vectors for the introduction and spread of weeds. Many of the nonnative species infesting California grasslands are European species that evolved under grazing.

Wildland Fire Ecology. Fire consumes vegetation and litter, altering habitat structure, and soil nutrients, temperature and physical properties. Plant species composition following a fire typically goes through a series of successional assemblages. Some plant species are fire intolerant, and other plant species require fire for rejuvenation or reproduction. Removal of vegetation can create germination sites for weedy species to become established. Burned areas may eventually return to the original plant community or may become permanently altered.

By altering vegetation structure and plant species composition, fire modifies wildlife species composition in an area. As vegetation structure and species composition change over time, so do the assemblages of wildlife that make use of the area. Certain species are attracted to recently burned areas by food, such as insects and herbaceous vegetation; other species that require more habitat structure remain absent from the area for several years. Although fire removes dead woody material that provides habitat for certain species, it also creates snags and downed wood that can be used by wildlife. Wildlife can also be killed or injured by fire as a result of burning or smoke inhalation. The impacts from prescribed fire can result in short term degradation or improvement of habitat, depending on the habitat requirements of individual species. Fuels treatments and prescribed fires usually have short term effects at the local scale while large wildfires have long term effects at the landscape scale.

Construction of fire lines to control fires removes vegetation and exposes the soil surface. Fire lines on steep slopes can result in erosion. Personnel and equipment can introduce weed seed, and fire lines provide germination sites for weedy species. Off-road travel during fire suppression can collapse dens and burrows, and wildlife can be injured or killed by being struck by vehicles or from being inside collapsed features. Minimum impact suppression tactics (MIST) would reduce impacts of fire suppression on vegetation and wildlife. Fire lines are typically stabilized with water bars or other erosion practices once the fire has been controlled. Dropping fire retardant can add nitrogen and phosphorus to the system and promote the establishment of invasive plants at the expense of native plants. Fire lines may be constructed to protect plant species that are eliminated by fire. In such cases the long-term benefits of preserving established plants may outweigh any short-term impacts associated with line construction.

Reducing fuels by cutting, masticating, mowing, and trimming often targets certain plant groups. Typically, shrubs and the lower limbs of trees are removed. Herbaceous material is mowed. Removed material may be chipped and left in place, altering the amount of litter, which influences plant species germination. Treatment that disturbs the soil may provide sites for noxious and invasive weeds to become established. Mechanical treatment may be used to reduce fuels so that prescribed fire can be applied to meet biological resource objectives. In such cases the long-term benefits of the prescribed fire may outweigh any short-term impacts associated with mechanical treatment.

Prescribed fire generally includes objectives for improving plant species composition and vigor and wildlife habitat structure. Timing, intensity, and burn patch size can be designed to minimize unnecessary impacts on plants and animals. Prescribed fires can return fire intervals to the natural occurrence that is appropriate for a community and can prevent catastrophic fires which often have longer term impacts at the landscape scale.

Impacts on listed plant and animal species are the same as described above. MIST would be implemented to avoid or minimize impacts on listed species and habitats. Fire suppression would protect plant communities or plant species that provide habitat for listed species. Prescribed fire and mechanical treatments would be used to reduce the risk of catastrophic wildfires and improve habitat quality for some listed species. Thus, the BLM lands would continue to support populations of special status species, which would contribute to their conservation and recovery.

Fluid Minerals. Oil and gas leasing would have short term and long term indirect effects on biological resources if new leases were developed. Development of existing oil and gas leases would also have effects on biological resources.

Impacts on biological resources, including special status species, from oil and gas activities could occur either on habitat or on plants and animals themselves. Oil and gas development results in both short term and long term habitat loss from installing roads, pipelines, power lines, drilling pads, sumps, and production facilities, from contouring surface profiles, and from making other surface modifications. Habitat quality can be affected by oil and gas development. Roads, pads, and pipelines fragment habitat, and construction can damage vegetation or destroy burrows and dens. Surface disturbance and travel on dirt roads create dust, which reduces photosynthesis and reproduction in plants. Oil spills or leaks can coat vegetation and soil, or can entrap animals. Animals can also become entrapped in trenches, sumps, well cellars, valve boxes, pipe segments, and collapsed burrows or dens. Vehicles and equipment can crush or strike animals. Human activity can displace wildlife from the area and introduce trash. Wildlife can consume or become entangled in trash. Geophysical exploration would result in many of the same impacts as other oil and gas activities but generally results in short-term impacts on biological resources.

Preliminary data suggest that ecological communities in San Joaquin Valley saltbush scrub remain relatively intact up to medium oil field development levels (Fiehler and Cypher 2010). Animal communities appear to become altered at high levels of oil field development. Although the wildlife, assemblages are more diverse at high levels of development, the wide-spread common species appear to replace the arid endemic species.. At high levels of oil field development, greater structural diversity due to facilities and plantings, greater amount of edge habitat, and the availability of water create habitat that is colonized by these opportunistic nonendemic species. High intensity oil fields are generally localized on a few BLM parcels and leases. Low to moderate levels of oil and gas activities occur on most BLM lands in oil fields. Thus, most BLM oilfields retain wildlife populations typical of the natural communities where the oil fields occur.

Within the RMP decision area most of the oil and gas activity is projected to occur in the San Joaquin Valley. Between 100 and 300 wells are forecast to be drilled per year. This correlates well with the 191 wells drilled per year over the past decade. The RFD estimates that between 100 and 265 acres of surface disturbance would occur annually as a result of existing and new federal oil and gas leases. Only a portion of the disturbance would be within habitat. Between July 1996 and September 2009, approximately 500 acres of habitat were disturbed as a result of federal leases within the decision area. Disturbance by year ranged from about 20 acres per year to about 90 acres in 2007-2008. This is an average of 40 acres per year.

Within the San Joaquin Valley, for every habitat acre permanently disturbed, three acres are set aside as compensation. For temporary disturbance, 1.1 acre is set aside. In addition, if public land that has been identified as part of the reserve and corridor system were disturbed, temporarily or permanently, an additional replacement acre would be set aside. Between July 1996 and September 2009, approximately 1,300 acres of compensation and replacement habitat was set aside for the approximately 500 acres of habitat disturbed. This yielded an overall compensation ratio of about 2.5 acres of compensation for every acre disturbed. These measures are implemented to maintain listed species habitats at the landscape scale.

Measures to minimize impacts on species and habitat, including special status species and riparian habitat, would also continue to be applied to project authorizations. Examples of these measures are contained in Appendix L - Best Management Practices and Standard Operating Procedures.

Geothermal exploration and development would result in short term and long term habitat loss from installing roads, pipelines, power plants, transmission lines, and drilling pads, from contouring surface profiles, and from making other surface modifications. Habitat quality can also be affected by geothermal exploration and development. Roads and pipelines can fragment habitat, and construction can damage vegetation or destroy burrows. Animals can become entrapped in collapsed burrows or dens, trenches, and pipe segments. Animals are also crushed by moving vehicles and equipment and can be displaced by human activity and equipment noise.

High geothermal potential is limited to public lands in the vicinity of Lake Isabella in the Sierra Nevada. If exploration and development were to occur, between 53 and 367 acres could be disturbed over the life of the plan. Such impacts would be considered localized and not likely to result in impacts at the landscape scale.

Oil, gas, and geothermal development can occur at night, which introduces artificial light that can either attract or displace wildlife and can disrupt normal behavior patterns. These impacts range from localized in low intensity developed oil fields to being more wide-spread across the landscape in large and highly developed oil fields. Animals that are active at night may be less habituated to human activity. Vehicles may be more likely to strike wildlife at night when visibility is reduced.

Oil and gas activities would continue to affect special status species, especially in the San Joaquin Valley and in the Sespe-Hopper Mountain area..

The general impacts of oil and gas activities on the San Joaquin Valley suite of listed species and their habitats are described above. These species are Kern mallow, Bakersfield cactus, San Joaquin woolly-threads, California jewelflower, San Joaquin kit fox, blunt-nosed leopard lizard, giant kangaroo rat, Tipton kangaroo rat, and San Joaquin antelope squirrel. Species-specific surveys and species avoidance and habitat protection measures would result in oil and gas activities that minimize impacts on these species. Low and moderate levels of development would sustain suitable habitat for these animals, while the high density oil well areas would become unsuitable or largely avoided (Spiegel 1996; Cypher 2000; Fiehler and Cypher 2010). In the past, projects have been located to avoid listed plant populations. Development of BLM surface within reserves and corridors would also be subject to a disturbance limit of 10 percent (reserves) and 25 percent (corridors). Implementation of measures to minimize impacts, together with development limits in reserves and corridors, would maintain species populations and habitats on BLM lands within the San Joaquin Valley oil fields and would contribute to special status species conservation and recovery over the long term and at the landscape level..

Condors can be harmed by ingesting oilfield materials, including oil, vehicle coolant, chemicals, and trash. Condors can collide with structures and power lines. Habituation to humans can increase the likelihood of human-condor interactions. Noise from activities can disrupt roosting and nesting behavior, and place chicks at risk. Condors can become coated with oil from well cellars, leaks, and spills or become entangled in equipment or fences. Oilfield roads provide access for hunting and other recreation, which produces trash that condors ingest. Certain measures have reduced the risk of oil-related impacts on condors in the Sespe-Hopper Mountain area, such as aggressively removing trash, fencing well pads frequented by condors, installing perching deterrents and bird deflectors on power lines, seasonally restricting certain oil field activities and public access, and replacing rubber lines with steel ones. While these impacts may occur at a local scale, they may impact Condor populations across the larger landscape where these birds occur. The impacts may be short term or long term depending on Condor population levels and population trends.

Soil disturbance associated with oil field development can promote weedy species. In addition, weeds can be introduced and spread by oil field workers and equipment.

Solid Minerals. Solid mineral exploration and development would result in habitat loss from test pits, overburden removal and storage, material extraction, roads, pipelines, power lines, production facilities, contouring of surface profiles and other surface modifications. Vegetation can be destroyed outright or impacted by dust created by mining. Habitat quality can also be affected by solid mineral exploration and development. Weedy species can be introduced and spread by personnel, vehicles, and equipment. Roads and pipelines can fragment habitat, and construction can damage vegetation or destroy burrows and dens. Surface disturbance and travel on dirt roads creates dust, which reduces photosynthesis and reproduction in plants. Animals can become entrapped in trenches, pits, pipe segments, and collapsed burrows or dens. Vehicles and equipment can crush or strike animals. Human activity can displace wildlife from the area and introduce trash. Wildlife can

consume or become entangled in trash. Due to the location of the deposits, sand and gravel extraction could result in surface disturbance to stream channels, floodplains, and riparian habitat.

Surface disturbance associated with exploration and testing would be localized and small scale. Surface disturbance associated with extraction for salable minerals and solid leasable minerals, where larger pit mines are necessary, would be localized but at a larger scale. Extraction of locatable minerals generally results in scattered, small-scale, localized impacts. These impacts may be short term or long term depending on the duration of mining activities.

Extraction of salable and solid leasable minerals can include nighttime activities, which introduce artificial light that can either attract or displace wildlife and can disrupt normal behavior patterns. Animals that are active at night may be less habituated to human activity. Vehicles may be more likely to strike wildlife at night when visibility is reduced.

Mines that result from locatable mineral extraction provide habitat for wildlife species, such as bats. Complete closures of mines that are public safety hazards can remove habitat used by wildlife. Gating mines can increase the quality of habitat over the long term by protecting wildlife that use mines from human disturbance.

The general effect on special status species from solid mineral management is described above. Species-specific surveys and species avoidance and habitat protection measures would result in solid mineral activities that minimize impacts on these species. Listed plant populations usually would be avoided by development. Although there may be localized effects on special status species, especially annual plant species whose population boundaries are not always evident, adjacent BLM lands would continue to support populations of these species, which would contribute to their conservation and recovery.

Trail and Travel Management. The general effects of travel and transportation management on vegetation and wildlife, including special status species, would be habitat fragmentation, direct damage to or mortality of plants and animals, vegetation alteration, habitat disturbance, disturbance from vehicle noise/human interaction, noxious weed or undesired nonnative species introduction, soil compaction and erosion, and dust, which could decrease plant reproduction and photosynthesis.

Route proliferation, due to both authorized and unauthorized off-route travel, can trample vegetation, cause burrow collapse, strike wildlife, and create new routes. Unauthorized route proliferation removes habitat and creates access to new areas, further degrading vegetation and fragmenting habitat. This is especially harmful to the San Joaquin Valley suite of special status species that have experienced an extensive loss of historic habitat. Diurnal blunt-nosed leopard lizards and San Joaquin antelope squirrels are susceptible to the higher speed recreational trail riding, road use, and unauthorized cross-country travel. Mortality from recreational vehicle strikes could threaten some populations in the southern San Joaquin Valley.

Lands and Realty. Impacts on biological resources, including special status species, from land use authorizations can occur either to habitat, or to plants and animals themselves. Authorizations that

include surface disturbance results in habitat degradation, loss, and fragmentation. These impacts may be short term or long term, but usually occur at the local scale. Surface disturbance can damage vegetation or destroy features used by wildlife, such as burrows and dens. Linear features that require surface disturbance, such as roads, or installation of structures that act as barriers, such as aboveground pipelines, can fragment habitat. Vertical structures, such as poles, towers, and buildings, provide perches and nesting structures for predators. Animals can collide with towers, aerial lines, guy wires, and other structures with vertical components. Wind turbines are known to kill large numbers of birds and bats. Surface disturbance and travel on dirt roads creates dust, which reduces photosynthesis and reproduction in plants. Animals can be entrapped in trenches, pipe segments, and collapsed burrows or dens. Vehicles and equipment can crush or strike animals. Human activity can displace wildlife from the area and introduce trash. Wildlife can consume or become entangled in trash. The soil disturbance associated with these activities increases the amount of weedy habitat. Weeds can be introduced and spread by personnel, vehicles, and equipment.

Retention and acquisition of lands or mineral estate indirectly affects biological resources by maintaining or establishing BLM control. Lands under BLM control are subject to compliance with protective laws, regulation, and policies, such as NEPA and the Endangered Species Act. Retained and acquired lands would also be subject to the protective management measures of this RMP.

Conversely, disposal of lands and mineral estate indirectly affects biological resources by relinquishing BLM control. Disposed lands and mineral estate could no longer be subject to compliance with protective laws, regulations, and policies to the same degree. The protective management measures of this RMP would no longer apply.

Maintaining and providing public and administrative access would have effects similar to Comprehensive Travel and Transportation Management and Recreation Management.

Resolving unauthorized occupancy would have effects similar to other land use authorizations or disposal, depending on the method of resolution. If the resolution is to issue a land use authorization, the effects would be similar to other land use authorizations. If resolution was to dispose of the area to the user, the effects would be similar to other disposals.

The general effects of lands and realty management on special status species are described above. Species-specific surveys and species avoidance and habitat protection measures would result in land use authorizations that minimize impacts on these special status species. Listed plant populations usually would be avoided by development. Although there may be localized effects on special status species, adjacent BLM lands would continue to support populations of these species, which would contribute to their conservation and recovery. The impacts on special status species from retention and acquisition would be the same as described above. Federally listed species would be subject to a higher level of protection on BLM lands than on private lands because the Endangered Species Act establishes a higher standard for impact minimization, conservation and recovery for federal agencies. This is especially so for federally listed plant species that have limited protection outside areas of federal jurisdiction.

Recreation. Direct impacts from recreation management actions include loss or modification of habitat from constructing recreation facilities, including roads and trails. Repeated and concentrated use of facilities that results in frequent human presence would have long-term localized impacts on biological resources.

Recreation that results in occasional human presence would have temporary localized impacts on biological resources. Recreation that results in repeated human presence, surface disturbance, or refuse (e.g., litter, spent ammunition, human and pet waste) could have a long-term impact. These activities include hiking, rafting, kayaking, swimming, horseback riding, mountain biking, motorized trail riding, camping, fishing, hunting, target shooting, playing paintball and airsoft, geocaching, rock hounding, prospecting, rock climbing, and sightseeing.

Hunting would have effects on certain species. Individual animals are killed or injured and population demographics are altered. Animals would alter use patterns in response to hunting.

Larger scale visitation, such as commercial, competitive, and group activities, would have greater impacts due to the increased number of people and acres impacted and the concentration of these impacts. Effects from larger scale visitation would be reduced through restrictions on permits or authorizations.

Human-wildlife interactions could cause animals to alter behaviors and habitat use patterns. Pets can harass and even kill wildlife. Many animals avoid using areas near people. Maintenance and development of water-based recreation sites would result in impacts on aquatic and riparian habitats through visitor use. Repeated human use, including camping, near water degrades aquatic and riparian habitat and displaces wildlife.

Generally, recreational OHV activities that result in increased human presence would have localized impacts on biological resources. Impacts would vary by frequency of motorized travel in a particular area and could include displacement of animals, increased stress during critical periods, and degraded habitats. OHV use can alter seasonal use patterns of many wildlife species. Travel off existing routes would destroy and degrade botanical resources, including sensitive species. Besides outright destruction of plants by vehicles, dust created by motorized activity interferes with photosynthesis and reproduction. The disturbed soils also provide habitat for weeds, and OHVs act as vectors to introduce and spread weeds. Of particular concern is the potential of transporting Sahara mustard seed from OHV areas in the Mojave Desert to areas within the RMP planning area.

Overnight use of areas would have impacts due to the longer stay and nighttime use. Collecting wood for fires reduces the amount of woody material available for wildlife habitat or to protect the soil surface. In the absence of sanitation facilities, human waste could alter soil nutrient levels and water chemistry, which would affect habitat and water quality. More trash would be generated. Multiple meals would generate food smells and waste that could attract wildlife. Tent or trailer placement could damage vegetation or compact soils. Night lighting can either attract or displace

wildlife and disrupt normal behavior patterns. Continuous human and pet activity would displace wildlife for long periods and have a greater effect than transient day use activities.

Public education and outreach could foster behavior that minimizes impacts on biological resources. Repair and revegetation of use areas would restore natural processes and improve habitat quality.

The general impacts of recreation management on special status species are described above. Recreation would be especially disruptive to certain special status species. Equestrians, hikers, pets, paintball and airsoft users can create trails that fragment and eventually destroy habitat for the Morro shoulderband snail and Morro manzanita at Los Osos. Visitation at Pt. Sal could disrupt the secluded nature of shore and beach use by northern sea lion, California least tern, and western snowy plover, altering reproduction and habitat use. Recreational vehicle use in the lower hills of the San Joaquin Valley habitats can result in new routes that destroy vegetation and fragment and degrade habitat for the San Joaquin Valley suite of special status species.

4.2.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Actions to conserve, restore, and enhance biological resources, including special status species and riparian habitat, would continue to be implemented. These proactive measures include direction to retain and acquire important native habitat, especially for listed species; to implement recovery plans and secure areas important for recovery (e.g., compensation lands); to maintain, enhance, and restore native habitat and native populations, including riparian and sensitive species; to maintain linkage between areas of natural habitat; to improve the knowledge base of the species and lands under BLM management; and to manage all public lands appropriately. In addition, the designation of special areas with high biological value as ACECs and SMAs would establish management objectives and use restrictions that would help protect important biological resources from human activities and would result in the long-term maintenance of high-quality habitat across the landscapes where BLM lands occur.

Weeds would not be managed beyond law, policy and agency guidance.

Restrictions on certain activities to minimize impacts on biological resources (including special status species and riparian habitat) would continue to be imposed. These include such protective measures as SOPs for oil, gas, geothermal, and other development; the closure of sensitive areas to oil, gas, or geothermal development; the withdrawal of specified lands from mining law; Guidelines for Livestock Grazing Management, the establishment of ROW avoidance areas; and restrictions on campfires and wood or vegetation collecting. All of these actions would benefit native populations and habitats at the local and landscape scales by eliminating or reducing negative impacts stemming from development.

Release of un-retrieved nonnative animals would be allowed and may result in negative effects (such as competition, predation, habitat destruction, disease transmission, and hybridization) from nonnative species to native plants and animals.

Approximately 59,808 acres of ACEC in 13 areas would continue to be designated. This includes 52,473 acres in 12 ACECs specifically to protect biological resources, including habitat for 93 special status species. This includes six federally listed animal species and eight listed plant species. Two ACECs with 28,072 acres include riparian objectives.

Use restrictions, such as closing 3,850 acres to camping and campfires, 7,140 acres to the discharge of firearms, and 2,080 acres to cross-county horse travel would reduce damage to vegetation and soils, fragmentation of habitat, disruption of essential animal behaviors, wildfire ignitions, and loss of woody materials which would help maintain suitable habitat to conserve species and populations in Special Management Areas and ACECs.

Prescribed fire treatments would emphasize hazardous fuels reduction, and vegetation and wildlife habitat objectives. In areas treated for fuel reduction, species diversity would be reduced since vegetation structure would be simplified to create firebreaks and defensible space. Fire treatments to implement biological resource objectives mimic natural fire cycles and would improve plant composition and wildlife habitat structure. In addition, the potential for catastrophic wildfires that remove large expanses of habitat would be reduced.

Approximately 139,490 acres would be closed to OHV use, including the Blue Ridge and Pt. Sal ACECs, designated wilderness areas, Wilderness Study Areas, and the Pacific Crest National Scenic Trail corridor. This would protect biological resources in these areas over the long term. The remainder of the decision area (264,590 acres) would be designated as limited to OHV use, with impacts occurring on existing routes. No acres would be designated as open to OHV use.

There would be 844 miles of routes inventoried and designated as available for vehicle travel within habitat reserves and corridors for the San Joaquin Valley suite of special status species. These routes contribute to the habitat disturbance within these zones but are a minor proportion of the overall habitat disturbance. The amount of existing routes poses a risk to exceeding disturbance thresholds of 10 percent for reserves and 25 percent for corridors. This is especially true in the Buena Vista reserve and adjacent corridors, where routes have greatly proliferated. The amount of routes in the Lokern and Kettleman Hills reserve areas also contribute to the total amount of habitat disturbance. Existing roads, road proliferation, and related habitat disturbance could reduce the conservation and recovery value of the public lands in the reserves and corridors. Exceeding these thresholds may preclude recovery of some of the San Joaquin Valley listed species.

There would be 310 miles of inventoried routes in special management areas and 92 miles of inventoried routes in ACECs designated for biological resources. Areas such as Irish Hills, Tierra Redonda, Rusty Peak, Frog Pond Mountain, Cypress Mountain, Chimineas Ranch, Bittercreek, Hopper Mountain, Chico Martinez, Salinas River, Alkali Sink, and Goose Lake would experience little impacts from existing routes within their boundaries and would likely have a small amount of route proliferation beyond existing routes because these areas are not accessible to the public due to private lands blocking legal access or BLM control of access. Road proliferation and habitat loss could occur in the Lokern and Kettleman Hills ACECs, where public access is not controlled by

private lands. However, such areas as the Temblor-Caliente and Monache-Walker Pass NCLWMAs, North Fork of the Kaweah River, and Piute Cypress ACEC (outside of the groves) are generally accessible by the public and may be subject to route proliferation. The Temblor-Caliente NCLWMA and portions of the Monache-Walker Pass NCLWMA around Isabella Lake would continue to experience extensive route proliferation, reducing habitat quality for biological resources. These impacts are becoming more extensive across these landscapes.

Lands and realty management actions could result in impacts to species, populations and habitats due to surface disturbance and potential interactions between authorized activities and biological resources. Lands with biological values or that contribute to regional conservation strategies could be disposed, which could compromise success of regional conservation and recovery strategies.

All mineral estate is potentially available for disposal. Disposed mineral estate would no longer be subject to the BLM's protective laws, regulations, and policies which protect biological resources.

Approximately 110,400 acres would be land use authorization (including ROW) avoidance areas, which would limit surface disturbance and reduce habitat degradation, fragmentation, and loss within ACECs and SMAs excluding NCLWMAs.

Approximately 314,600 acres would be available for livestock grazing, 61,200 acres would be unavailable and 26,900 acres are unallocated. Livestock grazing in areas available for such use would be conducted in a manner as to meet the minimum Standards of Rangeland Health. This management would result in the maintenance or attainment of healthy rangelands by ensuring that the four fundamentals of watersheds, ecological processes, water quality, and habitats for special status species are functioning and in order.

Livestock grazing would continue within the boundaries of Cyrus Canyon and continue to impact populations of Kelso Creek monkeyflower. Plants and habitat would be subject to trampling and other negative impacts from livestock, soil crusts would continue to be degraded, and weedy species would have a chance for establishment and spread.

Specific livestock grazing management guidelines would prescribe minimum annual mulch levels and seasonal restrictions for saltbush scrub and riparian areas within the grazed areas of the planning area. These guidelines help protect and maintain biological resource habitats and sensitive communities in support of achieving minimum standards of rangeland health. These standards would be applied to BLM lands across the landscape and would influence habitat quality over the long term.

Specific livestock management guidelines that allow livestock grazing in areas known to contain federally listed species would take into account specific species requirements. The locations of most federally listed animals are generally known within the decision area; thus, implementing this special livestock management guideline would conserve federally listed animal populations on public land. In contrast, the locations of federally listed plant populations are not as well known due to a lack of inventory and the difficulty in detecting many species. This is especially true for annual species

because their ephemeral nature makes them difficult to detect, and population densities vary year to year. As a result, implementing this special guideline may not protect all federally listed plant populations since their locations are not well known, and livestock grazing has been identified as a threat to most species. In addition, it can be difficult to identify a rare annual species in an area where the vegetation has been grazed.

Approximately 150,850 acres would be closed to oil and gas leasing which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources in these areas. This includes the Bitter Creek, Blue Ridge, Deer Spring, Erskine Creek, and Piute Cypress areas which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources, including condors, in these areas.

All new oil, gas, and geothermal leases would be issued with CSU stipulations to protect special status species and critical habitat. Important nesting, wintering, and roosting areas in the Case Mountain and Kettleman ACECs would be protected from fluid mineral development by a CSU stipulation that allows relocation and seasonal activity restriction to minimize disruption of important raptor behaviors. Cypress Mountain, Frog Pond, Irish Hills, and Rusty Peak would be leased with an CSU stipulation to protect biological resources. These CSUs would allow the BLM to move, delay, and even prohibit surface-disturbing activities on all or a portion of the lease, if necessary, to reduce impacts on biological resources to an acceptable level. Alkali Sinks, Goose Lake and Tierra Redonda would be leased with an NSO stipulation to protect biological resources. The NSO stipulation prohibits any surface disturbance on the lease surface.

Approximately 820,000 acres would be available for solid mineral leasing and solid mineral material disposal which could result in impacts to species, populations and habitats biological resources due to surface disturbance and potential interactions between mineral activities and biological resources. There would be 10,130 acres proposed for withdrawal from mineral entry which would eliminate surface disturbance, introduction and spread of weeds, and potential for interactions between mineral activities and biological resources in these areas.

Approximately 20,000 acres would be proposed for withdrawal from mineral entry, which would eliminate surface disturbance and reduce habitat degradation, fragmentation, and loss, and the potential for interactions between mineral activities and biological resources in these areas.

Approximately 125,750 acres would continue to be managed as SRMAs. Managing lands as SRMAs could encourage additional use of these lands and increase the level of disturbance to biological resources over the long term. SRMAs would have more recreation facilities, which results in surface disturbance and habitat loss. Although SRMAs concentrate and manage recreational use, they can attract more initial and repeat visitation due to outreach efforts and the amenities provided. Focused management, monitoring, and corrective actions may reduce some impacts on biological resources that result from the increased visitation that SRMA designation generates but may not mitigate all of the effects. For example, existing SRMAs are listed on BLM Web pages and recreation maps, making the public more likely to visit SRMAs. Providing and maintaining facilities, such as toilets,

trash receptacles, information kiosks, trails, parking areas, and boat launch sites, may manage recreation use, but it also promotes initial and repeat visitation. The outreach and amenities associated with SRMAs increase visitation above what it would be without the SRMA designation. Increased visitation results in increased impacts on biological resources, such as surface disturbance, vegetation collecting, and displacement of wildlife due to humans and pets.

The magnitude of impacts on biological resources from SRMAs depends on the primary activities emphasized by the SRMA, public demand for those activities, and whether the geographic location overlaps with sensitive biological resources. For example, a SRMA, such as Chimney Peak, that emphasizes hiking, horseback riding, and primitive camping in an area with few sensitive biological resources and multiple options for meeting the recreational demand, may have little impact on biological resources. The many options provided by other entities, such as the Forest Service or NPS, results in a low demand for the BLM sites, low levels of use, and a low impact on biological resources. In contrast, a SRMA, such as the North Fork of the Kaweah, that emphasizes river access in an area that contains riparian habitat and few opportunities for meeting the large demand, may have greater impact on biological resources. If the demand and subsequent increase in use is greater than BLM resources can manage, even under a SRMA, surface disturbance, displacement of wildlife, and damage to riparian vegetation may substantially reduce habitat quality over the long term.

Dispersed camping is not permitted within 100 feet of any freshwater source, which would help prevent degradation of aquatic and riparian habitat and displacement of wildlife.

4.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Updated protections and restrictions, such as additional SOPs; fluid mineral leasing stipulations; withdrawal from mining laws; closing areas to mineral material disposal; eliminating, relocating or redesigning uses; implementing the Central CA Livestock Management Guidelines; and restrictions on the collection of wood and vegetation, would be implemented to protect and conserve vegetation, wildlife and ecosystem processes. Specific biological resource objectives and decisions, such as enhancing or restoring habitat conditions; controlling and eliminating weeds or nonnative animals; inventorying, monitoring and researching biological resources; restoring or reestablishing native plant and animal populations; retaining lands with significant biological values or that contribute to regional conservation strategies; acquiring biologically important areas; and restoring and protecting riparian areas are included. ACECs, areas of ecological importance, priority species, plant communities and habitats are designated or identified where specific management decisions are prescribed to protect biological resources. Implementing actions to meet these objectives and decisions would minimize the impacts from resource uses, conserve species and populations, improve habitat conditions, and promote the success of recovery plans and other regional conservation strategies.

Prescribed fire treatments would emphasize hazardous fuels reduction, and vegetation and wildlife habitat objectives. In areas treated for fuel reduction, species diversity would be reduced since vegetation structure would be simplified to create firebreaks and defensible space. Fire treatments

to implement biological resource objectives mimic natural fire cycles and would improve plant composition and wildlife habitat structure. In addition, the potential for catastrophic wildfires that remove large expanses of habitat would be reduced.

The use of wildland fire suppression and fuels management practices that minimize impacts to biological resources, such as Minimum Impact Suppressions Tactics, use of Resource Advisors, post fire emergency stabilization and rehabilitation, would help protect species and populations and maintain habitat quality. The use of wildland fire for resource benefit in the South Sierra FMU, Domeland FMU, and the portion of the Three Rivers FMU protected by the National Park Service would implement biological resource objectives by mimicking natural fire cycles and improving plant composition and wildlife habitat structure. In addition, the potential for catastrophic wildfires that remove large expanses of habitat would be reduced.

The travel management network would include approximately six miles of routes within 300 yards of streams and 11 stream crossings along the 756 miles of motorized routes. Use of these routes could degrade riparian habitats due to increased sediments from the route crossings and sediment transport down the route tracks. Streambanks would be broken down, vegetation would be removed, and channels would be widened where the routes cross or meander along the stream channel. Habitat for terrestrial and aquatic plants and animals would be degraded at these locations. Impacts would be localized and only occur at 11 locations. In addition, if impacts exceed levels of acceptable change, routes and crossings would be reengineered to restore degraded waters, which would restore riparian habitats for biological resources.

All new oil, gas, and geothermal leases would be issued with CSU stipulations to protect special status species and critical habitat. Important nesting, wintering, and roosting areas in the Hopper Mountain, Kaweah, San Joaquin River Gorge, Kettleman, Chico Martinez, the Temblor and Caliente NCLWMAs and other important raptor areas would be protected from fluid mineral development by a CSU stipulation that allows relocation and seasonal activity restriction to minimize disruption of important raptor behaviors. Cypress Mountain, Frog Pond, Irish Hills, Rusty Peak, and Salinas River would be leased with an CSU stipulation to protect biological resources. These CSUs would allow the BLM to move, delay, and even prohibit surface-disturbing activities on all or a portion of the lease, if necessary, to reduce impacts on biological resources to an acceptable level.

4.2.3 IMPACT OF ALTERNATIVE B

Approximately 99,619 acres of ACEC in 17 areas would be designated. This includes 96,790 acres in 16 ACECs specifically to protect biological resources, including habitat for 83 special status species. This includes 11 federally listed animal species and eight listed plant species. Two ACECs, Erskine Creek and Kaweah, with 31,060 acres, include riparian objectives. Atwell Island, Deer Spring, Caliente Creek, Frog Pond, NWLWMA(s), South Fork of the Kern River, Table Mountain and Kennedy Table, Conserved Lands, Irish Hills, Rusty Peak, and Salinas River would be identified as areas of ecological importance.

Designation of special areas with high biological value as ACECs and areas of ecological importance would establish management objectives and use restrictions that would help protect important biological resources from human activities and would result in the long-term maintenance of high-quality habitat across the landscapes where BLM lands occur.

Use restrictions, such as closing 42,840 to camping and campfires, 199,130 acres to the discharge of firearms, and 45,550 acres to equestrian use would reduce damage to vegetation and soils, fragmentation of habitat, disruption of essential animal behaviors, wildfire ignitions, and loss of woody materials which would help maintain suitable habitat to conserve species and populations in areas of ecological importance, ACECs, and where priority communities, habitats, and species occur. In addition, 29,160 acres in the Lokern-Buena Vista and Kettleman Hills ACECs would be open to camping but campfires would be prohibited. This would reduce the risk of fire starts that could eliminate fire intolerant saltbush.

Approximately, 30,940 acres would be recommended for closure to hunting. This would allow animals to use these areas without risk of mortality or harassment from hunting. Certain areas, such as the Atwell Island wetlands, would function as an important regional wildlife sanctuary because it would be closed to hunting.

Disturbance within the Conserved Lands area of ecological importance will be managed not to exceed 10% in reserve areas and 25% in corridor areas. In addition, certain areas outside the reserve and corridor system may be managed as corridors if they were to contain high quality habitat for special status species. This would maintain species populations and habitats on BLM lands within the San Joaquin Valley and would contribute to special status species conservation and recovery over the long term and at the landscape level.

Release of un-retrieved nonnative animals would be limited to approved biocontrol agents, authorized livestock, and augmentation of naturalized species in accordance with a CDFG permit or plan. Release of nonnative animals may result in negative effects (such as competition, predation, habitat destruction, disease transmission, hybridization) from nonnative species to native plants and animals. Release of approved biocontrol agents, authorized livestock and augmentation of naturalized species with a CDFG permit or plan, would be subject to a high level of environmental review and are not expected to result in undesirable impacts.

Collection of dead and down woody material would be limited to less than 4 inches in diameter which would help retain large woody material that is important for nutrient cycling, soil development, wildlife habitat. Smaller diameter woody material would become depleted in concentrated use areas, such as Keyesville, Chimney Peak, Long Valley and Walker Pass. The loss of smaller diameter material may have a localized effect on some species.

Mineral estate with no significant fluid mineral potential could be available for disposal. Disposed mineral estate would no longer be subject to the BLM's protective laws, regulations, and policies which protect biological resources.

Approximately 128,100 acres would be ROW avoidance areas, and 121,300 acres are ROW exclusion areas which would limit surface disturbance and reduce habitat degradation, fragmentation, and loss. Most of these avoidance and exclusion areas are within ACECs, NLCS units, lands with wilderness characteristics and Wild and Scenic River Corridors where biological resources already receive direct or incidental protection. ROW avoidance and exclusion areas provide complementary protection to biological resources in these areas. In addition SRMAs, VRM Class I and II areas, ACECs, and NLCS units would be exclusion areas for utility scale renewable energy Rights-of-ways which would prevent large scale habitat modification from renewable energy development.

Approximately 328,700 acres would be available for livestock grazing and 66,200 acres would be unavailable. Livestock grazing in areas available for such use would be conducted in a manner as to meet or exceed the minimum Standards of Rangeland Health. This management would result in the maintenance or attainment of healthy rangelands by ensuring that the four fundamentals of watersheds, ecological processes, water quality, and habitats for special status species are functioning and in order.

In addition 7,800 acres would be available only for the purposes of vegetation management in the Atwell Island area of ecological importance. This would allow livestock to be used to remove vegetation so that height and cover is suitable for species such as horned lizards, mountain plovers, San Joaquin kit fox and Tipton kangaroo rats.

Specific livestock grazing management guidelines would prescribe minimum annual mulch levels and seasonal restrictions for saltbush scrub and riparian areas within the grazed areas of the planning area. These guidelines help reduce damage to biological resources, habitats and sensitive communities over the long term.

Additional livestock management guidelines would take into account specific species requirements for grazing in areas known to contain special status species. The locations of most special status animals are generally known within the decision area; therefore, implementing this special livestock management guideline would conserve special status animal populations on public land. In contrast, the locations of special status plant populations are not well known due to a lack of inventory and the difficulty in detecting many species. This is especially true for annual species because their ephemeral nature makes them difficult to detect, and population densities vary year to year. Implementing this special guideline may not protect most special status plant species since their locations are not well known, and grazing has been identified as a threat to most species. In addition, it can be difficult to identify a rare annual species in an area where the vegetation has been grazed.

Livestock grazing would be curtailed within the boundaries of the Cyrus Canyon ACEC and eliminate impacts from livestock on populations of Kelso Creek monkeyflower. The diminutive monkeyflower would no longer be subject to trampling or other negative impacts from livestock, soil crusts would be given a chance to restore naturally, untrammeled habitat would be available for

the normal fluctuation of population boundaries, and there would be less chance for the establishment and spread of weedy species.

Approximately 142,940 acres would be closed to OHV, including Los Osos and Pt. Sal ACECs, designated wilderness areas, Wilderness Study Areas, and the Pacific Crest National Scenic Trail corridor. This would protect biological resources in these areas. The remaining 261,140 acres of the decision area would be designated as limited to OHV use, with impacts on designated routes. Some illegal user-made routes would proliferate in native habitats, which would reduce habitat quality for biological resources.

Of the 1,937 miles of routes in the travel network, approximately 770 miles of routes would be designated as motorized, 308 miles as closed and 783 miles as authorized use. This includes 238 miles of oil field roads that would be designated as authorized access. Eliminating recreation travel on these roads would reduce vehicle traffic and reduce the potential for disturbance from vehicle noise/human interaction, noxious weed or undesired nonnative species introduction, and mortality from vehicle strikes. Habitat could also be restored on approximately 308 miles of closed routes. Table 4.2-1 displays the miles of routes by designation that cross areas with special biological resource concerns. As undesirable routes not on the current inventory are identified, the steps and processes to evaluate and remediate these routes identified in the Travel Management Plan (within the RMP) would be used to rectify the situation, diminish the occurrence of user-created routes, and reduce adverse impacts to habitat quality. Furthermore, an on-the-ground BLM presence (e.g., law enforcement and park rangers) would aid in the elimination of this problem through education and enforcement.

Table 4.2-1
Alternative B Route Designations in Areas with Special Biological Resource Concerns

Route Designation	Conserved Lands Area of Ecological Importance Reserves and Corridors	NCLWMA Area of Ecological Importance	Other Areas of Ecological Importance	Biology ACECs
Motorized	327 miles	303 miles	10 miles	39 miles
Nonmotorized	none	none	none	18 miles
Nonmechanized	none	38 miles	5 miles(including 4 miles pedestrian only)	none
Closed	70 miles	120 miles	21 miles	48 miles
Authorized Use Only	480 miles	31 miles	31 miles	257 miles

There would be 327 miles designated as motorized and 480 miles designated as authorized routes within reserves and corridors (Conserved Lands area of ecological importance). These routes contribute to the habitat disturbance within these zones and pose a risk of exceeding habitat disturbance thresholds of 10 percent of the reserves and 25 percent of the corridors. The designation of authorized routes in the Lokern-Buena Vista and Kettleman areas would reduce the

likelihood of route proliferation and the potential for vehicle strikes on listed animal species. Authorized users (e.g., oil company employees and their contractors) are required to participate in endangered species training, are subject to slow vehicle speeds, are not allowed to travel cross-country except with special authorization and biological monitors, and are regulated to comply with state and federal endangered species laws. These measures are designed to help limit habitat disturbance and to maintain land uses that would contribute to the recovery of some of the San Joaquin Valley listed species.

The route designations in the Temblor-Caliente and Monache-Walker Pass NCLWMAs(area of ecological importance) would designate 492 miles for motorized travel and close some routes (120 miles) to the public. The lower amount of travel and possible rehabilitation on closed routes would protect biological resources. In the Temblor Range and in the Monache-Walker Pass NCLWMAs near the Isabella Lake communities, the existing routes and increasing level of OHV travel would result in greater impacts on biological resources. Recent trends suggest that routes would likely proliferate, notwithstanding the BLM's management actions to encourage travel only on designated routes. This would further degrade habitat for biological resources in these NCLWMA areas.

There would be 67 miles of routes in other areas of ecological importance and 362 miles of routes in ACECs designated for biological resources. Approximately 357 miles would be closed or restricted to Authorized Access which would maintain habitat quality and help deter route proliferation in the Ancient Lakeshores, Atwell Island, Compensation Lands, Conserved Lands, Cypress Mountain, Cyrus Canyon, Deer Spring, Erskine Creek, Hopper Mountain, Irish Hills, Kaweah, Kettleman Hills, Lokern-Buena Vista, NCLWMA(s), Pt. Sal, Rusty Peak, Salinas, Tierra Redonda, and Upper Cuyama Valley areas.

Approximately 162,260 acres would be closed to oil and gas leasing which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources in these areas. This includes the Bitter Creek, Blue Ridge, Deer Spring, Erskine Creek, and Piute Cypress areas.

Ancient Lakeshores, Compensation Lands, and Tierra Redonda would be leased with an NSO stipulation to protect biological resources. The NSO stipulation prohibits any surface disturbance on the lease surface.

Split estate with surface managed by another entity as compensation for biological resources would be leased with a CSU stipulation. This CSU would allow the BLM to move, delay, and even prohibit surface-disturbing activities on all or a portion of the lease, if necessary, to reduce impacts on biological resources to an acceptable level.

Public land adjacent to or within the boundary of the Chimineas Unit of the Carrizo Ecological Reserve would be leased with a CSU stipulation. This CSU would allow the BLM to move, delay, and even prohibit surface-disturbing activities on all or a portion of the lease, if necessary, to reduce impacts on biological resources to an acceptable level.

Approximately 820,000 acres would be available for solid mineral leasing and solid mineral material disposal which could result in impacts to species, populations and habitats biological resources due to surface disturbance and potential interactions between mineral activities and biological resources. 29,050 acres would be proposed for withdrawal from mineral entry which would eliminate surface disturbance, introduction and spread of weeds, and potential for interactions between mineral activities and biological resources in these areas. Four ERMAs covering 167,320 acres would be designated. The Atwell Island, Chimney Peak and Fresno River ERMAs would emphasize primitive and low impacts activities such as wildlife viewing, environmental interpretation, camping, and hiking. Managing the Chimney Peak as an ERMA would have little effect on biological resources since it receives low levels of visitation and does not contain high concentrations of sensitive biological resources. A large portion of Chimney Peak is also designated wilderness, which incidentally protects biological resources. Managing Atwell Island and Fresno River as ERMAs will protect biological resources, such as wetland and riparian habitat, by promoting environmental education and restricting access and certain activities. The Case Mountain ERMA would emphasize non-motorized activities, such as mountain biking, camping, and hunting. Managing and maintaining mountain bike trails could result in accelerated erosion, loss of soil, habitat fragmentation and alter water flow patterns across the landscape. If trails result in unacceptable levels of impacts, however, they could be rerouted and restored.

Three SRMAs covering 45,240 acres would be designated. The San Joaquin River Gorge and Keyesville SRMAs would be maintained, and one new SRMA, Temblor, is proposed. The North Fork of the Kaweah SRMA would be discontinued which would eliminate concentrated use of the riparian areas that SRMA management encouraged. Riparian habitat at Cherry Falls and Advance would be allowed to recover and wildlife would make more use of the area in the absence of concentrated and frequent human use.

Managing lands as SRMAs could encourage additional use of these lands and increase disturbance to biological resources. Although SRMAs concentrate and manage recreational use, they can attract more initial and repeat visitation due to outreach efforts and the amenities provided. Focused management, monitoring, and corrective actions may reduce some impacts on biological resources that result from the increased visitation that SRMA designation generates but may not mitigate all of the effects. For example, existing SRMAs are listed on BLM Web pages and recreation maps, making the public more likely to visit SRMAs. Providing and maintaining facilities, such as toilets, trash receptacles, information kiosks, trails, parking areas, and boat launch sites, may manage recreation use but also promotes initial and repeat visitation. The outreach and amenities associated with SRMAs increase visitation above what it would be without the SRMA designation. Increased visitation results in increased impacts on biological resources, such as surface disturbance, vegetation collecting, and displacement of wildlife due to humans and pets.

The magnitude of impacts on biological resources from SRMAs depends on the primary activities emphasized by the SRMA, public demand for those activities, and whether the geographic location overlaps with sensitive biological resources. For example, a SRMA, such as the San Joaquin River

Gorge, that emphasizes environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities in an area with few sensitive biological resources, and multiple options for meeting the recreational demand, may have little impact on biological resources. The many options provided by other entities, such as the Forest Service or NPS, results in a low demand for the BLM site, low levels of use, and a low impact on biological resources. In contrast, a SRMA, such as the Temblor SRMA, that emphasizes dispersed camping, OHV trail riding and touring, and hunting in an area that contains sensitive biological resources and few opportunities for meeting the large demand, may have greater impact on biological resources. If the demand and subsequent increase in use is greater than BLM resources can manage, even under a SRMA, surface disturbance, displacement of wildlife, vehicle strikes, and destruction of burrows and vegetation may substantially reduce habitat quality over an extensive amount of the Temblor Range adjacent to the Carrizo Plain National Monument.

The San Joaquin River Gorge SRMA would emphasize environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities. The environmental outreach component could reduce impacts on biological resources from recreational use. The Keyesville SRMA would emphasize rafting, kayaking, recreational prospecting, camping, fishing, trail use, cultural/historical discovery. The Temblor SRMA would emphasize dispersed camping, touring, trail riding, and hunting.

The most increase in impacts would be expected in the new Temblor SRMA where new facilities and use areas would be developed. This increase would have direct and indirect effects on the San Joaquin Valley suite of special status species that inhabit the Temblor Range due to increased habitat and human disturbance at recreation sites, higher use of the road network that would result in vehicle strikes, and a likely proliferation of unauthorized roads and cross county travel. The increase in activity would also increase the production of dust and route proliferation, further degrading vegetation and increasing the opportunity for the introduction and spread of weeds.

Within the Keyesville SRMA impacts from dispersed camping, trail riding, parking, gold panning, water based activities would continue in much of the area. Within the Dam RMZ the removal of camping along the river would allow riparian vegetation to become established and reduce interaction between humans and wildlife in the riparian area. Dispersed camping and parking in the blue oak and grey pine woodland would continue to compact soils and damage tree roots, eventually killing the tree. These dead trees then become a hazard and must be removed, eliminating important wildlife habitat features. Continued use of trails by motorized vehicles and mountain bikes would result in accelerated erosion along the route, trail widening, and proliferation of additional routes which degrades habitat. Concentrated and prolonged recreational use, such as group camping and parking, and multiple day visits, tramples vegetation and displaces wildlife.

Within the San Joaquin River Gorge, recreation use is concentrated at established facilities and along existing trails, with few instances of new disturbances or unauthorized routes. Since motorized trail riding is not a targeted recreational activity, accelerated erosion, trail widening and proliferation of

routes would not occur. The steep topography, dense vegetation, and focus on environmental outreach results in low impact activities that generally maintains the habitat quality.

4.2.4 IMPACT OF ALTERNATIVE C

Approximately 108,377 acres of ACEC in 22 areas would be designated. This includes 100,897 acres in 19 ACECs specifically to protect biological resources, including habitat for 124 special status species. This includes 11 federally listed animal and 12 listed plant species. Three ACECs, Erskine Creek, Kaweah and Salinas River with 32,664 acres, include riparian objectives. Atwell Island, Deer Spring, Caliente Creek, Frog Pond, NWLWMA(s), South Fork of the Kern River, Table Mountain and Kennedy Table, and Conserved Lands would be identified as areas of ecological importance.

Designation of special areas with high biological value as ACECs and areas of ecological importance would establish management objectives and use restrictions that would help protect important biological resources from human activities and would result in the long-term maintenance of high-quality habitat across the landscapes where BLM lands occur.

Use restrictions, such as closing 75,190 acres to camping and campfires, 236,110 acres to the discharge of firearms, and 69,030 acres to equestrian use would reduce damage to vegetation and soils, fragmentation of habitat, disruption of essential animal behaviors, wildfire ignitions, and loss of woody materials which would help maintain suitable habitat to conserve species and populations in areas of ecological importance, ACECs, and where priority communities, habitats, and species occur.

Approximately 54,600 acres would be recommended for closure to hunting. This would allow animals to use these areas without risk of mortality and harassment from hunting. Certain areas, such as the Atwell Island wetlands, would function as an important regional wildlife sanctuary because it would be closed to hunting.

Disturbance within the Conserved Lands area of ecological importance will be managed not to exceed 10% in reserve areas and 25% in corridor areas. In addition, certain areas outside the reserve and corridor system may be managed as corridors if they were to contain high quality habitat for special status species. This would maintain species populations and habitats on BLM lands within the San Joaquin Valley and would contribute to special status species conservation and recovery over the long term and at the landscape level.

Release of un-retrieved nonnative animals would be limited to approved biocontrol agents, authorized livestock, and augmentation of naturalized species in accordance with a CDFG permit or plan. Release of nonnative animals may result in negative effects (such as competition, predation, habitat destruction, disease transmission, hybridization) from nonnative species to native plants and animals. Release of approved biocontrol agents, authorized livestock and augmentation of naturalized species with a CDFG permit or plan, would be subject to a high level of environmental review and are not expected to result in undesirable impacts.

Prohibiting collection of all dead and down woody material would retain the limited amount of woody debris that is important for nutrient cycling, soil development, wildlife habitat.

Mineral estate with no significant fluid mineral potential could be available for disposal. Disposed mineral estate would no longer be subject to the BLM's protective laws, regulations, and policies which protect biological resources.

Approximately 158,050 acres would be ROW avoidance areas, and 151,410 acres are ROW exclusion areas which would limit surface disturbance and reduce habitat degradation, fragmentation, and loss. Most of these avoidance and exclusion areas are within ACECs, NLCS units, lands with wilderness characteristics and Wild and Scenic River Corridors where biological resources already receive direct or incidental protection. ROW avoidance and exclusion areas provide complementary protection to biological resources in these areas. In addition SRMAs, VRM Class I and II areas, ACECs, NLCS units, cultural sites eligible for the National Register of Historic Places and critical habitat would be exclusion areas for utility scale renewable energy Rights-of-ways which would prevent large scale habitat modification from renewable energy development.

Approximately 322,200 acres would be available for livestock grazing and 72,700 would be unavailable. Livestock grazing in areas available for such use would be conducted in a manner as to meet or exceed the minimum Standards of Rangeland Health. This management would result in the maintenance or attainment of healthy rangelands by ensuring that the four fundamentals of watersheds, ecological processes, water quality, and habitats for special status species are functioning and in order.

In addition 7,800 acres would be available only for the purposes of vegetation management in the Atwell Island area of ecological importance. This would allow livestock to be used to remove vegetation so that height and cover is suitable for species such as horned lizards, mountain plovers, San Joaquin kit fox and Tipton kangaroo rats.

Specific livestock grazing management guidelines would prescribe minimum annual mulch levels and seasonal restrictions for saltbush scrub within the grazed areas of the planning area. These guidelines help reduce damage to biological resources, habitats and sensitive communities over the long term.

Known riparian areas would not be grazed which would prevent grazing impacts, such as trampling and consumption of vegetation, trampling of stream banks, introduction of weedy species, within most riparian areas. Riparian areas are disproportionately more important to wildlife because of the presence of water, diversity of plant species and structure, and abundance of food. Riparian areas that have not been inventoried could be inadvertently grazed, and depending on the season and level of use, become degraded.

Additional livestock management guidelines would take into account specific species requirements for grazing in areas known to contain special status species. The locations of most special status animals are generally known within the decision area; therefore, implementing this special livestock

management guideline would conserve special status animal populations on public land. In contrast, the locations of special status plant populations are not well known due to a lack of inventory and the difficulty in detecting many species. This is especially true for annual species because their ephemeral nature makes them difficult to detect, and population densities vary year to year. Implementing this special guideline may not protect most special status plant species since their locations are not well known, and grazing has been identified as a threat to most species. In addition, it can be difficult to identify a rare annual species in an area where the vegetation has been grazed.

Areas supporting some special status species would be grazed only in a manner that either has no impact or enhances habitat. For example, areas supporting Kern primrose sphinx moth would not be grazed.

Livestock grazing would be curtailed within the boundaries of the Cyrus Canyon ACEC and eliminate impacts from livestock on populations of Kelso Creek monkeyflower. The diminutive monkeyflower would no longer be subject to trampling or other negative impacts from livestock, soil crusts would be given a chance to restore naturally, untrammeled habitat would be available for the normal fluctuation of population boundaries, and there would be less chance for the establishment and spread of weedy species.

Approximately 166,300 acres would be closed to OHV, including Granite Cave, Los Osos, Pt. Sal, a portion of the Kaweah ACEC, designated wilderness areas, Wilderness Study Areas, and the Pacific Crest National Scenic Trail corridor. This would protect biological resources in these areas. The remaining 237,780 acres of the decision area would be designated as limited to OHV use, with impacts on designated routes. Some illegal user-made routes would proliferate in native habitats, which would reduce habitat quality for biological resources.

Of the 1,937 miles of routes in the travel network, approximately 656 miles of routes would be designated as motorized, 580 miles as closed and 617 miles as authorized use. This includes 238 miles of oil field roads which would be designated as authorized access. Eliminating recreation travel on these roads would reduce vehicle traffic and reduce the potential for disturbance from vehicle noise/human interaction, noxious weed or undesired nonnative species introduction, and mortality from vehicle strikes. Habitat could be restored on approximately 580 miles of closed routes. Table 4.2-2 displays the miles of routes by designation that cross areas with special biological resource concerns.

Table 4.2-2
Alternative C Route Designations in Areas with Special Biological Resource Concerns

Route Designation	Conserved Lands Area of Ecological Importance Reserves and Corridors	NCLWMA Area of Ecological Importance	Other Areas of Ecological Importance	Biology ACECs
Motorized	253 miles	225 miles	6 miles	41 miles
Nonmotorized	none	none	none	26 miles
Nonmechanized	none	38 miles	5 miles (including 4 miles pedestrian only)	Less than 1 mile
Closed	270 miles	202 miles	20 miles	206 miles
Authorized Use Only	354 miles	27 miles	24 miles	101 miles

There would be 607 miles of motorized and authorized miles of authorized routes within reserves and corridors (Conserved Lands area of ecological importance). Motorized routes contribute to the habitat disturbance within these zones and pose a risk of exceeding habitat disturbance thresholds of 10 percent of the reserves and 25 percent of the corridors. The designation of authorized routes in the Lokern-Buena Vista and Kettleman areas would reduce the likelihood of route proliferation and the potential for vehicle strikes on listed animal species. Authorized users (e.g., oil company employees and their contractors) are required to participate in endangered species training, are subject to slow vehicle speeds, are not allowed to travel cross-country except with special authorization and biological monitors, and are regulated to comply with state and federal endangered species laws. These measures are designed to help limit habitat disturbance and to maintain land uses that would contribute to the recovery of some of the San Joaquin Valley listed species. These measures may help to limit habitat disturbance and maintain land uses that would contribute to the recovery of some of the San Joaquin Valley listed species.

The route designations in the Temblor-Caliente and Monache-Walker Pass NCLWMAs (NCLWMA area of ecological importance) would close some routes (202 miles) to the public and would maintain 225 miles for motorized travel. The route closures would improve habitat quality for biological resources in the Temblor Range and Monache-Walker Pass NCLWMA in the Chimney Creek and Long Valley areas. Notwithstanding the BLM's management actions to encourage travel only on designated routes, recent trends suggest that routes would continue to proliferate in the Temblor Range and areas near Isabella Lake communities. This would further degrade habitat for biological resources in these NCLWMA areas.

There would be 55 miles of routes in other areas of ecological importance and 374 miles of routes in ACECs designated for biological resources. Of this 351 miles would be closed or restricted to Authorized Access which would maintain habitat quality and help deter route proliferation in the Ancient Lakeshores, Atwell Island, Compensation Lands, Conserved Lands, Cypress Mountain, Cyrus Canyon, Deer Spring, Erskine Creek, Hopper Mountain, Irish Hills, Kaweah, Kettleman Hills,

Lokern-Buena Vista, NCLWMA(s), Pt. Sal, Rusty Peak, Tierra Redonda, and Upper Cuyama Valley areas.

Approximately 196,050 acres would be closed to oil and gas leasing which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources in these areas. This includes Bitter Creek, Blue Ridge, Chimineas Unit, Compensation Lands, Deer Spring, Erskine Creek, Piute Cypress, and split estate with surface managed by another entity as compensation for biological resources.

Ancient Lakeshores, Hopper Mountain, Tierra Redonda would be leased with an NSO stipulation to protect biological resources, including condors. The NSO stipulation prohibits any surface disturbance on the lease surface.

Approximately 780,000 solid mineral material disposal which could result in impacts to species, populations and habitats biological resources due to surface disturbance and potential interactions between mineral activities and biological resources. No acres would be available for solid mineral leasing and 62,670 acres would be proposed for withdrawal from mineral entry which would eliminate surface disturbance, introduction and spread of weeds, and potential for interactions between mineral activities and biological resources in these areas.

Four ERMAs covering 190,910 acres would be designated. Atwell Island and Chimney Peak ERMAs would emphasize primitive and low impacts activities such as wildlife viewing, environmental interpretation, camping, and hiking. Managing the Chimney Peak as an ERMA would have little effect on biological resources since it receives low levels of visitation and does not contain high concentrations of sensitive biological resources. A large portion of Chimney Peak is also designated wilderness, which incidentally protects biological resources. Managing Atwell Island as ERMA will protect biological resources, such as wetland habitat, by promoting environmental education and restricting access and certain activities. The Case Mountain ERMA would emphasize non-motorized activities, such as mountain biking, camping, and hunting. Managing and maintaining mountain bike trails could result in accelerated erosion, loss of soil, habitat fragmentation and alter water flow patterns across the landscape. If trails result in unacceptable levels of impacts, however, they could be rerouted and restored. The Temblor ERMA will emphasize dispersed activities, such as trail riding, hunting, and camping. Existing impacts to biological resources, such as displacement of wildlife, vehicle strikes, destruction of burrows and vegetation, production of dust, route proliferation, and the introduction and spread of weeds are expected to continue.

Two SRMAs covering 21,490 acres would be managed as SRMAs. The San Joaquin River Gorge and Keyesville SRMAs would be maintained. The North Fork of the Kaweah SRMA would be discontinued which would eliminate concentrated use of the riparian areas that SRMA management encouraged. Riparian habitat at Cherry Falls and Advance would be allowed to recover and wildlife would make more use of the area in the absence of concentrated and frequent human use.

The San Joaquin River Gorge SRMA would emphasize environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities. The environmental outreach component could reduce impacts on biological resources from recreational use. The Keyesville SRMA would emphasize rafting, kayaking, recreational prospecting, camping, fishing, trail use, cultural/historical discovery.

Within the Keyesville SRMA impacts from dispersed camping, trail riding, parking, gold panning, water based activities would continue in much of the area. Within the Dam RMZ the removal of camping along the river would allow riparian vegetation to become established and reduce interaction between humans and wildlife in the riparian area. Dispersed camping and parking in the blue oak and grey pine woodland would continue to compact soils and damage tree roots, eventually killing the tree. These dead trees then become a hazard and must be removed, eliminating important wildlife habitat features. Continued use of trails by motorized vehicles and mountain bikes would result in accelerated erosion along the route, trail widening, and proliferation of additional routes which degrades habitat. Concentrated and prolonged recreational use, such as group camping and parking, and multiple day visits, tramples vegetation and displaces wildlife.

Within the San Joaquin River Gorge, recreation use is concentrated at established facilities and along existing trails, with few instances of new disturbances or unauthorized routes. Since motorized trail riding is not a targeted recreational activity, accelerated erosion, trail widening and proliferation of routes would not occur. The steep topography, dense vegetation, and focus on environmental outreach results in low impact activities that generally maintains the habitat quality.

4.2.5 IMPACT OF ALTERNATIVE D

Approximately 108,377 acres of ACEC in 22 areas would be designated. This includes 100,897 acres in 19 ACECs specifically to protect biological resources, including habitat for 124 special status species. This includes 11 federally listed animal and 12 listed plant species. Three ACECs, Erskine Creek, Kaweah and Salinas River with 32,664 acres, include riparian objectives. Atwell Island, Deer Spring, Caliente Creek, Frog Pond, NWLWMA(s), South Fork of the Kern River, Table Mountain and Kennedy Table, and Conserved Lands would be identified as areas of ecological importance.

Designation of special areas with high biological value as ACECs and areas of ecological importance would establish management objectives and use restrictions that would help protect important biological resources from human activities and would result in the long-term maintenance of high-quality habitat across the landscapes where BLM lands occur.

Use restrictions, such as closing 75,190 acres to camping and campfires, 236,110 acres to the discharge of firearms, and 69,030 acres to equestrian use would reduce damage to vegetation and soils, fragmentation of habitat, disruption of essential animal behaviors, wildfire ignitions, and loss of woody materials which would help maintain suitable habitat to conserve species and populations in areas of ecological importance, ACECs, and where priority communities, habitats, and species occur.

Approximately 54,600 acres would be recommended for closure to hunting. This would allow animals to use these areas without risk of mortality and harassment from hunting. Certain areas, such as the Atwell Island wetlands, would function as an important regional wildlife sanctuary because it would be closed to hunting.

Disturbance within the Conserved Lands area of ecological importance will be managed not to exceed 10% in reserve areas and 25% in corridor areas. In addition, certain areas outside the reserve and corridor system may be managed as corridors if they were to contain high quality habitat for special status species. This would maintain species populations and habitats on BLM lands within the San Joaquin Valley and would contribute to special status species conservation and recovery over the long term and at the landscape level.

Release of un-retrieved nonnative animals would be limited to approved biocontrol agents, authorized livestock, and augmentation of naturalized species in accordance with a CDFG permit or plan. Release of nonnative animals may result in negative effects (such as competition, predation, habitat destruction, disease transmission, hybridization) from nonnative species to native plants and animals. Release of approved biocontrol agents, authorized livestock and augmentation of naturalized species with a CDFG permit or plan, would be subject to a high level of environmental review and are not expected to result in undesirable impacts.

Prohibiting collection of all dead and down woody material would retain the limited amount of woody debris that is important for nutrient cycling, soil development, wildlife habitat.

Mineral estate with no significant fluid mineral potential could be available for disposal. Disposed mineral estate would no longer be subject to the BLM's protective laws, regulations, and policies which protect biological resources.

Approximately 158,050 acres would be ROW avoidance areas, and 151,410 acres are ROW exclusion areas which would limit surface disturbance and reduce habitat degradation, fragmentation, and loss. Most of these avoidance and exclusion areas are within ACECs, NLCS units, lands with wilderness characteristics and Wild and Scenic River Corridors where biological resources already receive direct or incidental protection. ROW avoidance and exclusion areas provide complementary protection to biological resources in these areas. In addition SRMAs, VRM Class I and II areas, ACECs, NLCS units, cultural sites eligible for the National Register of Historic Places and critical habitat would be exclusion areas for utility scale renewable energy Rights-of-ways which would prevent large scale habitat modification from renewable energy development.

Livestock grazing would be discontinued in the grazing decision area. The effects of livestock grazing, such as trampling, herbivory, mechanical damage, deposition of urine and manure, and dispersal of weed seeds, would no longer occur from authorized grazing use. Soil surfaces would be less disturbed, and less prone to erosion. Soil crusts would become more developed and protect soil surfaces and deter weedy species. Plant vigor, reproduction, cover, and native species diversity would increase. Overall plant community structure and ecosystem health would improve.

An increase in the diversity of vegetation structure would improve habitat conditions for many animal species. More forage, seed, water and other resources would be available to native wildlife. Changes in vegetation structure such as height and foliar density would result in improved habitat for nesting, foraging, and predator avoidance. Burrows, nests, and small sedentary animals would not be trampled.

Riparian areas would not be grazed by livestock and impacts such as trampling and consumption of vegetation, trampling of stream banks, and introduction of weedy species as a result of authorized grazing use would no longer occur. Riparian areas are disproportionately more important to wildlife because of the presence of water, the diversity of plant species and structure, and the abundance of food.

Animal species, including special status animal species that benefit from some level of livestock grazing, may be impacted by the elimination of livestock grazing. Without livestock grazing, rainfall patterns in certain years may result in persistent herbaceous vegetation that reduces habitat quality for these species.

An indirect impact is that an estimated 1,000 miles of fence would need to be constructed. Fence construction may damage vegetation, collapse burrows, disturb the soil surface, provide perches for predators, and act as a barrier for certain wildlife.

Approximately 166,300 acres would be closed to OHV, including Granite Cave, Los Osos, Point Sal, a portion of the Kaweah ACEC, designated wilderness areas, Wilderness Study Areas, and the Pacific Crest National Scenic Trail corridor. This would protect biological resources in these areas. The remaining 237,780 acres of the decision area would be designated as limited to OHV use, with impacts on designated routes. Some illegal user-made routes would proliferate in native habitats, which would reduce habitat quality for biological resources.

Of the 1,937 miles of routes in the travel network, approximately 656 miles of routes would be designated as motorized, 580 miles as closed and 617 miles as authorized use. This includes 238 miles of oil field roads which would be designated as authorized access. Eliminating recreation travel on these roads would reduce vehicle traffic and reduce the potential for disturbance from vehicle noise/human interaction, noxious weed or undesired nonnative species introduction, and mortality from vehicle strikes. Habitat could be restored on approximately 580 miles of closed routes. Table 4.2-3 displays the miles of routes by designation that cross areas with special biological resource concerns.

Table 4.2-3
Alternative D Route Designations in Areas with Special Biological Resource Concerns

Route Designation	Conserved Lands Area of Ecological Importance Reserves and Corridors	NCLWMA Area of Ecological Importance	Other Areas of Ecological Importance	Biology ACECs
Motorized	253 miles	225 miles	6 miles	41 miles
Nonmotorized	none	none	none	26 miles
Nonmechanized	none	38 miles	5 miles (including 4 miles pedestrian only)	Less than 1 mile
Closed	270 miles	202 miles	20 miles	206 miles
Authorized Use Only	354 miles	27 miles	24 miles	101 miles

There would be 607 miles of motorized and authorized miles of authorized routes within reserves and corridors (Conserved Lands area of ecological importance). Motorized routes contribute to the habitat disturbance within these zones and pose a risk of exceeding habitat disturbance thresholds of 10 percent of the reserves and 25 percent of the corridors. The designation of authorized routes in the Lokern-Buena Vista and Kettleman areas would reduce the likelihood of route proliferation and the potential for vehicle strikes on listed animal species. Authorized users (e.g., oil company employees and their contractors) are required to participate in endangered species training, are subject to slow vehicle speeds, are not allowed to travel cross-country except with special authorization and biological monitors, and are regulated to comply with state and federal endangered species laws. These measures are designed to help limit habitat disturbance and to maintain land uses that would contribute to the recovery of some of the San Joaquin Valley listed species. These measures may help to limit habitat disturbance and maintain land uses that would contribute to the recovery of some of the San Joaquin Valley listed species.

The route designations in the Temblor-Caliente and Monache-Walker Pass NCLWMAs (NCLWMA area of ecological importance) would close some routes (202 miles) to the public and would maintain 225 miles for motorized travel. The route closures would improve habitat quality for biological resources in the Temblor Range and Monache-Walker Pass NCLWMA in the Chimney Creek and Long Valley areas. Notwithstanding the BLM's management actions to encourage travel only on designated routes, recent trends suggest that routes would continue to proliferate in the Temblor Range and areas near Isabella Lake communities. This would further degrade habitat for biological resources in these NCLWMA areas.

There would be 55 miles of routes in other areas of ecological importance and 374 miles of routes in ACECs designated for biological resources. Of this 351 miles would be closed or restricted to Authorized Access which would maintain habitat quality and help deter route proliferation in the Ancient Lakeshores, Atwell Island, Compensation Lands, Conserved Lands, Cypress Mountain, Cyrus Canyon, Deer Spring, Erskine Creek, Hopper Mountain, Irish Hills, Kaweah, Kettleman Hills,

Lokern-Buena Vista, NCLWMA(s), Pt. Sal, Rusty Peak, Tierra Redonda, and Upper Cuyama Valley areas.

Approximately 196,050 acres would be closed to oil and gas leasing which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources in these areas. This includes Bitter Creek, Blue Ridge, Chimineas Unit, Compensation Lands, Deer Spring, Erskine Creek, Piute Cypress, and split estate with surface managed by another entity as compensation for biological resources.

Ancient Lakeshores, Hopper Mountain, Tierra Redonda would be leased with an NSO stipulation to protect biological resources, including condors. The NSO stipulation prohibits any surface disturbance on the lease surface.

Approximately 780,000 solid mineral material disposal which could result in impacts to species, populations and habitats biological resources due to surface disturbance and potential interactions between mineral activities and biological resources. No acres would be available for solid mineral leasing and 62,670 acres would be proposed for withdrawal from mineral entry which would eliminate surface disturbance, introduction and spread of weeds, and potential for interactions between mineral activities and biological resources in these areas.

Four ERMAs covering 190,910 acres would be designated. Atwell Island and Chimney Peak ERMAs would emphasize primitive and low impacts activities such as wildlife viewing, environmental interpretation, camping, and hiking. Managing the Chimney Peak as an ERMA would have little effect on biological resources since it receives low levels of visitation and does not contain high concentrations of sensitive biological resources. A large portion of Chimney Peak is also designated wilderness, which incidentally protects biological resources. Managing Atwell Island as ERMA will protect biological resources, such as wetland habitat, by promoting environmental education and restricting access and certain activities. The Case Mountain ERMA would emphasize non-motorized activities, such as mountain biking, camping, and hunting. Managing and maintaining mountain bike trails could result in accelerated erosion, loss of soil, habitat fragmentation and alter water flow patterns across the landscape. If trails result in unacceptable levels of impacts, however, they could be rerouted and restored. The Temblor ERMA will emphasize dispersed activities, such as trail riding, hunting, and camping. Existing impacts to biological resources, such as displacement of wildlife, vehicle strikes, destruction of burrows and vegetation, production of dust, route proliferation, and the introduction and spread of weeds are expected to continue.

Two SRMAs covering 21,490 acres would be managed as SRMAs. The San Joaquin River Gorge and Keyesville SRMAs would be maintained. The North Fork of the Kaweah SRMA would be discontinued which would eliminate concentrated use of the riparian areas that SRMA management encouraged. Riparian habitat at Cherry Falls and Advance would be allowed to recover and wildlife would make more use of the area in the absence of concentrated and frequent human use.

The San Joaquin River Gorge SRMA would emphasize environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities. The environmental outreach component could reduce impacts on biological resources from recreational use. The Keyesville SRMA would emphasize rafting, kayaking, recreational prospecting, camping, fishing, trail use, cultural/historical discovery.

Within the Keyesville SRMA impacts from dispersed camping, trail riding, parking, gold panning, water based activities would continue in much of the area. Within the Dam RMZ the removal of camping along the river would allow riparian vegetation to become established and reduce interaction between humans and wildlife in the riparian area. Dispersed camping and parking in the blue oak and grey pine woodland would continue to compact soils and damage tree roots, eventually killing the tree. These dead trees then become a hazard and must be removed, eliminating important wildlife habitat features. Continued use of trails by motorized vehicles and mountain bikes would result in accelerated erosion along the route, trail widening, and proliferation of additional routes which degrades habitat. Concentrated and prolonged recreational use, such as group camping and parking, and multiple day visits, tramples vegetation and displaces wildlife.

Within the San Joaquin River Gorge, recreation use is concentrated at established facilities and along existing trails, with few instances of new disturbances or unauthorized routes. Since motorized trail riding is not a targeted recreational activity, accelerated erosion, trail widening and proliferation of routes would not occur. The steep topography, dense vegetation, and focus on environmental outreach results in low impact activities that generally maintains the habitat quality.

4.2.6 IMPACT OF ALTERNATIVE E

Approximately 75,050 acres of ACEC in 12 areas would be designated. This includes 75,050 acres in 12 ACECs specifically to protect biological resources, including habitat for 57 special status species. This includes eight federally listed animals and eight listed plants. Two ACECs, Erskine Creek and Kaweah, with 31,060 acres, include riparian objectives.

Atwell Island, Deer Spring, Caliente Creek, Frog Pond, NWLWMA(s), South Fork of the Kern River, Table Mountain and Kennedy Table, Conserved Lands, Cypress Mountain, Cyrus Canyon, Irish Hills, Rusty Peak, Salinas River, Tierra Redonda and Upper Cuyama Valley would be identified as areas of ecological importance.

Designation of special areas with high biological value as ACECs and areas of ecological importance would establish management objectives and use restrictions that would help protect important biological resources from human activities and would result in the long-term maintenance of high-quality habitat across the landscapes where BLM lands occur.

Use restrictions, such as closing 20,360 acres to overnight camping and campfires, 174,800 acres to the discharge of firearms, and 22,710 acres to equestrian use would reduce damage to vegetation and soils, fragmentation of habitat, disruption of essential animal behaviors, wildfire ignitions, and loss of woody materials which would help maintain suitable habitat to conserve species and populations

in areas of ecological importance, ACECs, and where priority communities, habitats, and species occur.

Approximately 7,010 acres would be recommended for closure to hunting. This would allow animals to use these areas without risk of mortality or harassment from hunting. Certain areas, such as the Atwell Island wetlands, would function as an important regional wildlife sanctuary because it would be closed to hunting.

Disturbance within the Conserved Lands area of ecological importance will be managed not to exceed 10% in reserve areas and 25% in corridor areas. This would maintain species populations and habitats on BLM lands within the San Joaquin Valley and would contribute to special status species conservation and recovery over the long term and at the landscape level. High quality habitat outside the reserve and corridor system would not be subject to disturbance limits. These areas could be degraded or lost, reducing their conservation value.

Release of un-retrieved nonnative animals would be limited to approved biocontrol agents, authorized livestock, and for recreational purposes and augmentation of naturalized species in accordance with a CDFG permit or plan. Release of nonnative animals may result in negative effects (such as competition, predation, habitat destruction, disease transmission, hybridization) from nonnative species to native plants and animals. Release of approved biocontrol agents, authorized livestock and augmentation of naturalized species with a CDFG permit or plan, would be subject to a high level of environmental review and are not expected to result in undesirable impacts. Release of nonnative animals for recreational purposes may not receive the same level of environmental review prior to the issuance of a CDFG permit and are more likely to result in undesirable impacts.

Collection of dead and down woody material would be limited to less than 4 inches in diameter which would help retain large woody material that is important for nutrient cycling, soil development, wildlife habitat. Smaller diameter woody material would become depleted in concentrated use areas, such as Keyesville, Chimney Peak, Long Valley and Walker Pass. The loss of smaller diameter material may have a localized effect on some species.

Only mineral estate with no fluid mineral potential could be considered for disposal. Disposed mineral estate would no longer be subject to the BLM's protective laws, regulations, and policies which protect biological resources.

Approximately 96,200 acres would be ROW avoidance areas, and 121,300 acres are ROW exclusion areas which would limit surface disturbance and reduce habitat degradation, fragmentation, and loss. Most of these avoidance and exclusion areas are within ACECs, NLCS units, lands with wilderness characteristics and Wild and Scenic River Corridors where biological resources already receive direct or incidental protection. ROW avoidance and exclusion areas provide complementary protection to biological resources in these areas. Utility scale projects could be approved within ROW avoidance areas, including SRMAs, VRM Class I and II areas, ACECs, NLCS units, and could result in large

scale habitat modification from renewable energy development. Within ACECs, projects would only be authorized if they did not compromise ACEC values.

Approximately 345,800 acres would be available for livestock grazing and 49,100 acres would be unavailable. Livestock grazing in areas available for such use would be conducted in a manner as to meet or exceed the minimum Standards of Rangeland Health. This management would result in the maintenance or attainment of healthy rangelands by ensuring that the four fundamentals of watersheds, ecological processes, water quality, and habitats for special status species are functioning and in order.

In addition 7,800 acres would be available only for the purposes of vegetation management in the Atwell Island area of ecological importance. This would allow livestock to be used to remove vegetation to so that height and cover is suitable for species such as horned lizards, mountain plovers, San Joaquin kit fox and Tipton kangaroo rats.

Specific livestock grazing management guidelines would prescribe minimum annual mulch levels and seasonal restrictions for saltbush scrub and riparian areas within the grazed areas of the planning area. These guidelines help reduce damage to biological resources, habitats and sensitive communities over the long term.

Additional livestock management guidelines would take into account specific species requirements for grazing in areas known to contain special status species. The locations of most special status animals are generally known within the decision area; therefore, implementing this special livestock management guideline would conserve special status animal populations on public land. In contrast, the locations of special status plant populations are not well known due to a lack of inventory and the difficulty in detecting many species. This is especially true for annual species because their ephemeral nature makes them difficult to detect, and population densities vary year to year. Implementing this special guideline may not protect most special status plant species since their locations are not well known, and grazing has been identified as a threat to most species. In addition, it can be difficult to identify a rare annual species in an area where the vegetation has been grazed.

Livestock grazing would occur within the boundaries of the Cyrus Canyon area of ecological importance and some areas would be excluded from grazing to protect monkeyflower species. Although the known populations of monkeyflower would be protected from the impacts associated with livestock grazing, a number of issues would remain. As an annual species, monkeyflower's response to precipitation varies widely; population size during normal years may be only a fraction of the extent during less-frequent rainfall events. Population boundaries based on a few years sampling may not truly reflect the full extent of occupied habitat. Suitable, but not currently occupied, habitat would also not be protected. This is especially important in the light of anticipated climate change and the recognized need for sufficient habitat for plant populations to migrate in response. The current known population boundaries may be contracted due to the extensive grazing history in the area and reflect the limited number of surveys rather than the true extent of the species. Protecting only the known populations limits the ability of the species to colonize adjacent

suitable habitat and limits recovery. Having grazing adjacent to monkeyflower habitat also increases the chance of invasion from weedy species introduced and spread by livestock. Protecting only the known populations of the Kelso Creek monkeyflower does not adequately protect another co-occurring uncommon monkeyflower, the related *Mimulus androsaceus*.

Seventy acres in the Kelso Valley area would be open to OHV use. Vehicle use could occur over most or all of the 70 acres and would result in long-term habitat loss. Vegetation would be limited to small remnant areas between vehicle trails and subjected to the generation of dust that reduces plant photosynthesis and reproduction. Wildlife species capable of using small patches of habitat and tolerant of disturbance may be able to persist but would be at risk of vehicle strikes. Habitat quality on adjacent lands would be reduced due to impacts from dust generation. Animals in adjacent habitat would be displaced by human activity and noise in the open area. The potential for users of the open area to use adjacent areas could further reduce habitat quality.

Approximately 139,450 acres would be closed to OHV use, including Los Osos and Pt. Sal ACECs, designated wilderness areas, Wilderness Study Areas, and the Pacific Crest National Scenic Trail corridor, protecting biological resources in these areas. The remaining 264,560 acres of the decision are would be designated as limited to OHV use, with impacts on some routes. Some illegal user-made routes would proliferate in native habitats, which would reduce habitat quality for biological resources.

Of the 1,936 miles of routes in the travel network, 1,683 miles would be designated as motorized, 65 miles as closed, and 112 miles as authorized use. Designation as authorized access would eliminate recreation travel on these roads, reduce vehicle traffic, and reduce the potential for disturbance from vehicle noise/human interaction, noxious weed or undesired nonnative species introduction, and mortality from vehicle strikes. Habitat restoration could occur on only 65 miles of closed routes that could improve habitat for biological resources. The extensive amount of motorized designations, 1,683 miles, would reduce habitat quality for biological resources by creating surface disturbance and high potential for interactions between humans and biological resources, and provide extensive opportunities for the introduction and spread of weeds.

Table 4.2-4 displays the miles of routes by designation that cross areas with special biological resource concerns.

Table 4.2-4
Alternative E Route Designations in Areas with Special Biological Resource Concerns

Route Designation	Conserved Lands area of ecological importance Reserve and Corridors	NCLWMA area of ecological importance	Other Areas of Ecological Importance	Biology ACECs
Motorized	844miles	415 miles	67 miles	278 miles
Nonmotorized	none	none	none	18 miles
Nonmechanized	nonw	38 miles	5 miles (including 4 miles pedestrian only)	none
Closed	none	28 miles	none	3 miles
Authorized Use Only	33 miles	12 miles	10 miles	28 miles

There would be 844 miles of motorized routes within reserves and corridors (Conserved Lands area of ecological importance). This extent of motorized routes would encourage recreation use and would increase the likelihood of vehicle strikes on listed animal species. Extensive route proliferation is anticipated, although the BLM would attempt to limit travel to designated routes. Increasing trends in the number of motorists and user-made routes suggest that they would proliferate and that the habitat would become degraded from OHV cross-country travel and creation of user-made routes. This activity may preclude the conservation and recovery value of the BLM lands in the reserves and corridors.

The route designations in the Temblor-Caliente and Monache-Walker Pass NCLWMAs (NCLWMA area of ecological importance) would designate 415 miles for motorized travel and close some routes (28 miles) to the public. Possible rehabilitation on closed routes would protect biological resources. In the Temblor Range and in the Monache-Walker Pass NCLWMAs near the Isabella Lake communities, the existing routes and increasing level of OHV travel would result in greater impacts on biological resources. Recent trends suggest that routes would likely proliferate, notwithstanding the BLM's management actions to encourage travel only on designated routes. This would further degrade habitat for biological resources in these NCLWMA areas.

There would be 82 miles of routes in other areas of ecological importance and 327 miles of routes in ACECs designated for biological resources. Only 41 miles would be closed or restricted to Authorized Access which would maintain habitat quality and help deter route proliferation in the Cypress Mountain, Cyrus Canyon, Erskine Creek, Hopper Mountain, Irish Hills, Kaweah, NCLWMA(s), Pt. Sal, Rusty Peak, and Upper Cuyama Valley areas. The motorized designations in the Kettleman Hills, Lokern-Buena Vista, Ancient Lakeshores, Kaweah, Erskine Creek, and Cyrus Canyon ACECs, and the Atwell Island SMA would result in relatively high amounts of the impacts on biological resources described above. It is more likely that routes would proliferate in all areas accessible by the public. The extensive amount of motorized designations would reduce habitat quality for biological resources. This would increase threats to listed plant and animal species and

may increase the need to list some species, such as the Kelso Creek monkeyflower, whose habitat has been degraded from OHV impacts.

Approximately 149,200 acres would be closed to oil and gas leasing which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources in these areas. This includes the Blue Ridge, Deer Spring, Erskine Creek, and Piute Cypress areas which would eliminate surface disturbance and potential for interactions between oil field activities and biological resources, including condors, in these areas.

Ancient Lakeshores, Bitter Creek, and Tierra Redonda would be leased with an NSO stipulation to protect biological resources. The NSO stipulation prohibits any surface disturbance on the lease surface

Compensation Lands and split estate with surface managed by another entity as compensation for biological resources would be leased with a CSU stipulation. This CSU would allow the BLM to move, delay, and even prohibit surface-disturbing activities on all or a portion of the lease, if necessary, to reduce impacts on biological resources to an acceptable level

Approximately 900,000 acres would be available for solid mineral leasing and solid mineral material disposal which could result in impacts to species, populations and habitats biological resources due to surface disturbance and potential interactions between mineral activities and biological resources. 17,770 acres would be proposed for withdrawal from mineral entry which would eliminate surface disturbance, introduction and spread of weeds, and potential for interactions between mineral activities and biological resources in these areas.

Four ERMAs covering 47,270 acres would be designated. The Atwell Island and Fresno River ERMAs would emphasize primitive and low impacts activities such as wildlife viewing, environmental interpretation, camping, and hiking. Managing Atwell Island and Fresno River as ERMAs will protect biological resources, such as wetland and riparian habitat, by promoting environmental education and restricting access and certain activities. The Case Mountain ERMA would emphasize non-motorized activities, such as mountain biking, camping, and hunting. Managing and maintaining mountain bike trails could result in accelerated erosion, loss of soil, habitat fragmentation and alter water flow patterns across the landscape. If trails result in unacceptable levels of impacts, however, they could be rerouted and restored. The North Fork ERMA would emphasize fishing, hunting and water play from October through April. Prohibiting use during the hotter summer months when use tends to be concentrated in the riparian area would allow riparian habitat at Cherry Falls and Advance to recover, and wildlife to make more use of the area in the absence of concentrated and frequent human use.

Four SRMAs covering 168,690 acres would be designated. The San Joaquin River Gorge, Chimney Peak and Keyesville SRMAs would be maintained, and one new SRMA, Temblor, is proposed.

Managing lands as SRMAs could encourage additional use of these lands and increase disturbance to biological resources. Although SRMAs concentrate and manage recreational use, they can attract

more initial and repeat visitation due to outreach efforts and the amenities provided. Focused management, monitoring, and corrective actions may reduce some impacts on biological resources that result from the increased visitation that SRMA designation generates but may not mitigate all of the effects. For example, existing SRMAs are listed on BLM Web pages and recreation maps, making the public more likely to visit SRMAs. Providing and maintaining facilities, such as toilets, trash receptacles, information kiosks, trails, parking areas, and boat launch sites, may manage recreation use but also promotes initial and repeat visitation. The outreach and amenities associated with SRMAs increase visitation above what it would be without the SRMA designation. Increased visitation results in increased impacts on biological resources, such as surface disturbance, vegetation collecting, and displacement of wildlife due to humans and pets.

The magnitude of impacts on biological resources from SRMAs depends on the primary activities emphasized by the SRMA, public demand for those activities, and whether the geographic location overlaps with sensitive biological resources. For example, a SRMA, such as the San Joaquin River Gorge, that emphasizes environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities in an area with few sensitive biological resources, and multiple options for meeting the recreational demand, may have little impact on biological resources. The many options provided by other entities, such as the Forest Service or NPS, results in a low demand for the BLM site, low levels of use, and a low impact on biological resources. In contrast, a SRMA, such as the Temblor SRMA, that emphasizes dispersed camping, OHV trail riding and touring, and hunting in an area that contains sensitive biological resources and few opportunities for meeting the large demand, may have greater impact on biological resources. If the demand and subsequent increase in use is greater than BLM resources can manage, even under a SRMA, surface disturbance, displacement of wildlife, vehicle strikes, and destruction of burrows and vegetation may substantially reduce habitat quality over an extensive amount of the Temblor Range adjacent to the Carrizo Plain National Monument.

The San Joaquin River Gorge SRMA would emphasize environmental outreach, camping, hiking, mountain biking, horseback riding, and river-based activities. The environmental outreach component could reduce impacts on biological resources from recreational use. The Keyesville SRMA would emphasize rafting, kayaking, recreational prospecting, camping, fishing, trail use, cultural/historical discovery. The Chimney Peak SRMA would emphasize driving for pleasure, scenic viewing, wildlife viewing, camping, hunting, hiking, horseback riding. The Temblor SRMA would emphasize dispersed camping, touring, trail riding, and hunting.

The most increase in impacts would be expected in the new Temblor SRMA where new facilities and use areas would be developed. This increase would have direct and indirect effects on the San Joaquin Valley suite of special status species that inhabit the Temblor Range due to increased habitat and human disturbance at recreation sites, higher use of the road network that would result in vehicle strikes, and a likely proliferation of unauthorized roads and cross county travel. The increase in activity would also increase the production of dust and route proliferation, further degrading vegetation and increasing the opportunity for the introduction and spread of weeds.

Managing the Chimney Peak as an SRMA would have little effect on biological resources since it receives low levels of visitation and does not contain high concentrations of sensitive biological resources. A large portion of Chimney Peak is also designated wilderness, which incidentally protects biological resources.

Within the Keyesville SRMA impacts from dispersed camping, trail riding, parking, gold panning, water based activities would continue in much of the area. Within the Dam RMZ the removal of camping along the river would allow riparian vegetation to become established and reduce interaction between humans and wildlife in the riparian area. Dispersed camping and parking in the blue oak and grey pine woodland would continue to compact soils and damage tree roots, eventually killing the tree. These dead trees then become a hazard and must be removed, eliminating important wildlife habitat features. Continued use of trails by motorized vehicles and mountain bikes would result in accelerated erosion along the route, trail widening, and proliferation of additional routes which degrades habitat. Concentrated and prolonged recreational use, such as group camping and parking, and multiple day visits, tramples vegetation and displaces wildlife.

Within the San Joaquin River Gorge, recreation use is concentrated at established facilities and along existing trails, with few instances of new disturbances or unauthorized routes. Since motorized trail riding is not a targeted recreational activity, accelerated erosion, trail widening and proliferation of routes would not occur. The steep topography, dense vegetation, and focus on environmental outreach results in low impact activities that generally maintains the habitat quality.

4.3 CAVE AND KARST RESOURCES

Caves on public lands may be considered significant for their biotic, cultural, geologic, hydrologic, recreation, education, or scientific values. Caves are generally found in karst formations, which are geologic areas, composed of soluble rocks, such as limestone or gypsum. Caves can also occur in other rock types and formations, including lava flows and granite. Known cave resources are relatively rare on public lands in the Bakersfield FO.

Impacts on cave and karst resources can occur from direct disturbance and as a consequence of access which potentially results in overuse and vandalism. Management actions that reduce, restrict, monitor, or prohibit disturbance from actions such as, surface development or intensive recreation use would reduce the potential for impacts to occur. In many cases measures to protect other resource values result in management actions that provide protection for cave and karst resources.

Generally impacts are greatest where cave locations are known to the public and ease of access is high, typically near roads, OHV trails, and population centers.

METHODS OF ANALYSIS

The analysis of direct and indirect effects is focused on the four known cave locations within the Decision Area. Similar effects would be anticipated to occur on as yet undiscovered cave locations.

Direct impacts to cave and karst resources result from management actions that physically alter, damage, or destroy cave and karst systems, including their associated geologic features (speleothems) and biologic communities.

Indirect impacts to cave and karst systems can result from actions that increase the accessibility of cave and karst areas, and therefore the probability of adverse impacts due to incompatible or excessive recreational use. Indirect impacts can also result from activities that can alter water quality (e.g., agriculture, pesticide application, pollution) when degraded water infiltrates into groundwater, thereby possibly altering the chemical and biological environment of cave and karst systems.

Indirect impacts from environmental causes cannot be quantified due to the complexity of individual cave ecosystems and the lack of a complete inventory of cave resources. Therefore methods used to describe potential for impacts focuses on a qualitative explanation of how accessible and amount of visitation caves receive as a result of the decisions.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- Caves present unique geology and potential for distinctive cave resources including ecosystems that may not be duplicated elsewhere.
- Adverse impacts to cave and karst structure and integrity also would impact associated resources including the biological communities with the cave, and any cultural, geologic, or paleontological resources that are present.
- Impacts are generally irretrievable and irreversible, although only occur at the local scale; due to the sensitive and nonrenewable nature of cave systems and associated resources.
- Limestone caves are more susceptible to impacts than granite cave systems due to their geologic structure.
- Millerton cave is the most easily accessible, receives higher levels of visitation, and therefore is most at risk of adverse impacts from excessive and incompatible uses.
- Determination as significant would limit the distribution of cave location information in accordance with the Federal Cave Protection Act.
- Actions associated with other resources that minimize or eliminate surface-disturbing activities would be anticipated to have beneficial impacts on caves, where present.
- In general, recreational uses of caves have the greatest potential to directly impact cave and karst resources.

4.3.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Cave and karst formations would not be specifically managed for beyond law, policy and agency guidance. No determination of significance would be made for caves within the decision area; therefore the Freedom of Information Act would allow potentially sensitive information about cave

locations and resources to be more freely available from the BLM and visitation would be expected to continue at or near the current levels.

Granite Cave would be managed as a Special Management Area (SMA) for cultural resources. The cave has been gated for protection of cultural resources and values therefore eliminated access and associated impacts.

Special management applied through SMA identification for both Granite Cave and Erskine Creek would establish limitations on fluid mineral development and propose withdrawal from the mining laws that would reduce the likelihood of surface disturbance in these areas therefore providing protection to caves and cave resources.

Designation of the San Joaquin River Gorge Special Recreation Management Area (SRMA), in which Millerton Cave is located, has the potential to increase visitation to the area. However, management is not specifically focused on the recreational use of caves, and therefore access to the cave would not be increased and visitation is expected to continue at current levels.

4.3.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The known caves, and karst formations most likely to contain caves, would be determined to be significant either through direct identification or by incorporation into an ACEC as part of its importance criteria. This determination would limit the distribution of cave information potentially reducing impacts resulting from visitation including overuse and vandalism. The determination of significance has the greatest ability to protect caves that are not widely known. Millerton Cave's location is widely known and, therefore, this determination has limited impact on accessibility or visitation.

All caves or segments of caves yet undiscovered and recorded would be restricted (Class II), requiring a permit for access, thus limiting their accessibility and potentially reducing risk of damage and destruction of cave resources.

Wildland fire could result in denudation of vegetation around cave openings increasing their visibility and associated risks of impact from excessive or incompatible uses. Where wildland fire could be used for resource benefit in a portion of the Three Rivers Fire Management Unit, the chance of cave entrances being exposed is higher, but the caves in this area are located further from routes of travel and population centers.

Although caves are located in areas that would be managed as recreation management areas (Case Mountain ERMA and San Joaquin River Gorge SRMA) neither area is specifically focused on the recreational use of caves, therefore access to these caves would not be increased or promoted. Consequently increased visitation resulting from recreation management designations is not expected to increase use of these caves.

Special management attention for Erskine Creek and Kaweah ACECs would provide protection for caves in these areas by limiting surface disturbance through various means including proposing their withdrawal from mineral entry or limiting surface use for fluid mineral development.

4.3.3 IMPACT OF ALTERNATIVE B

Granite Cave would be closed (Class III) eliminating all but permitted scientific and educational use, therefore eliminating adverse impacts from incompatible or excessive use. The gate would continue to be maintained to enforce this closure. Protection the cave would receive from surface-disturbing activities (mineral or ROW development, etc.) through management of other resources would be reduced as there is no overlapping special designation or specific management attention. Protection would still be achieved by compliance with cultural resource law, regulation, and policy as a result of the presence of significant cultural resources and values within the cave.

Millerton Cave would be open (Class I) to all forms of use: recreational, educational and scientific, as is the current condition. Therefore, impacts would be expected to continue at current levels.

Caves occurring with the Erskine Creek and Kaweah ACECs would be restricted (Class II), requiring a permit for access, thus limiting their accessibility. Although still exposing caves to the potential impacts from authorized visitation, this would reduce excessive or incompatible use reducing the risk of damage or destruction of cave resources.

4.3.4 IMPACT OF ALTERNATIVE C

All known caves including those occurring at Erskine Creek and Kaweah would be closed (Class III) to all forms of use, except scientific or educational use with specific authorization from the BLM. This would eliminate legal recreational cave use and therefore the adverse impacts associated with this visitation.

Millerton Cave is directly accessible by an established and designated (non-motorized) route. Although closed, the cave would continue to accessible via this route, potentially leading to unauthorized visitation and the associated impacts of this use.

4.3.5 IMPACT OF ALTERNATIVE D

All known caves including those occurring at Erskine Creek and Kaweah would be closed (Class III) to all forms of use, except scientific or educational use with specific authorization from the BLM. This would eliminate legal recreational cave use and therefore the adverse impacts associated with this visitation.

Millerton Cave is directly accessible by an established and designated (non-motorized) route. Although closed, the cave would continue to accessible via this route, potentially leading to unauthorized visitation and the associated impacts of this use.

4.3.6 IMPACT OF ALTERNATIVE E

Granite Cave would be closed (Class III) eliminating all but permitted scientific and educational use, therefore eliminating adverse impacts from incompatible or excessive use. The gate would continue to be maintained to enforce this closure. Protection the cave would receive from surface-disturbing activities (mineral or ROW development, etc.) through management of other resources would be reduced as there is no overlapping special designation or specific management attention. Protection would still be achieved by compliance with cultural resource law, regulation, and policy as a result of the presence of significant cultural resources and values within the cave.

Millerton Cave would be open (Class I) to all forms of use: recreational, educational and scientific, as is the current condition. Therefore, impacts would be expected to continue at current levels.

Caves occurring with the Erskine Creek and Kaweah ACECs would be restricted (Class II), requiring a permit for access, thus limiting their accessibility. Although still exposing caves to the potential impacts from authorized visitation, this would reduce excessive or incompatible use reducing the risk of damage or destruction of cave resources.

4.4 CULTURAL RESOURCES

Cultural resources include those artifacts, features, locations and landscapes (including Traditional Cultural Properties) that provide insight into human history and cultural development or remain important to contemporary Native Americans. These resources are dispersed across the landscape, and often occur in locations which continue to have attraction for a variety of uses. Any activity that disturbs the ground has the potential to impact cultural resources.

Collocation of cultural resources with a variety of uses may be incompatible and result in unintentional adverse impacts. Management actions that reduce, restrict, monitor, or prohibit surface disturbing actions, such as surface development or intensive recreational use, would reduce the potential for disturbance to archaeological cultural resources. In addition, the location of cultural resources in areas of public use may result in purposeful damage and destruction of these resources through vandalism and unauthorized collection (looting).

Impacts on cultural resources are assessed by applying the criteria of adverse effect, as defined in 36 CFR, Part 800.5a: "An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative."

METHODS OF ANALYSIS

The area of analysis focuses on cultural resources within the entire Decision Area. Specific attention is given to areas with known or high probability of cultural importance. In addition, 696 recorded cultural resource sites are used to quantify analysis where appropriate.

Direct impacts to cultural resources result from any surface disturbance that physically alter, damage, or destroy archaeological sites or traditional use areas and diminish the factors contributing to their eligibility to the National Register of Historic Places (NRHP) or Native American values. In addition, incompatible use (e.g., purposive vandalism and unauthorized excavation or artifact collecting ("looting") at archaeological sites) also directly destroys factors contributing to eligibility.

Indirectly cultural resources are impacted by the ease of accessibility to both surface disturbance and incompatible uses in areas with these resources by increasing opportunity for direct impacts to occur. In addition, indirect impacts result from actions that change the potential for erosion or other natural processes. Human visitation, recreation, vehicle use, livestock grazing, fire and non-fire vegetation treatments, and other activities can increase the rate of deterioration through natural processes (erosion or weathering).

Traditional Cultural Properties are subject to similar direct and indirect impacts; however, the scale of these impacts is often area-wide affecting view shed and overall access for traditional uses.

The potential for degradation of factors contributing to eligibility or Native American values is used as an indicator of impact on cultural resources. When possible acres and mileage where this potential is changed are used to quantify extent of impact.

Cultural sites can potentially occur anywhere in the Decision Area, which has not been completely surveyed for the presence of cultural sites. Therefore, only a portion of all cultural sites likely to occur within the Decision Area have been discovered. As a result, known cultural sites are sometimes used as a proxy for impacts on the entire magnitude of cultural resources.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Cultural Resources: Biological Resources, Cave and Karst, Wildland Fire Ecology and Management, Comprehensive Trail and Travel Management, Livestock Grazing, Minerals, Recreation, and Special Designations. Those resources, resource uses and programs not listed are deemed to have negligible effects and, therefore, are not further analyzed.

ASSUMPTIONS

The following assumptions regarding the resource base and management practices were made in the analysis:

- Archaeological sites are highly sensitive to impacts, which are irreversible, and result in irretrievable loss.

- Unless determined otherwise, all cultural sites are treated as eligible historic properties and afforded the associated emphasis on preservation through avoidance of any potential adverse effect.
- Archaeological resources derive their data value from the context of the artifacts and physical features contained within the site. Therefore, disturbance of the arrangement of the site contents effectively destroys the information it contains.
- Designated Wilderness Areas (120,800 acres) eliminate impacts to cultural resources resulting from surface disturbance related to mineral and right-of-way development and use of OHVs. Potential for impact may still occur from support and participation in primitive, unconfined recreational activities.
- Upon request by Native Americans access to places of importance to Native American people would be accommodated appropriately.
- All proposed ground surface disturbing undertakings and use authorizations which could potentially affect cultural sites or access to places of traditional importance to Native Americans on public lands would comply with BLM policy, laws, regulations and Executive Orders designed to preserve and protect cultural resources. If eligible sites are discovered within a project area, and they cannot be avoided, mitigation strategies including excavation and data recovery are required.
- Due to the dispersed nature of livestock grazing, impacts to cultural resources through ground surface disturbance and erosion may occur Decision Area-wide, however, capability to manage for these impacts exists only on public land. Direct impacts due to surface disturbance resulting from livestock grazing are generally concentrated in areas of congregation, such as water sources, salt licks, loafing, and trailing areas.
- Cultural resources within 300 feet of a route are most susceptible to surface disturbance and incompatible activity. Motorized routes provide the easiest form of access and therefore are considered to have the highest potential for impact to occur. The use of this route buffer does in no way indicate this area for all routes has been surveyed for cultural resources and additional sites may be located within those unsurveyed areas.

4.4.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Potential for surface disturbance, and therefore increased possibility of loss of factors contributing to eligibility would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), and cease OHV activity (OHV Closed areas) through various designations and identifications that may or may not cite cultural resources protection within their objectives. These limitations result in 155,760 acres (13% of the analysis area) where cultural resources receive some protection from surface disturbing activities.

Specific management for the following SMAs: Granite Cave, Huasna Peak, South Lake Cultural Area, and Walker Pass NHL, would reduce the potential for loss of eligibility of sites within these areas resulting from surface disturbance related to fluid mineral development through the identification of an NSO stipulation for fluid mineral development. Values present would receive

no additional protection from incompatible uses beyond those afforded through regulation, policy, and standard procedures.

The complex of historic sites at Keyesville would be managed as an SMA. Management would reduce the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes an existing withdrawal from the mining law and closure of a portion of the area to mineral material disposal eliminating surface disturbance from these types of mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of discharge of firearms and dispersed camping in some areas).

The historic site of Advance Colony would be managed within the North Fork SMA. This area would have no special management limiting surface disturbance or incompatible activities. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures. The site, however, is easily accessible – adjacent to a parking area and major river access route that exacerbate the opportunity for continued vandalism and potential loss of eligibility.

No routes would be designated as closed to travel and access to cultural resources would remain the same as current conditions. Impacts would continue to occur from 1,936 miles of routes, adjacent (within 300 feet) to which 68% known cultural resource sites. Of these, 439 sites are adjacent to routes available to all modes of travel and would have the highest potential for loss of factors contributing to eligibility due to ease of access and opportunity for incompatible activities.

The cultural resources located within the San Joaquin River Gorge would have no special management limiting surface disturbance or incompatible activities. Although the area would be managed as an SRMA, the cultural resource values present would receive no protection beyond those afforded through regulation, policy, and standard procedures.

The Chico Martinez ACEC, recommended specifically for the protection of cultural resources, would have no special management limiting surface disturbance or incompatible activities with regard to cultural resources. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures.

Special management for the Goose Lake ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development eliminating surface disturbance from these types of mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of dispersed camping and cross country equestrian travel) and livestock grazing (identification as unavailable for livestock grazing).

Special management for the Horse Canyon ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes an NSO stipulation for fluid mineral development eliminating surface disturbance from

fluid mineral development. The impact of incompatible use would be reduced through management applied for livestock grazing (identification as unavailable for livestock grazing). The continued allowance of mineral/fossil specimen collection would subject these cultural resources to disturbance and increase the potential for vandalism and looting. In addition, the presence of people engaged in these activities may diminish the important traditional cultural values of the area to contemporary Native Americans.

Special management for the Point Sal ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and closure for fluid mineral development eliminating surface disturbance from these types of mineral development. The impact of incompatible use would be reduced through management applied for comprehensive trails and travel management (designation as an OHV Closed Area, prohibition of mechanized and equestrian uses, and cross country pedestrian travel) and livestock grazing (identification as unavailable for livestock grazing).

Piedras Blancas Historic Light Station and associated cultural resources would be protected through the legislation establishing the Outstanding Natural Area (ONA). Furthermore public use would be achieved by guided tours for the visiting public reducing incompatible activities.

4.4.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Allocation of Huasna Peak to "traditional use" would result in long-term preservation of the significant cultural values of this area while allowing for traditional cultural practices. The allocation of all rock art sites to "conserve for future use" would preserve this particularly sensitive resource until such time circumstances allow for their use. The allocation of the Walker Pass National Historic Landmark as "public use" allows continued visitation and interpretation of this key pass used by early explorers.

The complex of historic sites at Keyesville would be allocated to "public use" upon completion of stabilization and restoration activities. In the interim, these resources would be allocated to "conserve for future use". The combination of these allocations would allow for interpretive values of this area to be realized while addressing the stability of these resources that pose a danger to public safety and health. These historic resources occur within the Keyesville SRMA, principally the Gold Fever RMZ. These recreation designations along with their associated management are compatible with the public use allocation and the desire for interpretation. In addition, heightened management focus, including a range of services (e.g., educational programs, patrols, etc.) and visitor controls (e.g., restrictions on casual use, discharge of firearms, etc.), would further protect cultural resources from incompatible uses and vandalism.

Piedras Blancas Historic Light Station and associated cultural resources would be allocated to "public use" and protected through the legislation establishing the Outstanding Natural Area (ONA). Furthermore public use would be achieved by guided tours for the visiting public reducing incompatible activities.

Allocation of all other evaluated cultural resources to "scientific use" ensures these sites would be preserved for study, determination of eligibility and appropriate recordation, pending assignment to another use category.

The historic adobe building (circa 1900) at Atwell Island would have no specific management actions directed at its use or preservation. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures. The area, however, would be managed as an area of ecological importance for biological resources with management restrictions on public use that would afford some protection from incompatible activities.

The cultural resources within the South Lake Cultural Area (listed on the NRHP) would have no special management limiting surface disturbance or incompatible activities with regard to cultural resources. Although this no longer affords protection from fluid mineral leasing, the potential for development is low and cultural resources would be adequately protected.

Establishment of a limited surface use stipulation for fluid mineral development based on the presence of recorded, eligible cultural resources within newly leased parcels would promote preservation of these resources. This stipulation would eliminate excavation and data recovery as potential mitigation measures for subsequent parcel development. The stipulation could only be applied to new leases. Based on historic patterns of fluid minerals development (the majority of activity occurring on existing leases), this would result in little to no effect to cultural sites within existing leases beyond the protections afforded through legislation and policy.

Wildland fire suppression activities may impact cultural resources at a local scale through the surface disturbance in fire lines and staging areas. Implementation of MIST tactics would reduce impacts from wildland fire and suppression activities.

Identification of minimization and decision area specific criteria in the designation and redesignation of routes would consider the impact of routes on known cultural resources. Routes would be redesignated and/or relocated to avoid impacts on factors contributing to eligibility.

Management of the San Joaquin River Gorge area as an SRMA, with compatible targeted activities including primitive recreation types and cultural resource education and interpretation would reduce potential impacts to cultural resources related to incompatible activities. In addition, heightened management focus, including a range of services (e.g., educational programs, patrols, etc.) and visitor controls (e.g., restrictions on casual use, discharge of firearms, etc.), would further protect cultural resources from incompatible uses and vandalism.

Dispersed camping may impact cultural resources in a similar fashion to other surface disturbing activities. Restricting parking for dispersed camping to less than one vehicle width from the existing route would somewhat limit the extent of surface disturbance; however, repeated use of dispersed camping sites may expand disturbed areas as the perceived route widens. It is expected cultural resources within the Keyesville and Temblor RMAs would be impacted the most since these areas receive the highest concentrations of dispersed use.

Recreational mining and prospecting (casual use) disturbs localized areas through physical disturbance of surface soils and, therefore, any cultural resources present. Areas with concentrated casual use, such as Keyesville, especially where this use is supported or promoted, would result in increased potential for loss of factors contributing to eligibility.

Special management for all ACECs closes these areas to mineral material disposal and identifies them as right-of-way exclusion areas for utility scale renewable energy projects and avoidance areas for all other rights-of-way. These restrictions reduce potential surface disturbance resulting from these activities and therefore, potential for loss of factors that contribute to the eligibility of cultural resources.

Special management for the Ancient Lakeshores ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of dispersed camping, discharge of firearms, and cross country equestrian travel) and livestock grazing (identification of majority of the area as unavailable for livestock grazing). This recommended ACEC incorporates the existing Alkali Sink and Goose Lake ACECs with the addition of the Sand Ridge portion of Atwell Island.

Special management for the Los Osos ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. These impacts would be reduced through management applied for recreation (prohibition of dispersed camping and discharge of firearms) comprehensive trails and travel management (designation as an OHV Closed Area, prohibition of mechanized and equestrian uses, and cross country pedestrian travel) and livestock grazing (identification as unavailable for livestock grazing). The area would remain open for Native American traditional cultural use.

4.4.3 IMPACT OF ALTERNATIVE B

Potential for surface disturbance, and therefore increased possibility of loss of factors contributing to eligibility would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through various designations and identifications that may or may not cite cultural resources protection within their objectives. These limitations result in 166,140 acres where cultural resources receive some protection from surface disturbing activities. This is an increase of 1% from the existing conditions where cultural resources would receive protection from surface disturbance.

Designation of Granite Cave as a significant cave would preclude the distribution of cave-related information from Freedom of Information Act requests. Subsequent identification as Class III (closed) would restrict access to only permitted scientific and educational purposes. Although this

no longer affords protection from fluid mineral leasing, the potential for development is low and cultural resources would be adequately protected.

Chico Martinez, adjacent to areas known to contain sensitive cultural resources, would have no special management limiting surface disturbance or incompatible activities. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures.

The designation of 308 miles of routes as closed to travel would reduce access to cultural resources. Of the known cultural resource sites eleven miles of routes (adjacent to 58 cultural resource sites) would be designated as Closed and, therefore, reduces the opportunity for incompatible uses to occur. Impacts would continue to occur from 1,628 miles of routes, which are adjacent (within 300 feet) to 58% of known cultural resource sites. Of these, 134 sites are adjacent to routes designated as Motorized and would have the highest potential for loss of factors contributing to eligibility due to ease of access and opportunity for incompatible activities.

Special management for the Horse Canyon ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of rock hounding and casual collection and discharge of firearms) and livestock grazing (identification as unavailable for livestock grazing).

The Kaweah ACEC, recommended partially for the protection of cultural resources (specifically the historic site of Advance Colony), would have no special management limiting surface disturbance. Incompatible activities may be limited by restriction on recreational use (e.g., prohibition of discharge of firearms and restriction to seasonal use); however, the site is easily accessible – adjacent to a parking area and major river access route that exacerbate the opportunity for continued vandalism and potential loss of eligibility.

Special management for the Point Sal ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and closure for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of dispersed camping, hunting and discharge of firearms) comprehensive trails and travel management (designation as an OHV Closed Area, prohibition of mechanized and equestrian uses, and cross country pedestrian travel) and livestock grazing (identification as unavailable for livestock grazing).

In total, recommended ACEC designation specifically for the protection of cultural resources would result in reduced potential for loss of eligibility of cultural resources on 5,030 acres (<1%) of the Decision Area.

4.4.4 IMPACT OF ALTERNATIVE C

Potential for surface disturbance, and therefore increased possibility of loss of factors contributing to eligibility would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through various designations and identifications that may or may not cite cultural resources protection within their objectives. These limitations result in 204,450 acres where cultural resources receive some protection from surface disturbing activities. This is an increase of 5% from the existing conditions where cultural resources would receive protection from surface disturbance.

The designation of 580 miles of routes as closed to travel would reduce access to cultural resources. Of the known cultural resource sites 40 miles of routes (adjacent to 165 cultural resource sites) would be designated as Closed and, therefore, reduces the opportunity for incompatible uses to occur. Impacts would continue to occur from 1,356 miles of routes, which are adjacent (within 300 feet) to 45% of known cultural resource sites. Of these, 119 sites are adjacent to routes designated as Motorized and would have the highest potential for loss of factors contributing to eligibility due to ease of access and opportunity for incompatible activities.

The Chico Martinez ACEC, recommended specifically for the protection of cultural resources, would have no special management limiting surface disturbance or incompatible activities with regard to cultural resources. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures.

Special management for the Granite Cave ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be eliminated through the prohibition of public access.

Special management for the Horse Canyon ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of rock hounding and casual collection and discharge of firearms) and livestock grazing (identification as unavailable for livestock grazing).

The Kaweah ACEC, recommended partially for the protection of cultural resources (specifically the historic site of Advance Colony), would have no special management limiting surface disturbance. Incompatible activities may be reduced by a closure of recreational sites (specifically the parking area adjacent to this historic site).

Special management for the Point Sal ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and closure for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be eliminated through the prohibition of public access and unavailability for livestock grazing.

In total, recommended ACEC designation specifically for the protection of cultural resources would result in reduced potential for loss of eligibility of cultural resources on 5,070 acres (<1%) of the Decision Area.

4.4.5 IMPACT OF ALTERNATIVE D

Potential for surface disturbance, and therefore increased possibility of loss of factors contributing to eligibility would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through various designations and identifications that may or may not cite cultural resources protection within their objectives. These limitations result in 204,450 acres where cultural resources receive some protection from surface disturbing activities. This is an increase of 5% from the existing conditions where cultural resources would receive protection from surface disturbance.

The designation of 580 miles of routes as closed to travel would reduce access to cultural resources. Of the known cultural resource sites 40 miles of routes (adjacent to 165 cultural resource sites) would be designated as Closed and, therefore, reduces the opportunity for incompatible uses to occur. Impacts would continue to occur from 1,356 miles of routes, which are adjacent (within 300 feet) to 45% of known cultural resource sites. Of these, 119 sites are adjacent to routes designated as Motorized and would have the highest potential for loss of factors contributing to eligibility due to ease of access and opportunity for incompatible activities.

The factors contributing to the eligibility of cultural resources on the public lands portion of the Decision Area where livestock grazing would be eliminated (402,800 acres) would be protected from impacts to livestock grazing activity. This action could indirectly increase impacts to cultural resources located on adjoining private lands through concentration of livestock and exacerbation of their impacts. Cultural sites located on private lands, however, are not subject to federal regulatory compliance procedures and protections unless they occur on split estate on which mineral actions are taking place.

The Chico Martinez ACEC, recommended specifically for the protection of cultural resources, would have no special management limiting surface disturbance or incompatible activities with regard to cultural resources. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures.

Special management for the Granite Cave ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes

withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be eliminated through the prohibition of public access.

Special management for the Horse Canyon ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and NSO stipulations for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of rock hounding and casual collection and discharge of firearms) and livestock grazing (identification as unavailable for livestock grazing).

The Kaweah ACEC, recommended partially for the protection of cultural resources (specifically the historic site of Advance Colony), would have no special management limiting surface disturbance. Incompatible activities may be reduced by a closure of recreational sites (specifically the parking area adjacent to this historic site).

Special management for the Point Sal ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and closure for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be eliminated through the prohibition of public access and unavailability for livestock grazing.

In total, recommended ACEC designation specifically for the protection of cultural resources would result in reduced potential for loss of eligibility of cultural resources on 5,070 acres (<1%) of the Decision Area.

4.4.6 IMPACT OF ALTERNATIVE E

Potential for surface disturbance, and therefore increased possibility of loss of factors contributing to eligibility would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through various designations and identifications that may or may not cite cultural resources protection within their objectives. These limitations result in 152,790 acres where cultural resources receive some protection from surface disturbing activities. This is a negligible (<1%) change from the existing conditions where cultural resources would receive protection from surface disturbance.

Designation of Granite Cave as a significant cave would preclude the distribution of cave-related information including those related to important cultural resources from Freedom of Information Act requests. Subsequent identification as Class III (closed) would restrict access to only permitted scientific and educational purposes. Although this no longer affords protection from fluid mineral leasing, the potential for development is low and cultural resources would be adequately protected.

Chico Martinez, adjacent to areas known to contain sensitive cultural resources, would have no special management limiting surface disturbance or incompatible activities. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures; however, this is deemed sufficient to adequately protect these values.

Cultural resources located within Horse Canyon would have no special management limiting surface disturbance or incompatible activities. Values present would receive no protection beyond those afforded through regulation, policy, and standard procedures. The continued allowance of mineral/fossil specimen collection would subject these cultural resources to increased potential for disturbance, vandalism, and looting. In addition, the presence of people engaged in these activities may diminish the important traditional cultural values of the area to contemporary Native Americans.

The designation of 65 miles of routes as closed to travel would reduce access to cultural resources. Of the known cultural resource sites less than one mile of routes adjacent to one cultural resource site would be designated as Closed and, therefore, reduces the opportunity for incompatible uses to occur at this site. Impacts would continue to occur from 1,871 miles of routes, which are adjacent (within 300 feet) to 61% of known cultural resource sites. Of these, 344 sites are adjacent to routes designated as Motorized and would have the highest potential for loss of factors contributing to eligibility due to ease of access and opportunity for incompatible activities.

The Kaweah ACEC, recommended partially for the protection of cultural resources (specifically the historic site of Advance Colony), would have no special management limiting surface disturbance. Incompatible activities may be limited by restriction on recreational use (e.g., prohibition of discharge of firearms and overnight camping); however, the site is easily accessible – adjacent to a parking area and major river access route that exacerbate the opportunity for continued vandalism and potential loss of eligibility.

Special management for the Point Sal ACEC reduces the potential for loss of eligibility for sites within this area resulting from surface disturbance and incompatible uses. Management includes withdrawal from the mining law and closure for fluid mineral development, further eliminating surface disturbance from mineral development. The impact of incompatible use would be reduced through management applied for recreation (prohibition of dispersed camping, hunting and discharge of firearms) comprehensive trails and travel management (designation as an OHV Closed Area, prohibition of mechanized and equestrian uses, and cross country pedestrian travel) and livestock grazing (identification as unavailable for livestock grazing).

In total, recommended ACEC designation specifically for the protection of cultural resources would result in reduced potential for loss of eligibility of cultural resources on 2,200 acres (<1%) of the Decision Area.

4.5 LANDS WITH WILDERNESS CHARACTERISTICS

Wilderness characteristics are defined by the area's ability to demonstrate a natural state and provide opportunities for solitude and primitive, unconfined recreation. It is these characteristics that can be impacted by management decisions throughout the alternatives. Where management actions seek to maintain or enhance at natural state (e.g., protection of biological resources) the associated characteristic is beneficially impacted. Where management actions allow for surface disturbance and development all characteristics can be adversely impacted.

The Bakersfield FO inventory for lands with wilderness characteristics completed in conjunction with this RMP evaluated wilderness characteristics as discussed in Section 2(c) of the Wilderness Act, to determine those areas that possess these characteristics. The analysis seeks to determine if prescriptive management of these characteristics would be required to protect an area's naturalness, solitude, and opportunity for primitive, unconfined recreation and whether wilderness characteristics management is appropriate for these areas.

METHODS OF ANALYSIS

The area of analysis focuses on the 16,190 acres of the Decision Area deemed to have wilderness characteristics not already managed for such. An additional 1,700 acres are considered in this analysis, which were proposed by the public, although they no longer present the wealth of wilderness characteristics that warrant protection.

The wilderness characteristics (beyond size that can only be impacted by unforeseeable land tenure adjustments) of naturalness, experiences of solitude, and opportunities for primitive unconfined recreation are used as indicators and to describe the effect of proposed management.

Naturalness is directly impacted by any action that protects the natural environment through restriction or elimination of surface disturbance and development (e.g., closure to mineral development, rights-of-way exclusion etc.). This characteristic is indirectly impacted by actions that enhance the natural environment, such as, improvements to habitat, air quality and water resources.

Solitude and is directly impacted by the presence of sights, sounds and evidence of other people. Indirectly it is impacted through decisions that allow development to occur within or in close proximity to an area.

Opportunities for primitive unconfined recreation are directly impacted by management that restricts these types of activities (closure to overnight camping, prohibition of hunting, etc.) or promotes them (e.g., through the identification of an RMA with primitive recreation types as targeted activities). Indirectly these opportunities are impacted by management that enhances the natural environment to which these activities are linked (e.g., management of game species promotes hunting).

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on wilderness characteristics: Recreation and Visitor Services, Areas of Critical Environmental Concern, and WSAs. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- Actions that diminish naturalness eliminate wilderness characteristics. Where naturalness still exists actions that either reduce experiences of solitude or opportunities for primitive unconfined recreation extinguish wilderness character.
- Surface disturbance and development from the route network, ROWs, livestock grazing, and mineral exploration and extraction, all diminish naturalness and solitude.
- Recreation developments and management may diminish naturalness, solitude and unconfined recreation when not managing for Back County settings and primitive recreation types.
- Restrictions implemented for the protection of biological and cultural resource may limit primitive unconfined recreation, specifically within ACECs.

4.5.1 IMPACT OF ALTERNATIVE A (NO ACTION)

No management for lands with wilderness characteristics is identified. Of the 16,190 acres of public lands identified as possessing wilderness characteristics, none would receive protection from development, surface disturbing activity or other actions that would lessen the presence of naturalness or eliminate the experiences of solitude. All presence of wilderness characteristic could potentially be diminished at all locations. It is, however, anticipated that factors, such as, proximity to existing wilderness, may infer some level of protection on some areas (3,470 acres).

4.5.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The management of lands with wilderness characteristics changes across the action alternatives, as such, there are no impacts considered common to all action alternatives.

4.5.3 IMPACT OF ALTERNATIVE B

Of the lands identified with wilderness characteristics 21% (3,470 acres) would receive prescriptive management to protect those characteristics present. These would include closure to all mineral development, classification as ROW avoidance areas, designation as OHV closed areas, identification as VRM Class II and limitations on the types of development allowed. As a result of this management no impact would be expected in these areas.

Approximately 3,870 acres (24% of lands identified with wilderness characteristics), not managed for wilderness characteristics, would be managed through either the Cyrus Canyon ACEC or the San Joaquin River Gorge SRMA – Pa San RMZ. The ACEC indirectly protects the naturalness of the

area; through measures to preserve biological resources, and affords the wilderness characteristics present protection from mineral development. Primitive unconfined recreation would be diminished through restrictions on opportunities and management actions needed to achieve the objectives of the ACEC. The Pa San RMZ's targeted activities (hiking, hunting etc.) and prescribed management (including, VRM Class I) closely align with the protection of wilderness characteristics and the continued provision of opportunities for solitude and primitive unconfined recreation. As such, the need for additional protective management on top of these other designations is superfluous and may undesirably restrict the ability to manage for the ACEC's relevant values and the RMZ's desired recreation outcomes.

The remaining 55% (8,910 acres) of lands identified as having wilderness characteristics would not be managed to protect these characteristics and, therefore, potentially be at risk of their loss. This area is principally located immediately adjacent to the Kern River Valley communities south of Highway 178. Some of this area is heavily impacted from urban association (e.g., incompatible recreation use (target shooting, OHV use), illegal activity (dumping, clandestine drug labs etc.), and expanding urbanization of the adjacent area; therefore protection of wilderness characteristics would require intensive management. This level of management would be impractical given current or projected funding, and may ultimately be ineffective as the sights and sounds of human activity become ever present within the area.

In addition, if WSAs were released from study status 1,880 acres would be managed for wilderness characteristics, unless congressional release language directs otherwise, as such, the wilderness characteristics of these lands may be protected.

4.5.4 IMPACT OF ALTERNATIVE C

All of the lands identified as having wilderness characteristics would receive prescriptive management to protect those characteristics present. Wilderness characteristics would be protected through closure to mineral development, classification as ROW exclusion areas, designation as OHV closed areas, identification as VRM Class I and limitations on the types of development allowed to ensure compatibility wilderness characteristics management.

Approximately 8,850 acres (49%) of the areas that would be managed with prescriptive management for the protection of wilderness characteristics could potentially prove problematic due to their proximity to, and ease of access from, several communities around Lake Isabella. Issues with, incompatible recreation use (OHVs, target shooting etc.), illegal activity and growth of these communities may adversely impact naturalness and solitude. Some impacts could be address through management efforts such as signing, public information, increased patrols, enforcement, and physical barriers; however these in themselves diminish qualities associated with solitude and naturalness. Furthermore issues with urban growth are beyond management ability.

Three areas previously inventoried in the 1970's and found to have wilderness characteristics, albeit determined unmanageable, were re-inventoried and found to no-longer possess these characteristics.

Due to public interest these areas in addition to one other (totaling 1,700 acres) would receive prescriptive management to maintain or enhance those characteristics present. This management style would be unlikely to establish wilderness characteristics where none have been determined to exist.

In addition if WSAs were released from study status 21,140 acres would be managed for wilderness characteristics, unless congressional release language directs otherwise, as such, the wilderness characteristics of these lands may be protected.

4.5.5 IMPACT OF ALTERNATIVE D

Exclusion of cattle from all public lands would potentially enhance wilderness characteristics in areas managed for this resource, however to implement this may require extensive fencing adjacent to public lands and increased enforcement patrols, both of which would diminish naturalness and solitude.

All of the lands identified as having wilderness characteristics would receive prescriptive management to maintain or enhance those characteristics present. Wilderness characteristics would be protected through closure to mineral development, classification as ROW exclusion areas, designation as OHV closed areas, identification as VRM Class I and limitations on the types of development allowed to ensure compatibility wilderness characteristics management.

Approximately 8,850 acres (49%) of the areas with prescriptive management for the protection of wilderness characteristics could potentially prove problematic due to their proximity to, and ease of access from, several communities around Lake Isabella. Issues with, incompatible recreation use (OHVs, target shooting etc.), illegal activity and growth of these communities may adversely impact naturalness and solitude. Some impacts could be address through management efforts such as signing, public information, increased patrols, enforcement, and physical barriers; however these in themselves diminish qualities associated with solitude and naturalness. Furthermore issues with urban growth are beyond management ability.

Three areas previously inventoried in the 1970's and found to have wilderness characteristics, albeit determined unmanageable, were re-inventoried and found to no-longer possess these characteristics. Due to public interest these areas in addition to one other (totaling 1,700 acres) would receive prescriptive management to maintain or enhance those characteristics present. This management style would be unlikely to establish wilderness characteristics where none have been determined to exist.

In addition if WSAs were released from study status 21,140 acres would be managed for wilderness characteristics, unless congressional release language directs otherwise, as such, the wilderness characteristics of these lands may be protected.

4.5.6 IMPACT OF ALTERNATIVE E

None of the 16,190 acres of lands identified as having wilderness characteristics would be managed for the protection of this resource. Approximately 5,840 acres (36%) of these areas, however, would be less likely to have adverse impacts on wilderness characteristics due to the protective measures afforded other resources that indirectly protect wilderness characteristics.

The 3,470 acres occurring around existing wilderness areas would maintain the protection inferred to it by its location. In addition this area would be managed as the Chimney Peak SRMA, with an undeveloped market strategy, and desired recreational setting and targeted activities that promote solitude and primitive unconfined recreation. The desired Primitive and Back Country settings in the various RMZs would not change the current environment; as such the existing naturalness would be maintained.

The 2,370 acres occurring within the San Joaquin River Gorge as the Pa San RMZ with primitive recreation types as its targeted activities and prescribed management (including VRM Class I) closely align with the protection of wilderness characteristics. It is anticipated these would continue to preserve the wilderness characteristics of the area in lieu of prescriptive management specifically for wilderness characteristics.

The remaining 10,360 acres (64%) of lands identified as having wilderness characteristics would potentially be at risk to loss these characteristics as management for other resources and resource uses would take precedence. It is anticipated over the life of the plan these areas would cease to present wilderness characteristics due to their location directly adjacent to urban development. It is foreseeable that any management would not be sufficient to avert this loss.

4.6 PALEONTOLOGICAL RESOURCES

Paleontological resources are generally associated with known geological formations that occur throughout the Decision Area. In locations where these fossil bearing formations outcrop at the ground surface, paleontological resources are often found.

The fossils themselves and the formation they are derived from provide the data necessary for paleontological analysis. Paleontological specimens that have been arbitrarily removed from their context are much less useful to scientific study then specimens carefully collected and recorded. This means that the protection of these resources in situ until appropriate collection and management can occur is vital to the preservation of the information they contain.

METHODS OF ANALYSIS

The analysis focuses on the Potential Fossil Yield Classification (PFYC) 4 paleontological localities (19,350 acres) in the Decision Area: Chico Martinez-Zemorra Creek; Kettleman Hills North Dome; Maricopa Brea Pits; Sand Canyon-Cache Creek (Horse Canyon); Shark Tooth Hill; and Tierra Redonda Mountain.

Direct impacts to paleontological resources result from surface disturbance that physically damage, destroy, or remove paleontological deposits. Disturbance results from actions that include fluid and solid mineral development, realty actions including renewable energy development, and casual collecting of fossils within areas known to contain particularly sensitive or significant resources.

Management actions that increase the accessibility of areas with paleontological resources can also indirectly affect these resources by increasing opportunity for direct impacts. Indirect impacts may also result from actions that change the potential for erosion or other natural processes.

Availability of areas with paleontological resources to activities including recreational collection and surface disturbance is used as an indicator for the potential for direct impacts. The accessibility as a result of area and route designations and proximity to known resources is used to indicate possible indirect impacts.

Analysis is limited by the incomplete inventory of paleontological localities within the Decision Area including the variance in PFYC that may occur within a single formation.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Paleontological Resources: Comprehensive Trail and Travel Management, Lands and Realty, Minerals, and Recreation. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions regarding the resource base and management practices were considered in the analysis:

- Any proposed project or use on public lands would be assessed for impacts on paleontological resources in accordance with the Paleontological Resources Preservation Act of 2009 (Sections 6301-6312 of the Omnibus Public Lands Act of 2009, 16 USC 470aaa). This would result in protection of paleontological resources on public lands.
- All ground surface disturbing actions within areas identified as PFYC 4 or 5 would trigger inventory and data recovery of paleontological resources. In some cases monitoring of subsurface excavation may be required if it is determined that significant fossil remains may be present below the ground surface.
- Management actions that restrict surface disturbance and incompatible activities either within special designations for the protection of paleontological resources or those designated for protection of other resources reduce the potential for direct impacts.
- Paleontological resources are directly impacted where they occur at or near the surface.
- Excavation associated with other land uses and development (mineral development, construction of routes, etc.) can reveal previously undiscovered resources and potentially allow research and interpretive uses.

- The public has a high level of interest in paleontological resources. Information regarding paleontological resources within the Planning Area is widely available through existing geological mapping and other publications. Knowledge of these locations can lead to incompatible or excessive use.
- Ease of access to localities can contribute to increased damage due to unauthorized use, specimen collection or vandalism. Ease of access is enhanced by new development.

4.6.1 IMPACT OF ALTERNATIVE A (NO ACTION)

The PFYC 4 paleontological localities at Maricopa Brea Pits and Shark Tooth Hill and Chico Martinez and Kettleman Hills ACECs (totaling 18,320 acres) would not receive protection from restrictions on surface disturbing activities beyond those afforded through regulation and policy (i.e., inventory and data recovery).

Special management for the Horse Canyon and Tierra Redonda ACECs affords the PFYC 4 paleontological localities (totaling 1,050 acres) protection from surface disturbing activities related to fluid mineral development through identification as NSO. Furthermore Tierra Redonda ACEC is proposed for withdrawal from the mining laws

All PFYC 4 paleontological localities occur within the OHV Limited Area restricting motorized travel to designated routes and therefore minimizing surface disturbance to these areas. Within the Limited Area, motorized and mechanized travel must occur on routes designated for these purposes. A total of 67 miles of routes that pass through known paleontological localities would be available for motorized use (designated as Motorized or Authorized) and provide easy access to these resources.

4.6.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The PFYC 4 paleontological localities at Maricopa Brea Pits and Shark Tooth Hill (totaling 2,710 acres) would not receive protection from restrictions on surface disturbing activities beyond those afforded through regulation and policy (i.e., inventory and data recovery).

All ACECs are identified as right-of-way avoidance areas and exclusion areas for utility scale renewable energy rights-of-ways, therefore the potential for surface disturbance would be reduced. Conflicting with these allocations, the continued designation of right-of-way utility corridors through some of these avoidance areas (e.g., Kettleman Hills) would preferentially locate facilities in these areas and would increase the potential for disturbance of sensitive resources.

Identification of minimization and decision area specific criteria in the designation and redesignation of routes would consider the impact of routes on known localities. Routes would be redesignated and/or relocated to avoid impacts or paleontological specimens may be recorded and recovered.

4.6.3 IMPACT OF ALTERNATIVE B

The PFYC 4 paleontological localities at Chico Martinez-Zemorra Creek (1,950 acres) would not receive protection from restrictions on surface disturbing activities beyond those afforded through regulation and policy (i.e., inventory and data recovery).

Special management for the Horse Canyon and Tierra Redonda ACECs affords the PFYC 4 paleontological localities (totaling 1,050 acres) protection from surface disturbing activities related to mineral development through identification as NSO, closure to mineral material disposal, and withdrawal from the mining laws. In addition, the restriction on casual collection of fossils and mineral specimens within the Horse Canyon ACEC would further protect these resources.

Special management for the Kettleman Hills ACEC affords the PFYC 4 paleontological localities (13,660 acres) protection from surface disturbing activities related to mineral material disposal, except for those from administrative uses.

All PFYC 4 paleontological localities occur within the OHV Limited Area restricting motorized travel to designated routes and therefore minimizing surface disturbance to these areas. Within the Limited Area, motorized and mechanized travel must occur on routes designated for these purposes. A total of 65 miles of routes (Table 4.6-1) that pass through known paleontological localities would be available for motorized use (designated as Motorized or Authorized) and provide easy access to these resources, however only four miles of these routes would be available to the public without authorization. Two routes designated Closed would prevent access to some parts of these localities.

Table 4.6-1
Miles of Motorized and Authorized Routes through Known Paleontological Localities

Paleontological Locality	Motorized	Authorized	Closed
Chico Martinez-Zemorra Creeks	1.4	0	0
Kettleman Hills	2	55	0
Maricopa Brea Pits	0	0.3	0
Sand Canyon-Cache Creek	0.1	0	0.1
Shark Tooth Hill	0	6	3
Tierra Redonda Mountain	0	0.1	0

4.6.4 IMPACT OF ALTERNATIVE C

Special management for the Chico Martinez and Kettleman Hills ACECs affords the PFYC 4 paleontological localities (totaling 15,610 acres) protection from surface disturbing activities related to mineral material disposal, except for those from administrative uses.

Special management for the Horse Canyon and Tierra Redonda ACECs affords the PFYC 4 paleontological localities (totaling 1,050 acres) protection from surface disturbing activities related to mineral development through identification as NSO, closure to mineral material disposal, and withdrawal from the mining laws. In addition, the restriction on casual collection of fossils and mineral specimens within the Horse Canyon ACEC would further protect these resources.

Tierra Redonda ACEC is designated as an OHV Closed Area therefore eliminating surface disturbance resulting from motorized use and reducing the potential for damage and destruction of paleontological resources. This closure also reduces the ease of access to these paleontological localities.

The remainder of the PFYC 4 paleontological localities occurs within the OHV Limited Area restricting motorized travel to designated routes and therefore minimizing surface disturbance to these areas. Within the Limited Area, motorized and mechanized travel must occur on routes designated for these purposes. A total of 65 miles of routes (Table 4.6-1, above) that pass through known paleontological localities would be available for motorized use (designated as Motorized or Authorized) and provide easy access to these resources. Two routes designated Closed would prevent access to some parts of these localities.

4.6.5 IMPACT OF ALTERNATIVE D

Special management for the Chico Martinez and Kettleman Hills ACECs affords the PFYC 4 paleontological localities (totaling 15,610 acres) protection from surface disturbing activities related to mineral material disposal, except for those from administrative uses.

Special management for the Horse Canyon and Tierra Redonda ACECs affords the PFYC 4 paleontological localities (totaling 1,050 acres) protection from surface disturbing activities related to mineral development through identification as NSO, closure to mineral material disposal, and withdrawal from the mining laws. In addition, the restriction on casual collection of fossils and mineral specimens within the Horse Canyon ACEC would further protect these resources.

Tierra Redonda ACEC is designated as an OHV Closed Area therefore eliminating surface disturbance resulting from motorized use and reducing the potential for damage and destruction of paleontological resources. This closure also reduces the ease of access to these paleontological localities.

The remainder of the PFYC 4 paleontological localities occurs within the OHV Limited Area restricting motorized travel to designated routes and therefore minimizing surface disturbance to these areas. Within the Limited Area, motorized and mechanized travel must occur on routes designated for these purposes. A total of 65 miles of routes (Table 4.6-1, above) that pass through known paleontological localities would be available for motorized use (designated as Motorized or Authorized) and provide easy access to these resources. Two routes designated Closed would prevent access to some parts of these localities.

4.6.6 IMPACT OF ALTERNATIVE E

The PFYC 4 paleontological localities at Chico Martinez-Zemorra Creek and Sand Canyon-Cache Creek (2,840 acres) would not receive protection from restrictions on surface disturbing activities beyond those afforded through regulation and policy (i.e., inventory and data recovery). Furthermore the continued ability to locate mining claims and engage in casual use collection in the

Sand Canyon-Cache Creek locality would over the long term result in degradation to and unauthorized removal of paleontological specimens.

Specific management for Tierra Redonda area of ecological importance affords the PFYC 4 paleontological localities (160 acres) protection from surface disturbing activities related to mineral development through identification as NSO, closure to mineral material disposal, and withdrawal from the mining laws.

Special management for the Kettleman Hills ACEC affords the PFYC 4 paleontological localities (13,660 acres) protection from surface disturbing activities related to mineral material disposal, except for those from administrative uses.

All PFYC 4 paleontological localities occur within the OHV Limited Area restricting motorized travel to designated routes and therefore minimizing surface disturbance to these areas. Within the Limited Area, motorized and mechanized travel must occur on routes designated for these purposes. A total of 62 miles of routes (Table 4.6-2) that pass through known paleontological localities would be available for motorized use (designated as Motorized or Authorized) and provide easy access to these resources.

Table 4.6-2
Miles of Motorized and Authorized Routes through Known Paleontological Localities

Locality	Motorized	Authorized	Closed
Chico Martinez-Zemorra Creeks	1.4	0	0
Kettleman Hills	57	0	0
Maricopa Brea Pits	0.3	0	0
Sand Canyon-Cache Creek	0.2	0	0
Shark Tooth Hill	3	6	0
Tierra Redonda Mountain	0.1	0	0

4.7 SOIL RESOURCES

Soil is principally affected by activities that denude areas of vegetation and agitate soil composition and structure. This includes; development of oil and gas facilities (e.g., well pads, pipelines, etc.), creation and use of trails and roads, cross-country OHV activities, livestock grazing, construction associated with renewable energy projects and within other ROWs. Together these activities are termed "surface disturbance" and ultimately result in the increase potential for accelerated erosion and transport by exposing soil particles to the erosional forces of water and wind. In addition, surface disturbance also has consequences for soil productivity through the removal of organic matter and disruption of natural soil horizons.

METHODS OF ANALYSIS

The analysis focuses on soils in the public lands portion of the Decision Area (404,080 acres).

Soils are directly impacted by increased potential for erosion that results from surface disturbance. Therefore management actions that allow for surface disturbance, such as, removal vegetative cover from oil well pad construction, or compaction of the surface soils from intensively used natural surface trails, can be considered to result in direct impacts. These impacts can be short-term, prior to revegetation or application of other measures to minimize potential for erosion, or long term where bare-ground is left for extended periods. Indirectly soils are impacted by actions that result in changes to soils physical and biological properties (e.g., infiltration capacity, disturbance of soil horizons and amount of organic matter). These indirect impacts largely occur as a result of the direct impacts and can be attributed to similar activities. Ultimately the combined result of changes to soils physical and biological properties and erosion can be a loss of soil productivity and damage to those resources and resource uses dependent upon it.

For analytical purposes the number of acres or miles where surface disturbance would be reduced by management decisions is used as a general indicator of potential impacts to soil resources. The increase or reduction in potential for accelerated soil erosion, and subsequent loss or maintenance of soil productivity is qualitatively used to further describe these impacts.

The lack of a detailed soil inventory that includes the location of biological crusts and occurrence of soils hosting high levels of *Coccidioides immitis*, limits the ability to analyze the impacts on these soil types at the scale of the RMP but would be included in analysis of site-specific projects.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Soil Resources: Comprehensive Trail and Travel Management and Recreation and Visitor Services. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- Actions that protect or improve habitats and aid in the achievement or exceedance of Standards of Rangeland Health ensures vegetation health and vigor, and adequate cover are maintained, which minimizes erosion rates in most areas, resulting in long term beneficial impacts to soil resources.
- Fugitive dust is soil particles that are dispersed into the air from surface disturbing activities (either agitation or denudation) and subsequent wind erosion.
- Limitations on surface disturbing activities such as closure to mineral development, rights-of-way exclusion, OHV Closed areas, seasonal restriction or elimination of livestock grazing all reduce impacts on soils.
- Bare soil (without vegetation or other surface cover) with a surface layer that has been altered from its natural condition is more susceptible to accelerated wind and water erosion than undisturbed soil.

- Soil compaction is considered a localized impact common to, for example, livestock trails and congregation areas, particularly during times when soils are wet, and high-traffic areas such as roads, walking paths, hiking trails, or OHV trails.
- Poorly designed and engineered routes along with inappropriate use (e.g., use when wet that causes rutting) continue to contribute to accelerated erosion from runoff.
- Routes cease to cause impacts only if they are restored and revegetated; if accomplished naturally, this may take upwards of five years.
- Use of natural surface (unimproved) routes continues to disturb surface layers of soil allowing for accelerated wind and water erosion.
- Approximately 18,000 acres of surface disturbance would result from minerals and energy development over the life of the plan (Appendix M).

4.7.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Potential for surface disturbance, and therefore increased rates of erosion and loss of productivity, would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), through designation and identification as ACECs and SMAs. These limitations result in 155,760 acres (39% of the analysis area) where soils receive some protection from surface disturbing activities.

The method of route designation did not consider or minimize the impact of routes on resources (including soils). No routes would be designated closed. Routes may be closed through on the ground measures resulting from activity plans and site-specific NEPA and be either actively or passively restored and revegetated; resulting in a reduction in potential for soil erosion and improvement to soil productivity. Impacts would continue to occur from the existing travel network until routes were individually closed.

The allocation of 61,200 acres (15% of the analysis area) as unavailable for livestock grazing would eliminate impacts on soils from removal of vegetative cover and compaction of highly used areas (trails, troughs, gathering areas, etc.) by livestock. In areas available for livestock grazing, the application of Central California Guidelines for Livestock Grazing as necessary to attain the Standards of Rangeland Health would maintain soil productivity at acceptable levels.

4.7.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Implementing BMPs and the minimization of disturbance of special soils (e.g., serpentine soils, soils highly susceptible to erosion, and Prime or other Important Farmlands), would result in BLM actions and authorizations receiving stipulations, terms, and conditions addressing the reduction of impacts to soil resources (Appendix L). These may include measures to reduce fugitive dust, minimizing areas of disturbance, treatment of bare soils, revegetation, preservation of topsoil, installation of drainage structures, and prohibition of projects on unsuitable slopes. All of which would reduce the potential for accelerated soil erosion and subsequent loss of soil productivity.

Wildland fire can affect soil attributes, such as physical, biological, and chemical characteristics, and denude areas of vegetation leading to accelerated soil erosion. Suppression activities may also impact soils at a local scale through the compaction and disturbance of soils in fire lines and staging areas. Implementation of MIST tactics and ESR plans would reduce impacts from wildland fire and suppression activities. Prescribed fires may have similar impacts, although are generally managed to be lower intensity and for the benefit of resources.

Non-fire fuel treatment (especially mechanical treatments) would remove vegetation and expose soils to erosion in the short term. However, masticated chips from non-fire fuel treatment would provide ground cover, lessening the potential for accelerated erosion. Long-term impacts could occur during fuel break construction and non-fire fuel treatments, due to soil compaction from heavy machinery and vehicles.

Although generally not permitted outside an OHV Open Area, cross country travel by vehicles is authorized in conjunction with certain activities including geophysical studies, non-fire fuel treatments, or access to specific projects or developments (e.g. fence installation). This type of travel creates surface disturbance, compacts soils, and increases the potential for accelerated erosion; these impacts would be analyzed through site-specific NEPA associated with the action or authorization.

Dispersed camping may impact soils in a similar fashion to other surface disturbing activities. Restricting parking for dispersed camping to less than one vehicle width from the existing route would somewhat limit the extent of surface disturbance; however, repeated use of dispersed camping sites may expand disturbed areas as the perceived route widens. It is expected soils within the Keyesville and Temblor RMAs would be impacted the most since these areas receive the highest concentrations of dispersed use.

Recreational mining and prospecting (casual use) disturbs localized areas of soil through physical disturbance of soil horizons. Areas with concentrated casual use, such as Keyesville, especially where this use is supported or promoted, would result in accelerated rates of erosion and loss of soil productivity.

4.7.3 IMPACT OF ALTERNATIVE B

Potential for surface disturbance, and therefore increased rates of erosion and loss of soil productivity, would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through designation and identification as ACECs, lands with wilderness characteristics, and areas of ecological importance. These limitations result in 166,140 acres where soils receive some protection from surface disturbing activities. This is an increase of 2% from the existing conditions where soil productivity would be maintained.

The designation of 308 miles of routes as closed to travel would allow for their restoration and revegetation; subsequently reducing the potential for soil erosion and improvement of soil

productivity. Impacts would continue to occur on 1,628 miles of routes; of which 23 miles (1%) occur on slopes greater than 50%, or in areas considered to be highly erodible on slopes greater than 30%.

The allocation of 66,210 acres as unavailable for livestock grazing, an increase of 1% from the existing conditions, would eliminate impacts on soils from removal of vegetative cover and compaction of highly used areas (trails, troughs, gathering areas, etc.) by livestock. In areas available for livestock grazing, the application of Central California Guidelines for Livestock Grazing as necessary to attain the Standards of Rangeland Health would maintain soil productivity at acceptable levels.

4.7.4 IMPACT OF ALTERNATIVE C

Potential for surface disturbance, and therefore increased rates of erosion and loss of soil productivity, would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), limit right-of-way development (exclusion areas) through designation and identification as ACECs, lands with wilderness characteristics, and areas of ecological importance. These limitations result in 204,450 acres where soils receive some protection from surface disturbing activities. This is an increase of 12% from the existing conditions where soil productivity would be maintained.

The designation of 580 miles of routes as closed to travel would allow for their restoration and revegetation, subsequently reducing the potential for soil erosion and improvement of soil productivity. Impacts would continue to occur on 1,356 miles of routes; of which 22 miles (1%) occur on slopes greater than 50%, or in areas considered to be highly erodible on slopes greater than 30%.

The allocation of 72,700 acres as unavailable for livestock grazing, an increase of 3% from the existing conditions, would eliminate impacts on soils from removal of vegetative cover and compaction of highly used areas (trails, troughs, gathering areas, etc.) by livestock. In areas available for livestock grazing, the application of Central California Guidelines for Livestock Grazing as necessary to attain the Standards of Rangeland Health would maintain soil productivity at acceptable levels.

4.7.5 IMPACT OF ALTERNATIVE D

Potential for surface disturbance, and therefore increased rates of erosion and loss of soil productivity, would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), limit right-of-way development (exclusion areas) through designation and identification as ACECs, lands with wilderness characteristics, and areas of ecological importance. These limitations result in 204,450 acres where soils receive some protection from surface disturbing activities. This is an increase of 12% from the existing conditions where soil productivity would be maintained.

The designation of 580 miles of routes as closed to travel would allow for their restoration and revegetation, subsequently reducing the potential for soil erosion and improvement of soil productivity. Impacts would continue to occur on 1,356 miles of routes; of which 22 miles (1%) occur on slopes greater than 50%, or in areas considered to be highly erodible on slopes greater than 30%.

The allocation of 402,800 acres as unavailable for livestock grazing, an increase of 85% from the existing conditions, would eliminate impacts on soils from removal of vegetative cover and compaction of highly used areas (trails, troughs, gathering areas, etc.) by livestock.

4.7.6 IMPACT OF ALTERNATIVE E

Potential for surface disturbance, and therefore increased rates of erosion and loss of soil productivity, would be minimized through management actions that limit mineral development (NSO, closure, or withdrawal), cease OHV activity (OHV Closed areas), and limit right-of-way development (exclusion areas) through designation and identification as ACECs and areas of ecological importance. These limitations result in 152,790 acres where soils receive some protection from surface disturbing activities. This is a decrease of 1% from the existing conditions where soil productivity would be maintained.

Designation of 70 acres as an OHV Open Area would allow cross country travel by all public lands users, principally expected to be recreational use. This could potentially denude, compact, or otherwise alter soil composition on all 70 acres resulting in increased potential for accelerated erosion and loss of soil productivity. Of specific concern would be erosion caused by water runoff due to the steepness of the slopes within this area.

The designation of 65 miles of routes as closed to travel would allow for their restoration and revegetation; subsequently reducing the potential for soil erosion and improvement of soil productivity. Impacts would continue to occur on 1,871 miles of routes; of which 49 miles (3%) occur on slopes greater than 50% or in areas considered to be highly erodible on slopes greater than 30%.

The allocation of 49,100 acres as unavailable for livestock grazing, a decrease of 3% from the existing conditions, would eliminate impacts on soils from removal of vegetative cover and compaction of highly used areas (trails, troughs, gathering areas, etc.) by livestock. In areas available for livestock grazing, the application of the Central California Guidelines for Livestock Grazing as necessary to attain the Standards of Rangeland Health would maintain soil productivity at acceptable levels.

4.8 VISUAL RESOURCES

Visual resources refer to the visible features and objects, natural, man-made, moving and stationary, which comprise the character of the landscape observed from a given location or Key Observation

Point (KOP). Any action that provides or allows for contrast with the existing elements of the landscape has the potential to impact the visual resource. Management of visual resource focuses on establishing the allowable level of contrast any action may have with the existing environment based on a number of factors such as resource concern, number and sensitivity of views and the desired goals and objectives for an area (e.g., to achieve a physical recreation setting). Management is achieved through the prescription of Visual Resource Management (VRM) Class objectives to all regions within the Decision Area which establish a measurable standard for the amount of change allowed to visual resources in that specific area. The following are statements of the allowed impacts under each VRM Class (these are not the VRM objectives verbatim, but rather a restatement of how objectives for each class will impact the visual environment):

Class I: This class will preserve the existing character of the landscape. Natural ecological changes and limited management activity will be allowed. The level of change to the characteristic landscape will be very low and will not attract the attention of the observer in the area.

Class II: This class will retain the existing character of the landscape. The level of change to the characteristic landscape will be low. Management activities may be seen, but will not attract the attention of the casual observer. Changes will repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class III: This class will partially retain the existing character of the landscape. The level of change to the characteristic landscape will be moderate. Management activities may attract attention but will not dominate the view of the casual observer. Changes will repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV: This class provides for management activities that require major modifications to the existing character of the landscape. The level of change to the characteristic landscape will be high. Management activities may dominate the view and be the major focus of viewer attention. Every attempt will be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Table 4.8-1, "Visual Resources Inventory and Management Classes by Alternative" provides a comparative analysis between the acres of inventory class versus the acres of VRM Classes. To facilitate impact analysis, VRM Classes represent the allowable levels of impacts described above and the inventory classes represent the general existing condition of the landscape, or baseline.

Table 4.8-1
Visual Resources Inventory and Management Classes by Alternative

Alternatives (Acres)		Visual Resource Inventory Class Designations (acres)								
		VRI Class I		VRI Class II		VRI Class III		VRI Class IV		TOTAL
		148,630	**%**	**91,900**	%	**54,340**	**%**	**854,890**	**%**	**1,149,760**
Alternative A										
VRM I	120,820	120,820	81%	-	0%	-	0%	-	0%	**120,820**
VRM II		-	0%	-	0%	-	0%	-	0%	**0**
VRM III	4,760	-	0%	4,760	5%	-	0%	-	0%	**4,760**
VRM IV	3,820	-	0%	-	0%	-	0%	3,820	0%	**3,820**
Total	**129400**	**120,820**	**81%**	**4,760**	**5%**	**0**	**0%**	**3,820**	**0%**	**129,400**
Alternative B										
VRM I	144,730	121,890	82%	18,540	20%	890	2%	3,410	0%	**144,730**
VRM II	207,790	26,740	18%	60,050	65%	20,210	37%	100,780	12%	**207,780**
VRM III	525,860	-	0%	12,110	13%	32,950	61%	480,800	56%	**525,860**
VRM IV	271,380	-	0%	1,200	1%	290	1%	269,900	32%	**271,390**
Total	**1149760**	**148,630**	**100%**	**91,900**	**100%**	**54,340**	**100%**	**854,890**	**100%**	**1,149,760**
Alternative C / D										
VRM I	163,110	125,030	84%	19,160	21%	6,390	12%	12,530	1%	**163,110**
VRM II	250,060	23,600	16%	70,230	76%	30,910	57%	125,320	15%	**250,060**
VRM III	475,560	-	0%	1,310	1%	16,930	31%	457,320	53%	**475,560**
VRM IV	261,030	-	0%	1,200	1%	110	0%	259,720	30%	**261,030**
Total	**1149760**	**148,630**	**100%**	**91,900**	**100%**	**54,340**	**100%**	**854,890**	**100%**	**1,149,760**
Alternative E										
VRM I	143,300	120,460	81%	18,540	20%	890	2%	3,410	0%	**143,300**
VRM II	36,740	1,430	1%	24,960	27%	-	0%	10,350	1%	**36,740**
VRM III	361,620	26,740	18%	47,200	51%	45,840	84%	241,840	28%	**361,620**
VRM IV	608,100	-	0%	1,200	1%	7,610	14%	599,290	70%	**608,100**
Total	**1149760**	**148,630**	**100%**	**91,900**	**100%**	**54,340**	**100%**	**854,890**	**100%**	**1,149,760**

METHODS OF ANALYSIS

The area of analysis includes the entire Decision Area, both public lands surface and split-estate with federal minerals where BLM authorizations have capacity to affect the visual landscape (e.g., authorization to drill a well that would result in construction of a well pad and associated facilities).

Impacts to visual resources are those that contrast with the existing environment when viewed by the casual observer from any key observation point. Contrast can be with form, line, texture or color e.g., construction of a route denudes an area of vegetation (contrasting with texture and color) and introduces strong parallel lines (add lines to the landscape not previously found). Direct impact are considered to be those that reduce the potential for contrast with the existing visual landscape through limitations on surface disturbing and development activities (e.g., closure of an area to fluid mineral development). Indirect impacts are those resulting from actions which support resources

that contribute to the visual landscape (e.g., protection of vegetative communities infers protection several aspects of line, color and texture).

To evaluate the impact of the proposed alternatives on visual resources the quantitative measure of the acres of Visual Inventory Classes that are prescribed to specific Visual Resource Management Class objectives is used to disclose the anticipated loss or protection of visual quality in the existing environment.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Visual Resources: Comprehensive Trail and Travel Management, Lands and Realty, Minerals Management, Recreation and Visitor Services, National Trails, and Lands with Wilderness Characteristics. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- The terms "higher classes" and "lower classes" refer VRM Class Objective in that higher VRM classes are Class I and II and lower VRM classes are Class III and IV.
- A decrease in Scenic Quality (from the conditions contributing to the inventory class) in Classes I or II within a given alternative marks an adverse impact to visual resources. Whereas, an increase in Scenic Quality within a given alternative marks a beneficial impact to visual resources.
- Areas inventoried at higher classes and managed under lower VRM Classes objectives would, in the long term, assume the characteristics of the lower VRM Class, because visual intrusions would be allowed to degrade visual/scenic quality in those areas.
- Due to a combination of local environmental conditions (e.g., climate, vegetation types, soils, etc.), visual qualities of the landscape would not be improved during the life of the plan without intensive rehabilitation. Management focus, therefore, is on protecting existing higher class visual resources.
- Surface disturbances would adversely impact visual resources. Surface disturbances introduce new visual elements onto the landscape or intensify existing visual elements, altering the line, form, color, and/or texture that characterize the existing landscape. Ergo actions that restrict or minimize surface disturbance (e.g., ROW exclusion area or closure or withdrawal from mineral development) beneficial impact visual resources.
- Existing routes are commonplace on the landscape in most areas and have contributed to the inventoried visual condition. Where routes are closed and allowed to revegetate their contribution to the existing visual condition is diminished; however, the extent of visual intrusion associated with specific routes determines the level of impact closure would have (e.g., closed routes with large hillside cuts would continue to diminish visual quality unless actively rehabilitated).

- Although livestock grazing activities introduce surface disturbance and various rangeland improvements they are common-place on the landscape in all areas. This activity at or near currently levels would not introduce additional contrast to the visual environment.
- Wildland fire and suppression actions have the capacity to impact visual resources within any Class. The impact these activities have is related to the intensity and extent of the fire, which cannot be predicted; suffice it to say high intensity fires and greater suppression activities are capable of altering line, texture and color on a landscape for extended periods of time (long-term).
- Any new surface-disturbing activities would be subject to NEPA analysis, which would include a VRM contrast rating for VRM Class I, II, and III areas. Those activities proposed that would not initially meet VRM objectives for the area would be mitigated to the extent needed to meet the objectives. Those activities proposed that could not be mitigated would not be authorized.

4.8.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Visual Resource Management Class Objective would only be applied to areas previously managed under the Hollister RMP and those areas receiving VRM management direction through guidance and policy (i.e., Wilderness, National Scenic Trails and Outstanding Natural Areas). As such 86% of the Decision Area would not be assigned a VRM Class Objective. For these unassigned areas it is assumed that BLM policy (Manual 8410) would be followed and interim management classes assigned at a project specific level using inventoried classes as a baseline. This style of management poses the greatest risk from accumulative impacts on visual resources and could potentially result in unwanted and unnecessary degradation of the visual landscape over the life of the plan.

The small amount VRM management applied would preserve the existing character of 81% of the area inventoried as Class I. The portion of the area (5%) inventoried as Class II (San Joaquin River Gorge) would be managed as VRM Class III to partially retain the existing character of the landscape. It is expected that over the life of the plan this area of VRI Class II would be altered and assume the characteristics of a Class III landscape.

4.8.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The application of VRM "Best Management Practices" as terms and conditions (stipulations) to all ROW authorizations as appropriate for the prescribed VRM Class in that location, would aid achieving VRM objectives and overall reduce the impact of ROWs on the visual environment.

Restrictions on mineral development are not a direct a result of visual resource management, but of management aimed at achieving other resource objectives (e.g., protection of relevance values of an ACEC or biological resources within an area of ecological concern). The limitations that result, such as no surface use (NSO) or closure/withdrawal, indirectly benefit the visual environment through a reduction in the potential sources of visual contrast. In practicality, those areas of highest mineral potential have previously been explored and the resulting levels of development are a major

contributing factor to the lower existing visual resource and VRI Class assigned (Classes III and IV) and consequently the designation of these areas to lower VRM Objectives. As such there are limited impacts on these areas.

Prescription of VRM Classes to achieve desired recreation settings in Recreation Management Areas; both SRMAs and ERMAs, would have varying levels of impact depending on the desired conditions and how far removed they are from the existing environment. Generally desired conditions match or prescribe a lower class from existing conditions and therefore little impact is expected to occur. In the case of Wallow Rock and Tahoot RMZs (Keyesville and San Joaquin River Gorge SRMAs respectively) a lower class is desired that would allow for more visual contrast (this results from the desired development of facilities such as, campgrounds, visitors centers etc.). At the Wallow Rock RMZ this is a departure of one visual class from VRI III to VRM IV. At the Tahoot RMZ this is a departure of two visual classes from VRI II to VRM IV. Over the life of the plan these area would be expected to attain the new VRM objective with the subsequent loss of acreage of higher classes of visual resources.

Establishment of a corridor 0.25 miles wide to protect the scenic quality of the Pacific Crest National Scenic Trail has negligible impact on visual resources as the majority of the trail within the Decision Area occurs within designated Wilderness. Visual resources along the seven percent of outside wilderness would benefit from the establishment of the corridor as these would be assigned VRM Class I allowing for no alteration from the existing condition (VRI Class I).

4.8.3 IMPACT OF ALTERNATIVE B

On the whole over the life of the plan, areas inventoried with visual resource Classes I, II or III would retain those qualities. Of the areas inventoried as Class IV, there would be a general shift to limit major modification of the landscape and reduce impacts on visual resources.

The VRM management applied would preserve the existing visual landscapes through designation as VRM Class I of 20% of area inventoried as Class II and 2% of areas inventoried as Class III; principally in WSAs and lands managed for wilderness characteristics. The majority (65%) of the areas inventoried as Class II would have their visual qualities retained with a potential loss of 14% through designation as a lower VRM class. Of the areas inventoried as Class IV, VRM management would allow for major modification of approximately 32%, with the larger majority (68%) partially or totally retained in current condition; generally in the foothills of the Sierra Nevada Mountains.

Identification of VRM Class I and II as exclusion areas for utility scale renewable energy projects protects the elements of form, line, color and texture from visual intrusion and contrast, created by development of renewable energy sites such as, wind farms and solar fields.

Prescriptive management of lands managed for wilderness characteristics (3,500 acres) would designate these areas as Class II and is protective of visual resources. Other management prescribed to these areas, such as, closures or withdrawal from mineral development, Closed OHV area

designation and as ROW avoidance areas (exclusion for renewable energy projects) would minimize the sources of visual contrast that could occur.

4.8.4 IMPACT OF ALTERNATIVE C

On the whole over the life of the plan, areas inventoried with visual resource Classes I and II would retain those qualities. Of the areas inventoried as Class III or IV, there would be a general shift to limit partial retention and major modification of the landscape and reduce impacts on visual resources.

The VRM management applied would preserve the existing visual landscapes through designation as VRM Class I of 21% of area inventoried as Class II in the Kern River Valley area and 12% of areas inventoried as Class III in the Cuyama Valley area, as a result of prescriptive management for lands managed with wilderness characteristics. The majority (76%) of the areas inventoried as Class II would have their visual qualities retained with a potential loss of 2% through designation as a lower VRM class in RMAs. Of the areas inventoried as Class IV, VRM management would allow for major modification of approximately 30% of the acres and manage the larger majority (68%) as a higher VRM Class including one percent (12,530 acres) as VRM Class I in areas managed for wilderness characteristics.

Identification of VRM Class I and II as exclusion areas for utility scale renewable energy projects protects the elements of form, line, color and texture from visual intrusion and contrast, created by development of renewable energy sites such as, wind farms and solar fields.

Total closure of the Decision Area for development of Solid (non-energy) leasable minerals would eliminate any impact this specific type of mineral development would have on the visual environment beyond those existing facilities.

Prescriptive management of lands managed for wilderness characteristics would designate these areas as VRM Class I, and therefore, is protective of visual resources. In several areas this assigns a higher class than the existing VRI, most notable those areas managed around Cuyama and in the San Joaquin Valley which are inventoried as VRI Class IV. In these areas visual intrusion and contrast with the existing environment would cease, however these areas are not anticipated to achieve the characteristics of a higher class over the life of the plan. Other management prescribed to these areas, such as, closures or withdrawal from mineral development, Closed OHV area designation and as ROW avoidance areas (exclusion for renewable energy projects) would minimize the sources of visual contrast that could occur.

4.8.5 IMPACT OF ALTERNATIVE D

On the whole over the life of the plan, areas inventoried with visual resource Classes I and II would retain those qualities. Of the areas inventoried as Class III or IV, there would be a general shift to limit partial retention and major modification of the landscape and reduce impacts on visual resources.

The VRM management applied would preserve the existing visual landscapes through designation as VRM Class I of 21% of area inventoried as Class II in the Kern River Valley area and 12% of areas inventoried as Class III in the Cuyama Valley area, as a result of prescriptive management for lands managed with wilderness characteristics. The majority (76%) of the areas inventoried as Class II would have their visual qualities retained with a potential loss of 2% through designation as a lower VRM class in RMAs. Of the areas inventoried as Class IV, VRM management would allow for major modification of approximately 30% of the acres and manage the larger majority (68%) as a higher VRM Class including one percent (12,530 acres) as VRM Class I in areas managed for wilderness characteristics.

Identification of VRM Class I and II as exclusion areas for utility scale renewable energy projects protects the elements of form, line, color and texture from visual intrusion and contrast, created by development of renewable energy sites such as, wind farms and solar fields.

Total elimination of livestock grazing from the landscape may indirectly impact visual resource. Although potential removal of rangeland improvements may reduce contrast to the natural landscape, the fencing required for the exclusion of cattle from public lands could be in conflict with higher VRM Objective (Classes I and II) by contrasting with the visual elements of form, line, color and texture to the degree that it draws the attention of the casual observer.

Total closure of the Decision Area for development of Solid (non-energy) leasable minerals would eliminate any impact this specific type of mineral development would have on the visual environment beyond those existing facilities.

Prescriptive management of lands managed for wilderness characteristics would designate these areas as VRM Class I, and therefore, is protective of visual resources. In several areas this assigns a higher class than the existing VRI, most notable those areas managed around Cuyama and in the San Joaquin Valley which are inventoried as VRI Class IV. In these areas visual intrusion and contrast with the existing environment would cease, however these areas are not anticipated to achieve the characteristics of a higher class over the life of the plan. Other management prescribed to these areas, such as, closures or withdrawal from mineral development, Closed OHV area designation and as ROW avoidance areas (exclusion for renewable energy projects) would minimize the sources of visual contrast that could occur.

4.8.6 IMPACT OF ALTERNATIVE E

On the whole over the life of the plan, areas inventoried with visual resource Classes I, III and IV would retain those qualities, with an overall loss of Class II. Of the areas inventoried as Class II, there would be a general shift to allow partial modification of the landscape: increasing impacts on visual resources.

The VRM management applied would preserve the existing visual landscapes through designation as VRM Class I of 20% of area inventoried as Class II and 2% of areas inventoried as Class III; principally in WSAs. Of the area inventoried as Class II less than half (47%) would be preserved or

retained. The remaining majority would, over the life of the plan take on the characteristics of Class III or IV. The majority (70%) of areas inventoried as Class IV would continue to allow for major modification.

Designation of the 70-acre OHV Open Area would diminish visual qualities in this location through the obliteration of vegetation and extensive surface disturbance associated with vehicular travel. Key observation points include the community of Weldon and travelers on approximately five miles of routes adjacent to the area including California State Highway 178, Kelso Valley and Kelso Creek roads. Aggravating the visual impact, the area is located on a north facing slope elevating and angling the area toward these observers.

4.9 WATER RESOURCES

Watersheds are valued for various purposes including the provision of water supplies, aquatic and terrestrial habitat, their scenic and aesthetic qualities, and recreational opportunities. Water resources include surface and ground water and although traditionally addressed separately, both are more effectively managed as an organized unit at the watershed level. Watershed management considers a mix of point and nonpoint source pollution control, water quality and quantity, and the interaction of ground and surface water. As required by law, policy, and guidance, this resource deserves attention and requires protection in order to maintain its quality and sustain designated and beneficial uses. Furthermore, the recreational opportunities and aesthetic values provided by water resources are dependent upon protection and sustainability.

Protection is required by various laws including the Clean Water Act and is achieved by implementing Watershed Management Initiatives, the State Strategic Plan, and Water Quality Standards which are designed to protect the quality of water and its designated or beneficial uses. As a general rule, water resources should be protected by preventing or reducing contamination and waters that are impaired should be restored. If identified as impaired on the CWA Section 303(d) List, then measures would be identified and implemented to remove the segment or basin from listing. Surface waters are not notably extensive on BLM managed lands in the Planning Area (Map 3.13). The Salinas River (0.8 mile) is the only 303(d) listed segment on these lands.

Impacts to water resources can occur from direct contact or interaction with surface (and ground) waters. Water quality issues mainly result from indirect impacts associated with diversion and use. These impacts may be further exacerbated by the effects of climate change on water availability, thus emphasizing the importance of maintaining healthy watersheds to buffer the effects of a changing climate.

METHODS OF ANALYSIS

Given the limited extent of water resources on BLM and the scattered nature of these lands, the analysis of direct effects on water quality is focused on surface waters within the Decision Area. In analyzing the impacts of Comprehensive Trails and Travel Management, the focus is on routes that

interact with surface waters. The analysis will qualitatively address the indirect effects of proposed management on watersheds within the Planning Area.

Direct impacts to water resources can occur from actions that result in the physical alteration or modification of surface waters, including restoration, by the introduction of pathogens via direct contact (from recreation or by livestock). Management actions that limit, restrict, exclude or prohibit direct contact with surface waters and in riparian zones would reduce the potential for direct impacts to occur; no direct adverse impacts are anticipated.

Indirect impacts to water resources result from diversion and use, storm water discharge, non-point source pollution, and the physical alteration of streams, riparian zones, wetlands, and/or floodplain which results in compromised function. Indirect impacts to water resources may result from BLM program and authorized actions that disturb soils, which alter or modify rates of infiltration and runoff, resulting in increased sediment or nutrient load. In many cases measures to protect other resource values (air, soil, biological, cultural, visual) result in management actions that provide protection for water resources.

The possibility for increased risk to water quality from sedimentation, runoff, and direct contact contamination are based on the potential for surface disturbance and presence of humans, pets, and livestock. As such the acres where surface disturbance, incompatible activities, and livestock are excluded from the landscape act as a quantifiable indicator of the reduction of risks to water resources.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the Water Resources: Biological Resources, Soil Resources, Wildland Fire Ecology and Management, Livestock Grazing, Comprehensive Trail and Travel Management, Recreation and Visitor Services, and Special Designations. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- The conditions and function of watersheds within the Planning Area have been altered by historic land and water uses; Federal, State, and regional water quality laws, regulations, plans, and policies are likely to result in improved quality of affected watersheds.
- Surface disturbance from BLM program and authorized activities such as road construction and maintenance, livestock grazing, and energy and mineral development may result in adverse impacts to water quality such as increased sedimentation within the affected watershed.
- Restoration activities and management actions that limit or restrict activities (near surface waters) generally benefit water resources. This may include eliminating, relocating, or

redesigning uses that have resulted or may result in direct impacts to other resources and indirect impacts to water quality.

- Surface waters not occurring within special and administrative designations with prescriptive management would receive no additional protection other than those inferred by law, regulation, and policy.
- Prescriptive management in special and administrative areas that reduces surface disturbance, limits direct contact, and maintains the natural flow of the water would enhance protection of surface waters (and indirectly groundwater) beyond those protections provided by law, regulation, and policy.
- Management actions that improve or maintain ecosystem health (e.g., attainment or exceedance of the Standards of Rangeland Health) provides protection to water quality and quantity at the watershed level.
- For maintenance of the travel network, the application of Comprehensive Trails and Travel Management route designation criteria and guidelines would generally benefit water resources by minimizing direct and indirect impacts.
- The implementation of BMPs (Appendix L) consistent with State and Regional Water Quality Control Board Management Measures (MMs) would provide adequate protection for water resources; this includes the application of central California grazing management guidelines to meet the Standards of Rangeland Health.
- Climate change may affect the availability of water resources. Maintaining healthy, resilient watersheds will be critical to buffering the effects of a changing climate.
- The BLM does not anticipate direct (point-source) discharge into any surface waters that would require a NPDES permits in the Planning Area or the State.
- Travel on such routes that bisect, lie parallel to, or occur within 300 feet of a perennial water bodies may result in impacts that reduce the ability to maintain PFC and to meet standards for water quality, or to attain central California Standards of Rangeland Health.
- Chemical application to control weeds would be conducted in accordance with integrated pest management principles (BLM 1992), therefore, water resources would be adequately protected direct contamination; any chemical use would be subject to site-specific NEPA analysis and a Pesticide Use Permit (PUP).

4.9.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Water resources would be managed in accordance with law, policy, and agency guidance, including the Clean Water Act, California State Standards, and regional and local objectives of the *Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS*.

At the watershed level, special and administrative designations (e.g., ACECs, SMAs, Wilderness, and Wild and Scenic Rivers) and their associated prescriptive management would generally benefit water resources on over 225,120 acres (56% of the Decision Area) by limiting and restricting actions that may affect water quality such as limitations on mineral development, restrictions on livestock

grazing, and elimination of incompatible uses. Special management that specifically protects water resources includes the prohibition of water diversions in the Alkali Sink ACEC.

Travel management activities that directly disturb soils or reduce vegetation can lead to erosion, increased sediment transport, and nonpoint source pollution to surface waters, thereby degrading water quality. No Comprehensive Trails and Travel Management route designations including minimization criteria were applied. The greatest potential for impacts on would occur where motorized routes interact with bodies of surface water. Approximately 6 miles of Motorized routes in the Decision Area would bisect, lie parallel to, or occur within 300 feet of a perennial water bodies; there would be 11 locations where travel routes cross streams. No routes designated Motorized interact with the Salinas River and would not contribute to its continued impairment.

Impacts on water quality from the direct loading of animal wastes and sediment on surface waters from livestock grazing would be eliminated from 22% of the Decision Area that would be allocated as Unavailable or not given an allocation and therefore unavailable for livestock authorizations.

4.9.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Measures to protect healthy riparian areas and restore degraded riparian areas may include fencing, the installation of in-stream structures, channel stabilization, removal or redesign of spring alterations, and activity exclusion. Although implementing actions to protect, enhance, or restore currently degraded water quality may result in direct impacts to surface waters from contact, such measures would be localized and temporary in nature; however, these measures would indirectly benefit water quality downstream in the long term.

Measures to protect, enhance, or restore water quality would provide indirect long term benefits realized at the local, regional and watershed levels. Furthermore, the continued filing of State water rights and proposed management actions represent the agency's commitment to manage natural resources for present and future generations in a multiple use environment. Incompliance with State water rights reporting requirements would potentially jeopardize the continued availability of water resources for beneficial uses on public lands administered by BLM.

Restoration of closed routes and disturbed areas reduces the potential for sediment runoff. Implementation of BMPs (Appendix L) to minimize surface disturbance, and limit or reduce pollution would minimize the potential for contaminated or sediment runoff from a localized area, thereby protecting the affected watershed. Management that specifically protects soils highly susceptible to erosion and those that support biological crusts will provide indirect water quality protection by decreasing the potential for sedimentation and runoff that result from surface disturbance and accelerated erosion.

Severe wildland fire may denude vegetation resulting in increased surface runoff and less infiltration, creating periods of accelerated soil erosion and water quality problems. The indirect effects of wildland fire (increased surface runoff, sedimentation, and decreased water quality) would be minimized by timely implementation of post-fire Emergency Stabilization and Rehabilitation (ESR)

needs. The proposed use of MIST or other modified suppression techniques in sensitive areas such as Wilderness, Wilderness Study Areas, lands managed for wilderness characteristics, culturally significant areas and ACECs would further enhance protection of water quality in these areas by minimizing surface disturbance from fire line construction and reducing the potential for contaminated or sediment runoff.

Travel management activities that directly disturb soils or reduce vegetation can lead to erosion, increased sediment transport, and nonpoint source pollution to surface waters, thereby degrading water quality. During the Comprehensive Trails and Travel Management route designation process, minimization criteria for water resource protection using indicators of central California Rangeland Health Standards and PFC for water quality. The greatest potential for impacts on would occur where motorized routes interact with bodies of surface water. Approximately 6 miles of Motorized routes in the Decision Area would bisect, lie parallel to, or occur within 300 feet of a perennial water bodies; there would be 11 locations where travel routes cross streams. No routes designated Motorized interact with the Salinas River and would not contribute to its continued impairment.

Management and maintenance of the travel network will allow for the identification of areas that physically change (erosion, washout, etc.), which may warrant redesignation or closure. Closure of areas where OHV use has resulted or may result in considerable adverse impacts to other physical resources (e.g. soils, vegetation, and wildlife habitat) would generally benefit water quality by reducing and/or eliminating the potential for impacts. Restoration of routes designated as Closed may result in localized, temporary impacts to surface waters.

4.9.3 IMPACT OF ALTERNATIVE B

At the watershed level, special and administrative designations (e.g., ACECs, Wild and Scenic Rivers, and areas of ecological importance) and their associated prescriptive management would generally benefit water resources on over 301,140 acres (75% of the Decision Area) by limiting and restricting actions that may affect water quality such as limitations on mineral development, restrictions on livestock grazing, and elimination of incompatible uses.

Within the areas identified for special management, the Salinas River would be identified as an area of ecological importance. The area would continue to be specifically managed for protection of the exemplary riparian system through prescriptive management that would continue the allocation as Unavailable for livestock grazing and withdraw the riparian area from the mining laws. Although management actions would prevent further degradation of the Salinas River (CWA Section 303(d) listed) from nonpoint source pollution, these actions would not aid in the remediation of the impaired status.

Impacts on water quality from the direct loading of animal wastes and sediment on surface waters from livestock grazing would be eliminated from 16 % of the Decision Area that would be allocated as Unavailable.

Impacts from motorized travel, on water resources, would be restricted to those that occur within the 261,140 acre OHV Limited Area. Soil disturbance, sediment transport, and nonpoint source pollution from vehicle travel would not occur on 34% of the Decision Area designated as OHV Closed Areas.

The potential for impacts to water quality as a result of direct contact would be lessened by further restricting casual use prospecting in the Fresno River ERMA by requiring an authorization or mining notice for activities other than gold panning.

Two river segments would be determined suitable and pursued for congressional designation in the NWSRS North Fork of the Kaweah (Scenic/Recreational) and the San Joaquin River Segment 1 (Wild/Scenic). Determination of river segments as suitable for inclusion in the National Wild and Scenic Rivers System (NWSRS) would result in the establishment of a 0.50 mile width corridor (0.25 miles each side of the river segment); protective management guidelines would be followed in Wild and Scenic River corridors that prevent modifications or alterations, allowing the free-flowing nature and Outstanding Remarkable Values (ORVs) of a segment and water quality to be maintained. These segments would receive overlapping protection through SRMA and ACEC designations.

4.9.4 IMPACT OF ALTERNATIVE C

At the watershed level, special and administrative designations (e.g., ACECs, Wild and Scenic Rivers, and areas of ecological importance) and their associated prescriptive management would generally benefit water resources on over 322,110 acres (80% of the Decision Area) by limiting and restricting actions that may affect water quality such as limitations on mineral development, restrictions on livestock grazing, and elimination of incompatible uses. .

Within the areas identified for special management, the Salinas River would be identified as an ACEC. The area would continue to be specifically managed for protection of the exemplary riparian system through special management that would continue the allocation as Unavailable for livestock grazing and withdraw the riparian area from the mining laws. Although management actions would prevent further degradation of the Salinas River (CWA Section 303(d) listed) from nonpoint source pollution, these actions would not aid in the remediation of the impaired status.

Impacts on water quality from the direct loading of animal wastes and sediment on surface waters from livestock grazing would be eliminated from 18% of the Decision Area that would be allocated as Unavailable.

Impacts from motorized travel, on water resources, would be restricted to those that occur within the 237,780 acre OHV Limited Area. Soil disturbance, sediment transport, and nonpoint source pollution from vehicle travel would not occur on 41% of the Decision Area designated as OHV Closed Areas.

All eight river segments (30 miles) would be determined suitable and recommended for congressional designation in the NWSRS for the following classifications: the Lower Kern River

(Recreational); South Fork of the Kern River (Recreational); East Fork of the Kaweah (Recreational); Middle Fork of the Kaweah (Recreational); North Fork of the Kaweah (Scenic/Recreational); The Salinas River (Scenic); Chimney Creek (Wild/Recreational); and San Joaquin River Segment 1 (Wild/Scenic). Determination of river segments as suitable for inclusion in the National Wild and Scenic Rivers System (NWSRS) would result in the establishment of a 0.50 mile width corridor (0.25 miles each side of the river segment). In accordance with BLM policy this corridor would be managed so no action could harm the values for which the river segment is found eligible and suitable. Protective management guidelines would be followed in Wild and Scenic River corridors that prevent modifications or alterations, allowing the free-flowing nature and Outstanding Remarkable Values (ORVs) of a segment and water quality to be maintained.

4.9.5 IMPACT OF ALTERNATIVE D

At the watershed level, special and administrative designations (e.g., ACECs, Wild and Scenic Rivers, and areas of ecological importance) and their associated prescriptive management would generally benefit water resources on over 322,110 acres (80% of the Decision Area) by limiting and restricting actions that may affect water quality such as limitations on mineral development, restrictions on livestock grazing, and elimination of incompatible uses. .

Within the areas identified for special management, the Salinas River would be identified as an ACEC. The area would continue to be specifically managed for protection of the exemplary riparian system through special management that would continue the allocation as Unavailable for livestock grazing and withdraw the riparian area from the mining laws. Although management actions would prevent further degradation of the Salinas River (CWA Section 303(d) listed) from nonpoint source pollution, these actions would not aid in the remediation of the impaired status.

Impacts on water quality from the direct loading of animal wastes and sediment on surface waters from livestock grazing would be eliminated from the Decision Area. Installation of fencing (i.e., vehicular access to install physically install fencing) to exclude livestock grazing from public lands would potentially result in adverse indirect impacts at the watershed level including soil disturbance and erosion resulting in sedimentation.

Impacts from motorized travel, on water resources, would be restricted to those that occur within the 237,780 acre OHV Limited Area. Soil disturbance, sediment transport, and nonpoint source pollution from vehicle travel would not occur on 41% of the Decision Area designated as OHV Closed Areas.

All eight river segments (30 miles) would be determined suitable and recommended for congressional designation in the NWSRS for the following classifications: the Lower Kern River (Recreational); South Fork of the Kern River (Recreational); East Fork of the Kaweah (Recreational); Middle Fork of the Kaweah (Recreational); North Fork of the Kaweah (Scenic/Recreational); The Salinas River (Scenic); Chimney Creek (Wild/Recreational); and San Joaquin River Segment 1 (Wild/Scenic). Determination of river segments as suitable for inclusion in

the National Wild and Scenic Rivers System (NWSRS) would result in the establishment of a 0.50 mile width corridor (0.25 miles each side of the river segment). In accordance with BLM policy this corridor would be managed so no action could harm the values for which the river segment is found eligible and suitable. Protective management guidelines would be followed in Wild and Scenic River corridors that prevent modifications or alterations, allowing the free-flowing nature and Outstanding Remarkable Values (ORVs) of a segment and water quality to be maintained.

4.9.6 IMPACT OF ALTERNATIVE E

At the watershed level, special and administrative designations (e.g., ACECs, Wilderness, and areas of ecological importance) and their associated prescriptive management would generally benefit water resources on over 279,650 acres (69% of the Decision Area) by limiting and restricting actions that may affect water quality such as limitations on mineral development, restrictions on livestock grazing, and elimination of incompatible uses.

Within the areas identified for special management, the Salinas River would be identified as an area of ecological importance. The area would continue to be specifically managed for protection of the exemplary riparian system through prescriptive management that would continue the allocation as Unavailable for livestock grazing and withdraw the riparian area from the mining laws. Although management actions would prevent further degradation of the Salinas River (CWA Section 303(d) listed) from nonpoint source pollution, these actions would not aid in the remediation of the impaired status.

Impacts on water quality from the direct loading of animal wastes and sediment on surface waters from livestock grazing would be eliminated from 12 % of the Decision Area that would be allocated as Unavailable.

Impacts from motorized travel, on water resources, would be restricted to those that occur within the 264,560 acre OHV Limited Area. Soil disturbance, sediment transport, and nonpoint source pollution from vehicle travel would not occur on 35% of the Decision Area designated as OHV Closed Areas. In addition, 70 acres would be designated as an OHV Open Area where disturbance would not be confined to routes; it is anticipated surface disturbance resulting from motorized activity in this area would increase nonpoint source pollution from sedimentation.

The potential for impacts to water quality as a result of direct contact would be lessened by further restricting casual use prospecting in the Fresno River ERMA by requiring an authorization or mining notice for activities other than gold panning.

The potential for impacts to water quality as a result of direct contact would be increased by supporting and promoting recreation use at sites within the North Fork ERMA.

4.10 WILDLAND FIRE AND ECOLOGY MANAGEMENT

The main impacts to wildland fire ecology and management include changes to fire ecology and Fire Regime Condition Class (FRCC); risk of human-caused ignitions from various land uses and the various factors that influence wildfire suppression effectiveness, including level of access and constraints on suppression activities.

METHODS OF ANALYSIS

The area of analysis will be the decision area, with emphasis on areas where BLM has surface ownership.

Direct impacts to wildland fire ecology and management include management actions that designate fire suppression direction for specific land areas, such as areas available for the use of fire for resource benefit or areas where Minimum Impact Suppression Tactics (MIST) must be employed. Direct effects also include those management actions that directly impact a fuel bed by removing burnable fuel, such as livestock grazing, fuel treatments and developments or roads that clear vegetation. The road network also directly affects the ease of access for suppression activities, as well as the amount of existing fire control barriers. Actions that ignite fires are also direct impacts, including management actions that allow or necessitate activities such as welding, equipment use, shooting, and catalytic converters coming into contact with dry grass.

Wildland fire ecology is in part related to the overall land health of natural systems. Therefore, management actions that provide for or promote land health would also indirectly promote a healthier FRCC. This includes actions such as providing for wildlife habitat, healthy soils and control of noxious weeds. Indirect effects also include management actions that direct some type of resource protection, which indirectly affects how fires can be suppressed. Increased human use leads to a higher risk of wildfire ignition, so indirect effects stem from actions associated with the extent of the travel network, and the amount of mineral development and recreation use.

Predicting incidence and size of wildland fires is highly speculative and depends on many factors beyond the BLM's control including weather conditions, fuel availability (which is tied to rainfall), the presence of ignition sources (both human and natural), as well as fire suppression resource availability based on other fire activity within the geographic area. Therefore, specific predictions of the acres of wildland fire expected under each alternative are not given. This subject will be limited to qualitative discussions of management actions that would increase or decrease either the risk of ignition or a fire's ease of suppression or resistance to control.

Due to the lack of specific information about the magnitude and location of various management actions that would change the FRCC, no attempt will be made to quantify the number of acres by FRCC by alternative. Qualitative analysis will highlight actions that would tend to improve FRCC and those that would tend to worsen FRCC.

Proposed management of the following resources, resource uses, or programs are anticipated to have negligible effects on wildland fire and ecology for all alternatives and will not be analyzed further: Back Country Byways, National Trails, Caves and Karst Resources, Lands and Realty and Outstanding Natural Areas.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- A direct relationship exists between the amount of human use within the planning area and the frequency of human-caused fires;
- A direct relationship exists between fuel loading and potential fire intensity and severity;
- Actions associated with other resources that promote or improve land health will generally improve FRCC,
- Actions associated with other resources that direct specific management for resource protection will generally complicate fire suppression efforts and could lead to increased time or expense to suppress fires in these areas.
- Actions associated with permitting mineral development or granting rights-of-ways for utility corridors, communication sites, and wind and solar energy developments will generally both increase the hazard of suppressing fires in an area and add to the values at risk that need to be protected.

4.10.1 IMPACT OF ALTERNATIVE A (NO ACTION)

The Hollister RMP provides limited direction for fire management in terms of implementation of prescribed burning in the San Joaquin River Gorge Management Area. Throughout the Decision Area fire management activities would be implemented following guidance in the Federal Wildland Fire Policy. The first priority in implementing any fire management activity would be the safety of firefighters and the public. Human life would not be jeopardized for the protection of any property or resource values. In situations where human life is threatened, suppression actions would not be constrained by resource protection measures. This is the same as current management.

The No Action alternatives include measures for protection of natural and cultural resources, either explicitly stated in the existing RMP, or provided by law, regulation or policy. These constraints on various surface disturbing activities may affect the way in which wildland fires are suppressed in the decision area. Sensitive resource areas may need to be avoided when fire control lines are constructed or there may be limits on the type of line that can be constructed; hand line versus dozer line. Minimum impact suppression tactics (MIST) would be used in some areas, including Wilderness and Wilderness Study Areas, culturally significant areas and ACECs. In general, use of modified suppression techniques could extend the time needed to contain fires in some cases, such as when handline is constructed in favor of a dozer line. In some cases, more acres may be burned if suppression action cannot be taken in sensitive areas near the fire and a more distant control line is used instead. MIST may require less actual work on the ground, such as cold-trailing, where the fire

edge is not lined, but monitored to ensure the fire is out. While these tactics may not require as much physical labor, they can be much more time-consuming, require more patrol and increase suppression costs. Special protection measures, such as wrapping historic structures with fire resistant material or setting up sprinkler systems would increase suppression costs. Sensitive areas may require more intensive post-fire suppression damage repair and emergency stabilization and rehabilitation activities.

In general, modified suppression techniques may be required for protection of ACEC and SMA values, biological resources and habitats, protection of sensitive soil, protection of water quality and riparian values, protection of cultural and paleontological resources, and protection of wilderness characteristics (in Designated Wilderness and WSAs). Implementation of these protection measures under the no action alternatives is generally the same as is occurring under current management based on law, regulation and policy.

While protection of natural resources can constrain suppression activities in some cases, it can also have beneficial effects for wildland fire ecology and FRCC. The FRCC is affected by the amount of departure from both natural vegetation characteristics (species composition and structural stage) and natural fire characteristics (fire frequency and severity). In general, measures to meet the Standards of Rangeland Health benefit FRCC through maintenance of healthy physical and biological systems that allow for maintenance of a more natural fire regime. Actions to protect, recover and enhance biotic diversity, natural habitats and native plant species, as well as actions to control, decrease and eradicate invasive nonnative plants and noxious weeds benefit FRCC. Implementation of Rangeland Standards and Guidelines and actions to maintain biodiversity and control noxious weeds are generally the same as current management.

Alternative A would make a total of 314,600 acres available for grazing. The impacts of livestock grazing are twofold. Removal of vegetation, especially persistent herbaceous material, reduces fine fuels that can contribute to fire spread. However, grazing can favor nonnative weedy species over native species by creating disturbed germination sites and nitrogen rich soils that promote weedy species. Nonnative annuals are well-established in most areas and restoration to native species would require active restoration activities above and beyond elimination of livestock grazing alone. In the absence of these large scale restoration initiatives, the overall net effect is that grazing is beneficial to controlling the spread of fires in fine fuels. This can also decrease the number of fires that spread from the grass vegetation into adjacent shrub areas, which is especially important in areas with fire intolerant shrubs, such as saltbush.

Livestock grazing infrastructure also has indirect effects to fire suppression. Range improvements often include water developments, including installation and maintenance of tanks, ponds, and their associated delivery systems (pumps and lines). In the absence of other municipal sources or larger natural water bodies, these water developments can provide water sources useful during suppression activities.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Discussed below in this context are the resource uses that have these effects, including: Mineral Development, Recreation and Travel Management.

Activities associated with mineral development (welding, heavy equipment use) can increase the risk of ignition. However, developed areas often represent areas of low fuel due to heavy activity, cleared pads and an extensive road network such that when fires get started they are usually contained at a small size. Suppression complexity can be increased in these areas due to the infrastructure to be protected as well as the presence of combustible gases and other potentially hazardous materials. Effects from mineral development are similar to current management.

In general, recreation use tends to increase the risk of wildfire ignition and increased human presence and recreation infrastructure can increases the complexity of wildfire suppression. Alternative A designates one SRMA (4,760 acres) where recreation use would likely be focused. However, there would be a more obvious management presence in the SRMA, with increased patrol and more control of various uses to compatible zones that would likely offset much of the increased risk of ignition. The complexity of wildfire suppression is increased in these areas, as there are more threats to public safety and improvements to protect in the event of a wildfire.

The remainder of the Decision Area (399,320 acres) would be managed as an Extensive Recreation Management Area (ERMA). Recreation use in the ERMAs would generally be less intensively managed as compared to the SRMAs, so ignition risk would not be offset by management presence in these areas. Areas with recreational developments would continue to receive visitors and without the management presence, risk of fire ignition would increase.

Roads tend to be areas of higher ignition from vehicles themselves as well as increasing public access and use. However, roads also serve as fire control barriers and provide access for fire suppression resources, thus increasing suppression effectiveness and reducing costs. Areas that are closed to OHVs will have a decreased risk of ignition from this use. Almost 140,000 acres are closed to OHV use in this alternative. Over 1,895 miles of routes are designated as open to motorized use in this alternative. This use increases the risk of human caused ignitions in this alternative. In terms of wildfire suppression effectiveness, there would be over 1,850 miles of road readily available for use by fire suppression resources for access and use as existing fire control barriers.

4.10.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Conducting all fire management activities on an interagency basis with the involvement of cooperators and partners would facilitate more efficient implementation of fire planning and management across the partners' intermingled jurisdictions to improve overall safety and cost effectiveness. Use of a decision support process to analyze and document fire suppression strategies and tactics would facilitate reasoned decision-making and ensure consideration of resource values and land management objectives. Proactive participation in local Fire Safe Councils or other

community organizations would facilitate collaboration between communities and land management agencies to implement fire mitigation and education strategies to prevent fire ignition and reduce detrimental effects to communities as a result of wildfires. Educating public land users and affected communities on the role of fire in ecosystems and the safe use of fire in the recreational environment would further efforts to prevent human-caused wildfires and increase support of restoring fire back to the ecosystem. Effects of the above actions are the same as current management.

The first priority in implementing any fire management activity is the safety of firefighters and the public. Human life would not be jeopardized for the protection of any property or resource values. In situations where human life is threatened, suppression actions would not be constrained by resource protection measures. Firefighter safety would also not be sacrificed for implementation of MIST for resource protection.

All of the action alternatives include measures for protection of natural and cultural resources. These constraints on various surface disturbing activities may affect the way in which wildland fires are suppressed in the decision area. Sensitive resource areas may need to be avoided when fire control lines are constructed or there may be limits on the type of line that can be constructed; hand line versus dozer line. Minimum impact suppression tactics (MIST) are required in some areas, including Wilderness, Wilderness Study Areas, lands managed for wilderness characteristics, culturally significant areas and ACECs. In general, use of modified suppression techniques could extend the time needed to contain fires in some cases, such as when handline is constructed in favor of a dozer line. In some cases, more acres may be burned if suppression action cannot be taken in sensitive areas near the fire and a more distant control line is used instead. MIST may require less actual work on the ground, such as cold-trailing, where the fire edge is not lined, but monitored to ensure the fire is out. While these tactics may not require as much physical labor, they can be much more time-consuming, require more patrol and increase suppression costs. Special protection measures, such as wrapping historic structures with fire resistant material or setting up sprinkler systems would increase suppression costs. Sensitive areas may require more intensive post-fire suppression damage repair and emergency stabilization and rehabilitation activities.

In general, modified suppression techniques may be required for protection of biological resources and habitats, protection of sensitive soils and soil crusts, protection of water quality and riparian values, protection of Wild and Scenic River corridors, protection of cultural and paleontological resources, protection of visual resource values in Class I and II areas and protection of wilderness character/characteristics (in designated Wilderness, WSAs, and lands managed for wilderness characteristics). Consultation with a resource advisors or archaeologist during fire suppression activities would ensure that sensitive areas, whether designated as ACECs or not, receive sufficient modified suppression techniques. Therefore, effects from management of ACECs are the same for all action alternatives. Implementation of these protection measures under the action alternatives is generally the same as is occurring under current management based on law, regulation and policy.

While protection of natural resources can constrain suppression activities in some cases, it can also have beneficial effects for wildland fire ecology and FRCC. The FRCC is affected by the amount of departure from both natural vegetation characteristics (species composition and structural stage) and natural fire characteristics (frequency and severity). In general, measures to meet the Standards of Rangeland Health benefit FRCC through maintenance of healthy physical and biological systems that allow for maintenance of a more natural fire regime. Actions to protect, recover and enhance biotic diversity, natural habitats and native plant species, as well as actions to control, decrease and eradicate invasive nonnative plants and noxious weeds benefit FRCC. Implementation of Rangeland Standards and Guidelines and actions to maintain biodiversity and control noxious weeds are generally the same as current management.

All of the Action Alternatives allow for the use of fire for resource benefit in three areas: the South Sierra FMU, the Domeland FMU and a portion of the Three Rivers FMU. Wildfires in these areas could be concurrently managed for one or more objectives; suppression or resource benefit. Having the ability to use fire to meet resource objectives in one area and suppressing another portion of the fire where values are at risk allows more flexibility to meet overall resource objectives. Managing fires for resource benefit would return fire to its natural role in the ecosystem and promote healthy fire regimes, improving FRCC. This action represents an increase in the number of acres managed for resource benefit under current management, where this management is not currently allowed.

Implementing the full range of wildland fire and fuels management practices, including prescribed fire, mechanical, chemical, biological and cultural treatments will improve FRCC in most instances. Fuel treatments will reduce areas of unnatural fuel build-up to more closely resemble a natural fire regime. Prescribed fire treatments will reduce fuels and return fire to the ecosystem. Where prescribed fire is not appropriate, non-fire fuel treatments will be used. In some cases, non-fire fuel treatments can reduce fuels to the point that subsequent treatments can utilize natural or prescribed fire to meet resource and fuel management objectives and return fire to the ecosystem. Some fuel treatments may actually represent a departure from the natural fire regime, such as fuelbreaks adjacent to wildland urban interface areas that are maintained through time with a very low fuel loading and may in effect convert chaparral stands to grasslands. These FRCC departures would represent a very minor acreage when considered at the landscape scale. Implementation of fuel treatments and their effect on FRCC would be continuation of current management.

Fuel management projects and fires managed for resource benefit would need to be designed to meet air quality standards and not degrade Federal Class I areas. As is current management, smoke management plans would be written and submitted to local air pollution control districts for approval and burn day authorization. This coordination could delay or limit some prescribed burning operations. In some cases, nonfire fuel treatments may be implemented instead of the desired prescribed fire treatments if it becomes too difficult to secure sufficient burn windows to complete projects due to poor air quality. Air pollution control districts would also be consulted when fires are managed for resource benefit. Poor air quality may limit the use of fire for resource benefit in order to meet air quality requirements.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Although the action alternatives differ slightly in the amount of area available for mineral development, the reasonably foreseeable development scenario predicts most development will be located within the established boundaries of producing fields. Therefore, effects are similar enough to be considered common to all alternatives. Activities associated with mineral development (welding, heavy equipment use) can increase the risk of ignition. However, developed areas often represent areas of low fuel due to heavy activity, cleared pads and an extensive road network such that when fires get started they are usually contained at a small size. Suppression complexity can be increased in these areas due to the infrastructure to be protected as well as the presence of combustible gases and other potentially hazardous materials. Effects from mineral development are similar to current management.

4.10.3 IMPACT OF ALTERNATIVE B

The impacts of livestock grazing are twofold. Removal of vegetation, especially persistent herbaceous material, reduces fine fuels that can contribute to fire spread. However, grazing can favor nonnative weedy species over native species by creating disturbed germination sites and nitrogen rich soils that promote weedy species. Nonnative annuals are well-established in most areas and restoration to native species would require active restoration activities above and beyond elimination of livestock grazing alone. In the absence of these large scale restoration initiatives, the overall net effect is that grazing is beneficial to controlling the spread of fires in fine fuels. This can also decrease the number of fires that spread from the grass vegetation into adjacent shrub areas, which is especially important in areas with fire intolerant shrubs, such as saltbush. Alternative B would make a total of 336,500 acres available for grazing. This represents a 6% increase in the number of acres available for grazing as compared with current management.

Livestock grazing infrastructure also has indirect effects to fire suppression. Range improvements often include water developments, including installation and maintenance of tanks, ponds, and their associated delivery systems (pumps and lines). In the absence of other municipal sources or larger natural water bodies, these water developments can provide water sources useful during suppression activities.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Discussed below in this context are the resource uses that have these effects, including: Recreation and Travel Management.

In general, recreation use tends to increase the risk of wildfire ignition and increased human presence and recreation infrastructure can increases the complexity of wildfire suppression. Alternative B designates three SRMAs (45,240 acres) where recreation use would likely increase. However, there would be a more obvious management presence in SRMAs, with increased patrol and more control of various uses to compatible zones that would likely offset much of the increased

risk of ignition. The complexity of wildfire suppression is increased in these areas, as there are more threats to public safety and improvements to protect in the event of a wildfire.

Recreation use in the four designated ERMAs (167,320) would generally be less intensively managed as compared to the SRMAs, so ignition risk would not be offset by management presence in these areas. However, use of these areas is not expected to increase to a great extent, due to limited marketing and absence of popular features or facilities to draw large crowds. Limited recreation use on the remaining 191,520 acres that is not designated as a RMA is not expected to increase ignition risk a great deal.

Various resource protection measures also affect the extent of area open to various recreational opportunities in each alternative, which also affects the risk of wildfire ignition. Overnight camping is prohibited on just over 29,000 acres and camp fires are prohibited on over 68,000 acres. Ignition risk would be reduced in these areas. Where camp fires are permitted, collection of dead and downed material for firewood would be limited to material 4 inches in diameter and less. This would help moderate the size of campfires for visitors who do not bring their own firewood, further decreasing the risk of escaped fires.

Roads tend to be areas of higher ignition from vehicles themselves as well as increasing public access and use. However, roads also serve as fire control barriers and provide access for fire suppression resources, thus increasing suppression effectiveness and reducing costs. Areas that are closed to OHVs will have a decreased risk of ignition from this use. Almost 143,000 acres are closed to OHV use in this alternative, a slight increase over current management. Ignition risk will also be reduced where routes are closed and slightly less reduced on routes that are open to authorized use only. With over 1,000 miles of routes either closed or limited to authorized use in this alternative there is a large decrease in ignition risk from current management where no routes were closed or limited.

In terms of wildfire suppression effectiveness, there would be over 1500 miles of road readily available for use by fire suppression resources for access and use as existing fire control barriers. In the short term, the 300 miles designated closed would remain available to use for fire suppression resources, except where active restoration is done to re-contour the area and remove the road bed. Due to the limited road maintenance budget historically in the BFO, passive restoration (where routes are allowed to become overgrown and restore naturally over time) is the more likely closure method. Over time, as the road beds deteriorate and these routes become overgrown with vegetation they will not be available for access or serve as fire control barriers, increasing wildfire suppression complexity as compared with current conditions.

4.10.4 IMPACT OF ALTERNATIVE C

The impacts of livestock grazing are twofold. Removal of vegetation, especially persistent herbaceous material, reduces fine fuels that can contribute to fire spread. However, grazing can favor nonnative weedy species over native species by creating disturbed germination sites and nitrogen rich soils that promote weedy species. Nonnative annuals are well-established in most areas

and restoration to native species would require active restoration activities above and beyond elimination of livestock grazing alone. In the absence of these large scale restoration initiatives, the overall net effect is that grazing is beneficial to controlling the spread of fires in fine fuels. This can also decrease the number of fires that spread from the grass vegetation into adjacent shrub areas, which is especially important in areas with fire intolerant shrubs, such as saltbush. Alternative C would make a total of 322,200 acres available for grazing. This represents a 2% increase in the number of allocated acres available for grazing as compared with current management.

Livestock grazing infrastructure also has indirect effects to fire suppression. Range improvements often include water developments, including installation and maintenance of tanks, ponds, and their associated delivery systems (pumps and lines). In the absence of other municipal sources or larger natural water bodies, these water developments can provide water sources useful during suppression activities.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Discussed below in this context are the resource uses that have these effects, including: Recreation and Travel Management.

In general, recreation use tends to increase the risk of wildfire ignition and increased human presence and recreation infrastructure can increases the complexity of wildfire suppression. Alternative C designates two SRMAs (21,490 acres) where recreation use would likely increase. However, there would be a more obvious management presence in SRMAs, with increased patrol and more control of various uses to compatible zones that would likely offset much of the increased risk of ignition. The complexity of wildfire suppression is increased in these areas, as there are more threats to public safety and improvements to protect in the event of a wildfire.

Recreation use in the four designated ERMAs (190,910 acres) would generally be less intensively managed as compared to the SRMAs, so ignition risk would not be offset by management presence in these areas. However, use of these areas is not expected to increase to a great extent, due to limited marketing and absence of popular features or facilities to draw large crowds. Limited recreation use on the remaining 191,680 acres that is not designated as a RMA is not expected to increase ignition risk a great deal.

Various resource protection measures also affect the extent of area open to various recreational opportunities in each alternative, which also affects the risk of wildfire ignition. Overnight camping is prohibited on just over 52,000 acres and camp fires are prohibited on over 68,000 acres. Ignition risk would be reduced in these areas. Where camp fires are permitted, visitors would have to bring their own fire wood, as collection of dead and downed material is prohibited under this alternative. This would reduce the number and size of camp fires, further decreasing the risk of escaped fires.

Roads tend to be areas of higher ignition from vehicles themselves as well as increasing public access and use. However, roads also serve as fire control barriers and provide access for fire suppression

resources, thus increasing suppression effectiveness and reducing costs. Areas that are closed to OHVs will have a decreased risk of ignition from this use. Just over 166,000 acres are closed to OHV use in this alternative, which is almost a 20% increase over current management. Ignition risk will also be reduced where routes are closed and slightly less reduced on routes that are open to authorized use only. With almost 1,200 miles of routes either closed or limited to authorized use in this alternative there is a large decrease in ignition risk from current management where no routes were closed or limited.

In terms of wildfire suppression effectiveness, there would be over 1200 miles of road readily available for use by fire suppression resources for access and use as existing fire control barriers. In the short term, the almost 600 miles designated closed would remain available to use for fire suppression resources, except where active restoration is done to re-contour the area and remove the road bed. Due to the limited road maintenance budget historically in the BFO, passive restoration (where routes are allowed to become overgrown and restore naturally over time) is the more likely closure method. Over time, as the road beds deteriorate and these routes become overgrown with vegetation they will not be available for access or serve as fire control barriers, increasing wildfire suppression complexity as compared with current conditions.

4.10.5 IMPACT OF ALTERNATIVE D

There would be no livestock grazing under Alternative D. This would allow grasses to persist longer and grow taller than in grazed areas. Grass and other forage is a fine fuel that contributes to fire spread. Eliminating grazing would increase the fine fuels available and would increase fire spread, sometimes into the chaparral next to grasslands. Increasing fire spread could result in more acres burned. Burning more acres does not necessarily imply that there would be an adverse impact on wildland fire ecology, as some of the acres would benefit from fire if the fires were to burn under the conditions that the vegetation types developed under. Alternative D would create the least weedy habitat and allow for the smallest chance of introduction and spread of nonnative weedy plants, which would benefit FRCC over time.

Many livestock water sources that are also used for fire suppression would be removed under this alternative, which could reduce fire suppression effectiveness. In order to prevent unauthorized use of public land, an estimated 1,000 of miles of fencing would need to be constructed on private land adjacent to BLM. This may increase the response time to access some areas for fire suppression. Impacts would be minor if fences are barbed wire and could be easily cut to gain access. This would increase the amount of fire suppression repair work that would be required following suppression efforts.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Discussed below in this context are the resource uses that have these effects, including: Recreation and Travel Management.

In general, recreation use tends to increase the risk of wildfire ignition and increased human presence and recreation infrastructure can increases the complexity of wildfire suppression. Alternative D designates two SRMAs (21,490 acres) where recreation use would likely increase. However, there would be a more obvious management presence in SRMAs, with increased patrol and more control of various uses to compatible zones that would likely offset much of the increased risk of ignition. The complexity of wildfire suppression is increased in these areas, as there are more threats to public safety and improvements to protect in the event of a wildfire.

Recreation use in the four designated ERMAs (190,910 acres) would generally be less intensively managed as compared to the SRMAs, so ignition risk would not be offset by management presence in these areas. However, use of these areas is not expected to increase to a great extent, due to limited marketing and absence of popular features or facilities to draw large crowds. Limited recreation use on the remaining 191,680 acres that is not designated as a RMA is not expected to increase ignition risk a great deal.

Various resource protection measures also affect the extent of area open to various recreational opportunities in each alternative, which also affects the risk of wildfire ignition. Overnight camping is prohibited on just over 52,000 acres and camp fires are prohibited on over 68,000 acres. Ignition risk would be reduced in these areas. Where camp fires are permitted, visitors would have to bring their own fire wood, as collection of dead and downed material is prohibited under this alternative. This would reduce the number and size of camp fires, further decreasing the risk of escaped fires.

Roads tend to be areas of higher ignition from vehicles themselves as well as increasing public access and use. However, roads also serve as fire control barriers and provide access for fire suppression resources, thus increasing suppression effectiveness and reducing costs. Areas that are closed to OHVs will have a decreased risk of ignition from this use. Just over 166,000 acres are closed to OHV use in this alternative, which is almost a 20% increase over current management. Ignition risk will also be reduced where routes are closed and slightly less reduced on routes that are open to authorized use only. With almost 1,200 miles of routes either closed or limited to authorized use in this alternative there is a large decrease in ignition risk from current management where no routes were closed or limited.

In terms of wildfire suppression effectiveness, there would be over 1200 miles of road readily available for use by fire suppression resources for access and use as existing fire control barriers. In the short term, the almost 600 miles designated closed would remain available to use for fire suppression resources, except where active restoration is done to re-contour the area and remove the road bed. Due to the limited road maintenance budget historically in the BFO, passive restoration (where routes are allowed to become overgrown and restore naturally over time) is the more likely closure method. Over time, as the road beds deteriorate and these routes become overgrown with vegetation they will not be available for access or serve as fire control barriers, increasing wildfire suppression complexity as compared with current conditions.

4.10.6 IMPACT OF ALTERNATIVE E

The impacts of livestock grazing are twofold. Removal of vegetation, especially persistent herbaceous material, reduces fine fuels that can contribute to fire spread. However, grazing can favor nonnative weedy species over native species by creating disturbed germination sites and nitrogen rich soils that promote weedy species. Nonnative annuals are well-established in most areas and restoration to native species would require active restoration activities above and beyond elimination of livestock grazing alone. In the absence of these large scale restoration initiatives, the overall net effect is that grazing is beneficial to controlling the spread of fires in fine fuels. This can also decrease the number of fires that spread from the grass vegetation into adjacent shrub areas, which is especially important in areas with fire intolerant shrubs, such as saltbush. Alternative E would make a total of 345,800 acres available for grazing. This represents a 4% increase in the number of allocated acres available for grazing as compared with current management.

Livestock grazing infrastructure also has indirect effects to fire suppression. Range improvements often include water developments, including installation and maintenance of tanks, ponds, and their associated delivery systems (pumps and lines). In the absence of other municipal sources or larger natural water bodies, these water developments can provide water sources useful during suppression activities.

There is a complex relationship between various human uses of public land, the resulting increase in wildfire ignition risk and the varying effects to wildfire suppression effectiveness and complexity. Discussed below in this context are the resource uses that have these effects, including: Recreation and Travel Management.

In general, recreation use tends to increase the risk of wildfire ignition and increased human presence and recreation infrastructure can increases the complexity of wildfire suppression. Alternative E designates four SRMAs (168,690 acres) where recreation use would likely increase. However, there would be a more obvious management presence in SRMAs, with increased patrol and more control of various uses to compatible zones that would likely offset much of the increased risk of ignition. The complexity of wildfire suppression is increased in these areas, as there are more threats to public safety and improvements to protect in the event of a wildfire.

Recreation use in the four designated ERMAs (47,270 acres) would generally be less intensively managed as compared to the SRMAs, so ignition risk would not be offset by management presence in these areas. However, use of these areas is not expected to increase to a great extent, due to limited marketing and absence of popular features or facilities to draw large crowds. Limited recreation use on the remaining 188,120 acres that is not designated as a RMA is not expected to increase ignition risk a great deal.

Various resource protection measures also affect the extent of area open to various recreational opportunities in each alternative, which also affects the risk of wildfire ignition. Overnight camping is prohibited on just over 20,000 acres and camp fires are prohibited on over 68,000 acres. Ignition risk would be reduced in these areas. Where camp fires are permitted, collection of dead and

downed material for firewood would be limited to material 4 inches in diameter and less. This would help moderate the size of campfires for visitors who do not bring their own firewood, further decreasing the risk of escaped fires.

Roads tend to be areas of higher ignition from vehicles themselves as well as increasing public access and use. However, roads also serve as fire control barriers and provide access for fire suppression resources, thus increasing suppression effectiveness and reducing costs. This alternative includes a 70-acre area that is open to OHV use. Ignition risk would be increased in the Open area where OHVs would be allowed off-road where they would be more likely to contact flammable vegetation. Areas that are closed to OHVs will have a decreased risk of ignition from this use. Just over 139,450 acres are closed to OHV use in this alternative, which is similar to current management. Ignition risk will also be reduced where routes are closed and slightly less reduced on routes that are open to authorized use only. With just under 200 miles of routes either closed or limited to authorized use in this alternative there is a slight decrease in ignition risk from current management where no routes were closed or limited.

In terms of wildfire suppression effectiveness, there would be almost 1800 miles of road readily available for use by fire suppression resources for access and use as existing fire control barriers. In the short term, the almost 65 miles designated closed would remain available to use for fire suppression resources, except where active restoration is done to re-contour the area and remove the road bed. Due to the limited road maintenance budget historically in the BFO, passive restoration (where routes are allowed to become overgrown and restore naturally over time) is the more likely closure method. Over time, as the road beds deteriorate and these routes become overgrown with vegetation they will not be available for access or serve as fire control barriers, slightly increasing wildfire suppression complexity as compared with current conditions.

RESOURCE USES

4.11 COMPREHENSIVE TRAIL AND TRAVEL MANAGEMENT

Comprehensive Trail and Travel Management (CTTM) manages both the OHV area designations - open, closed and limited - and the route designations assigned to specific features of the travel network. Since travel and transportation are a part of virtually every activity on public lands, including; recreation; livestock management; wildlife management; minerals exploration and development; ROWs to private in-holdings; and management and monitoring of public lands, the resulting travel network is managed to provide for appropriate public access while achieving resource and program goals and objectives. As such, the CTTM program is considered a support function for all resources, resource uses and other BLM-programs with the following basic principles (Executive Order 11644 and 43 CFR 8340); Provide and improve sustainable access for public needs and experiences; Protect natural and cultural resources and settings; and Minimize conflicts among the various users of BLM-administered lands.

In its support role CTTM tends to be reactive to the management direction provided by other resources, essentially implementing their protective or developmental actions.

METHODS OF ANALYSIS

The analysis focuses on the public lands portion of the Decision Area (404,080 acres) and the 1936 miles of inventoried routes from the Bakersfield FO 2009 Digital Route Inventory (BLM, 2009).

Direct impacts to CTTM occur when travel opportunity is expressly reduced or increased. This can impact a specific area, route or mode of travel. Examples of direct impacts include; reduction in OHV travel opportunity resulting, from OHV Closed Area designations; decrease in all travel opportunity from closure of routes; and increase in pedestrian opportunity through the creation of additional hiking trails. Indirect impacts to CTTM occur through actions that allow for expansion of, or limit the extent of, the travel network. In addition some actions go beyond mere allowance and necessitate additional routes (e.g., development of new oil well pads).

To act as an indicator of direct impacts both the acres and miles of travel opportunity restricted or enhanced is used. To indicate indirect impacts the reasonable potential for expansion (i.e., additional routes) resulting from an action is used (e.g., allowance of mineral development increases potential for new routes to occur, or management for a Back Country recreation setting results in a lower potential for routes in that area).

For the purposes of this analysis the physical condition of the route, suitability for use by allowable modes of transport and ability to access the route (i.e., the route is landlocked by private property) are not considered.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on CTTM: Biological Resources, Visual Resources, Minerals Management, Recreation and

Visitor Services, and Special Designations. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- Route designations are implementation level decisions that may be altered by activity level planning and site specific NEPA analysis. The RMP provides the parameters in which these alterations to the travel network may occur and the criteria to be used when making them.
- OHV travel opportunity is not recreation specific and refers to the ability to use a motorized vehicle capable of travelling cross-country (as defined by 43 CFR 8340) for any purpose (some exceptions are provided in the CFR).
- The coarse method of route designation used in the Caliente RMP resulted in routes receiving designation in conflict with other management prescriptions, such as, ACEC special management and Closed OHV Area designations.
- In the No Action Alternative, routes designated 'open' would be available for all modes of transport.
- The allowance for development, livestock grazing and recreational uses, promotes the expansion of the route network within these areas to support these activities.
- Route designations were made using both minimization criteria and Field Office specific criteria based on existing information and knowledge of other resources. Incomplete information with regard to route authorizations (e.g., rights-of-way or routes authorized through an APD/Sundry notice) may result in errors in designations.
- Route designations will change and evolve through activity-level planning over the life of the RMP.

4.11.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Designation of 139,490 acres as OHV Closed Areas, would maintain the existing environment, and therefore is considered to be no additional loss of OHV travel opportunity. The vast majority of the 35% of public lands designated as OHV Closed Areas results from non-discretionary closures of designated Wilderness areas. The discretionary portion of this closure would result from special management within two ACECs; Blue Ridge and Pt Sal.

Route designations would occur through the existing method (i.e., all routes occurring on BLM, and USGS Maps and those on aerial photographs would be 'open' unless indicated closed by on the ground measures). These designations would conflict with the OHV area designations and specific management applied to certain areas (e.g., ACECs and SMAs) and to specific routes (i.e., restrictions to non-mechanized use on 41 miles of the PCNST).

The result of this coarse method of route designation (that lacks consideration of other resources and minimization criteria) would be 1895 miles of route available for all modes of transport; this

incorporates all routes on BLM's 2009 Digital Inventory (principally completed from maps and aerial photographs). All inventoried routes are considered to be used to some degree by various modes of transport and users; and would continue to be available for these uses and users. This would be an increase of 958 miles of designated routes over the existing conditions.

Management of the Keyesville SMA would over the life of the plan refine route designations within the SMA, identifying routes for OHVs and bicycles.

4.11.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The identification of reserves and corridors within the Conservation area of ecological importance (principally the southern San Joaquin Valley Floor) with specific limitation on the amount of surface disturbance may result in losses to the route network over the life of the plan as surface disturbed areas (specifically routes) would be reclaimed to allowed for continued mineral development. This has the greatest potential to impact the authorized users: who are principally responsible for the creation of this portion of the network.

Designation of VRM Classes I and II would increase the complexity of route location and design in order to meet these visual objectives. Therefore, the potential for the route network to expand in these areas may be limited. Conversely, designation of Classes III and IV would support partial or major modification of the landscape thus allowing increased potential for expansion of the travel network.

Use of route designation criteria specifically addresses the purpose and value of each individual route and its relationship to other resource values. The criteria ensure routes are not designated within wilderness or primitive areas (with the exception of routes associated with valid existing rights, which would be designated for authorized use only); reduce potential for harassment of wildlife; minimize to an acceptable level impacts to physical resources; and attempt to eliminate conflicts between various modes of transport and particular route uses.

Establishment of processes to manage and maintain route designations, including general criteria to be addressed for minimizing impacts and local resource specific concerns to be considered, would allow the evolution of the route network over the life of the plan to ensure provision for continue public, private and commercial access to (or through) public lands and minimization of impacts to other resource concerns.

Targeted activities related to travel (e.g., OHV use, mountain biking, hiking, equestrian use, and driving for pleasure) in both ERMAs and SRMAs would support continued travel opportunity and may allow for the expansion or improved sustainability of the travel network in these areas.

4.11.3 IMPACT OF ALTERNATIVE B

Designation of 142,940 acres as OHV Closed Areas would increase the existing restriction by 3,450 acres (4%). Although the vast majority of public lands designated as OHV Closed Areas is a result of non-discretionary action (i.e., Wilderness and WSAs), the increase is attributed to the discretionary

decision to identify lands managed for wilderness characteristics as OHV Closed Areas. Since these additional acres are considered to have wilderness characteristics (i.e., an absence of routes) there is no actual loss in existing opportunity. The potential for the travel network to increase within these areas would be eliminated through both the, desire to manage for wilderness characteristics and OHV designation.

Within the OHV Limited Areas all travel is confined to designated routes and further restricted by specific modes of transport for each route. Approximately 770 miles of route (40% of the route inventory) would remain open to all modes of transport and all users (i.e., designated Motorized); this is an 18% reduction from existing network available for motorized use. A portion of this reduction can be attributed to routes previously mistakenly designated in OHV Closed Areas (e.g., Wilderness); loss of these routes, although designated closed, cannot be considered a loss to opportunity since no legal opportunity exists on these routes. In total 308 miles of route would be designated closed; and either actively or passively restored and revegetated.

Restrictions to public access, specifically in intensively developed oil fields, would be complimented by routes being designated as Authorized[1]. Besides contributing to the aforementioned reduction in Motorized opportunity for the public, this would also eliminate all travel and modes of travel by non-permitted users from 11,420 acres.

4.11.4 IMPACT OF ALTERNATIVE C

Designation of 166,300 acres as OHV Closed Areas would increase the existing restriction by 26,810 acres (6%). Although the vast majority of public lands designated as OHV Closed Areas is a result of non-discretionary action (i.e., Wilderness and WSAs), the increase is attributed to the discretionary decision to identify lands managed for wilderness characteristics and additional ACECs as OHV Closed Areas. Since these additional acres are considered to have wilderness characteristics (i.e., an absence of routes) there would be no actual loss in existing opportunity. The potential (although low) for the travel network to increase within these areas would be eliminated through both the prescriptive management in lands managed for wilderness characteristics and OHV designations.

Within the OHV Limited Areas all travel is confined to designated routes and further restricted by specific modes of transport for each route. Approximately 656 miles of route (34% of the route inventory) would remain open to all modes of transport and all users (i.e., designated Motorized); this is a 30% reduction from existing network available for motorized use. A portion of this reduction can be attributed to routes previously mistakenly designated in OHV Closed Areas (e.g., Wilderness); loss of these routes, although designated closed, cannot be considered a loss to opportunity since no legal opportunity exists on these routes. In total 580 miles of route would be designated closed; and either actively or passively restored and revegetated.

Restrictions to public access, specifically in intensively developed oil fields would eliminate all travel and modes or travel by non-permitted users from 23,400 acres. The designation of approximately

[1] Authorized route may still receive motorized use by permitted users.

half of the routes not currently designated as Closed would eliminate all modes of travel on these routes. These closures may conflict with previous authorizations incidentally allowing route construction that have not been appropriately tracked and recorded for incorporation into the route inventory. It is anticipated some of these routes would be redesignated through the life of the plan to remedy this situation; in the meantime, illegal use of these now closed routes would be expected to continue.

4.11.5 IMPACT OF ALTERNATIVE D

Designation of 166,300 acres as OHV Closed Areas would increase the existing restriction by 26,810 acres (6%). Although the vast majority of public lands designated as OHV Closed Areas is a result of non-discretionary action (i.e., Wilderness and WSAs), the increase is attributed to the discretionary decision to identify lands managed for wilderness characteristics and additional ACECs as OHV Closed Areas. Since these additional acres are considered to have wilderness characteristics (i.e., an absence of routes) there would be no actual loss in existing opportunity. The potential (although low) for the travel network to increase within these areas would be eliminated through both the prescriptive management of lands managed for wilderness characteristics and OHV designations.

Within the OHV Limited Areas all travel is confined to designated routes and further restricted by specific modes of transport for each route. Approximately 656 miles of route (34% of the route inventory) would remain open to all modes of transport and all users (i.e., designated Motorized); this is a 30% reduction from existing network available for motorized use. A portion of this reduction can be attributed to routes previously mistakenly designated in OHV Closed Areas (e.g., Wilderness); loss of these routes, although designated closed, cannot be considered a loss to opportunity since no legal opportunity exists on these routes. In total 580 miles of route would be designated closed; and either actively or passively restored and revegetated.

Restrictions to public access, specifically in intensively developed oil fields would eliminate all travel and modes or travel by non-permitted users from 23,400 acres. The designation of approximately half of the routes not currently designated as Closed would eliminate all modes of travel on these routes. These closures may conflict with previous authorizations incidentally allowing route construction that have not been appropriately tracked and recorded for incorporation into the route inventory. It is anticipated some of these routes would be redesignated through the life of the plan to remedy this situation; in the meantime, illegal use of these now closed routes would be expected to continue.

4.11.6 IMPACT OF ALTERNATIVE E

Designation of 136,280 acres as OHV Closed Areas would reduce the existing restriction by 3,172 acres (1%). The reduction results from the lifting of the closures in within the Blue Ridge ACEC. The remaining public lands designated as OHV Closed Areas are a result of non-discretionary action (i.e., Wilderness and WSAs). The potential for the travel network to increase within the Blue Ridge ACEC would be low due to protective measures in place for condor, and it is doubtful OHV travel would occur as it is not publically accessible.

Designation of 71 acres (0.02% of public lands) as an OHV Open Area for recreational purpose would introduce a travel opportunity not currently found on public lands; although, similar travel opportunities do currently exist nearby at Jawbone Canyon and Cyrus Canyon OHV Park. The area designated open contains 3.5 miles of route which would be removed from the route inventory; a 0.1% reduction in on route opportunities, but with this reduction would come the addition of cross-country OHV travel opportunity. The designation of this area as open, however, would not likely result in an increase in OHV use of the area, as it is located on a slope in which the topography and existing vegetation do not accommodate cross-country travel and OHV recreational opportunities (e.g., travel to a destination, technical challenge, speed etc.).

Within the OHV Limited Areas all travel would be confined to designated routes and further restricted by specific modes of transport for each route. Approximately 1683 miles of route (87% of the route inventory) would remain open to all modes of transport and all users (i.e., designated Motorized); this would be a 43% increase to the existing network available for motorized use. In total 65 miles of route would be designated closed; and either actively or passively restored and revegetated. These closures can principally be attributed to routes previously designated or inventoried occurring in OHV Closed Areas (e.g., Wilderness); loss of these routes, although designated closed, cannot be considered a loss to opportunity since no legal opportunity exists on these routes.

Continued designation of the Chimney Peak Back Country Byway and reconnection of the Long Valley Loop portion would expand the travel network and increase the utility of these routes.

4.12 LANDS AND REALTY

The lands and realty program includes land tenure adjustments (e.g., disposals and acquisitions), land use authorizations (i.e., leases, permits, right-of-way grants), and withdrawals. Its purpose is to facilitate management of public lands and resources in the planning area. The program adapts according to changing land management, resource needs, demands for public land to meet expanding communities and other public purposes.

The lands and realty program is impacted by increasing, limiting, or preventing the potential for realty actions and the land base on which they can occur.

METHODS OF ANALYSIS

The analysis of impacts on lands and realty focuses on two distinctive areas. The area of analysis for land tenure and withdrawals can include the entire Decision Area, including both public lands and federal mineral estate. The area of analysis for land use authorizations consists of public lands (surface).

Direct impacts to lands and realty are considered to be those that either reduce or enlarge the area upon which land tenure and use authorizations can occur (e.g., identification of exclusion areas

reduces the locations in which use authorizations may be issued). As such, the number of acres where lands and realty actions are potentially restricted is used to indicate the impact of management actions and decisions.

Indirect impacts would potentially occur from restrictions that limit the type of development allowed by a specific use authorization (e.g., requirements to comply with BMPs and SOPs, see Appendix L, may make ROW projects infeasible). This principally occurs through the application of special stipulations, which would be applied to all ROW authorizations within avoidance areas and to meet other resource objectives (such as VRM objectives, desired habitat condition, or dust control measures) outside of avoidance areas. These would be established based on the proposed action through a site specific NEPA analysis.

The lack of site specific information for lands meeting the criteria for disposal or acquisition, details of future proposal for rights-of-way development, and the incomplete inventory of cultural resources limits the ability to perform quantitative analysis of these elements as they relate to land tenure and right-of-way authorizations.

Withdrawals related to mineral entry and leasing are analyzed under the Mineral Management sections.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Lands and Realty: Biological Resources, Cultural Resources, Visual Resources Management, Recreation and Visitor Services, ACECs, Wild and Scenic Rivers, and wilderness characteristics. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The analysis is based on the following assumptions:

- Site specific analysis will be conducted for all proposed land tenure actions and land use authorizations.
- Less than 1% of the Decision Area would meet the criteria for disposal (common to all action alternatives) and is likely to have interest expressed for its acquisition during the life of the plan.
- Land acquisitions will depend upon having willing sellers and available funding.
- Demand for land use authorizations is a result of several elements including economic and political climate and demand for services. It is anticipated that increases in population and associated demand for services will be the driving force in a greater call for rights-of-way for roads, utilities, renewable energy development, communication sites, and other land uses.
- BLM has limited discretion in restricting certain right-of-way authorization such as access to private mineral estate, leased or claimed minerals, or private in-holdings.

- The Decision Area is generally considered to have low potential for renewable energy development.

4.12.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Land Tenure

An emphasis is placed on land tenure adjustment activities (repositioning, new management or cooperative management) through the specific disclosure of lands available for disposal in the Decision Area, except NPR 2, for the purpose of improved management efficiency. These lands consist of approximately half of the public lands and all federal mineral estate. This would result in the retention of approximately 188,000 acres and would allow land tenure actions (disposals) to occur on 99% of the Decision Area. There are no criteria established governing which lands are suitable for disposal beyond those provided by law, regulation, and policy. Over the long term these disposals would lead to a net acre loss of public lands and federal mineral estate within the Decision Area.

Land Use Authorizations

Continuation of right-of-way utility corridors delineated by the Western Regional Utility Corridor Study of 1992 preferentially sites large scale utility projects within these areas. The implications of this are the trends to group development within these areas and limit the spread outside of the identified corridors. Beyond this there are only non-discretionary restrictions on ROW development (i.e., Wilderness designations).

Withdrawals

Continued withdrawal from application under the non-mineral public land laws of approximately 175,000 acres would limit the ability for appropriation of these acres.

4.12.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Land Tenure

Retention of all lands not meeting disposal criteria (established through site specific study) diminishes the opportunity for disposal actions to occur. Furthermore, areas that do not meet these criteria as established by the decision, including NLCS units, SRMAs, lands acquired with LWCF funds, and mineral estate with significant fluid mineral potential completely eliminate the opportunity for disposal actions in these areas. This would be a reduction of greater than 99% of lands available for disposal and no net loss of public lands would be anticipated.

Identification of acquisition criteria and priorities such as special status species habitat would result in a net gain of public lands.

Land Use Authorizations

Continuation of right-of-way utility corridors delineated by the Western Regional Utility Corridor Study of 1993 preferentially sites large scale utility projects within these areas. The implications of this are the trends to group development within these areas and limit the spread outside of the identified corridors. However, the identification of ROW avoidance areas, including areas through which the delineated corridors pass, may create a potential for conflict between resources for which the avoidance area is identified to protect and development within the corridor.

Withdrawals

Continued withdrawal from application under the non-mineral public land laws of approximately 184,000 acres would limit the ability for appropriation of these acres.

4.12.3 IMPACT OF ALTERNATIVE B

Land Use Authorizations

Identification of avoidance areas (128,130 acres), including all ACECs, lands managed for wilderness characteristics, and some NLCS units would restrict the opportunity for and feasibility of right-of-way authorizations through the application of special stipulations to development within these areas. Identification of exclusion areas (121,300 acres) for all rights-of-way, a portion of which is non-discretionary, would reduce the acreage available for rights-of-way. This would result in a 62% increase in areas with right-of-way restrictions.

The identification of ACECs, NLCS units, SRMAs, and VRM Class I and II as exclusion areas (280,650 acres) for utility scale (i.e., those supplying power to the national grid) renewable energy development would reduce the acreage available for right-of-ways granted for renewable energy development if new technologies provide means to produce energy in low potential areas. Two areas where the exclusion of utility scale renewable energy development would potentially have immediate impact are Hopper Mountain and Horse Canyon ACECs. These ACECs comprise approximately 25% of the area identified as having high potential for wind energy within the Decision Area.

4.12.4 IMPACT OF ALTERNATIVE C

Land Use Authorizations

Identification of avoidance areas (158,050 acres), including all ACECs, some NLCS units, cultural sites eligible for the NHRHP, and designated critical habitat would restrict the opportunity for and feasibility of rights-of-way authorizations through the application of special stipulations to development within these areas. Identification of exclusion areas (151,410 acres) for all rights-of-way, a portion of which is non-discretionary, would reduce the acreage available for rights-of-way. This would result in a 77% increase in areas with right-of-way restrictions.

The identification of ACECs, NLCS units, designated critical habitat, SRMAs, and VRM Class I and II as exclusion areas (273,710 acres) for utility scale renewable energy development would reduce the acreage available for right-of-ways granted for renewable energy development if new technologies provide means to produce energy in low potential areas. Areas where the exclusion of utility scale renewable energy development would potentially have immediate impact include Hopper Mountain and Horse Canyon ACECs and designated critical habitat. These areas comprise approximately 60% of the area identified as having high potential for wind energy within the Decision Area.

4.12.5 IMPACT OF ALTERNATIVE D

Land Use Authorizations

Identification of avoidance areas (158,050 acres), including all ACECs, some NLCS units, cultural sites eligible for the NRHP, and designated critical habitat would restrict the opportunity for and feasibility of rights-of-way authorizations through the application of special stipulations to development within these areas. Identification of exclusion areas (151,410 acres) for all rights-of-way, a portion of which is non-discretionary, would reduce the acreage available for rights-of-way. This would result in a 77% increase in areas with right-of-way restrictions.

The identification of ACECs, NLCS units, designated critical habitat, SRMAs, and VRM Class I and II as exclusion areas (273,710 acres) for utility scale renewable energy development would reduce the acreage available for right-of-ways granted for renewable energy development if new technologies provide means to produce energy in low potential areas. Areas where the exclusion of utility scale renewable energy development would potentially have immediate impact include Hopper Mountain and Horse Canyon ACECs and designated critical habitat. These areas comprise approximately 60% of the area identified as having high potential for wind energy within the Decision Area.

4.12.6 IMPACT OF ALTERNATIVE E

Land Use Authorizations

Identification of avoidance areas (96,210 acres), including all ACECs and some NLCS units would restrict the opportunity for and feasibility of rights-of-way authorizations through the application of special stipulations to development within these areas. Identification of exclusion areas (121,300 acres) for all rights-of-way, a portion of which is non-discretionary, would reduce the acreage available for rights-of-way. This would result in a 54% increase in areas with right-of-way restrictions. Rights-of-way related to renewable energy development would not be further restricted.

4.13 LIVESTOCK GRAZING

Public lands within the Bakersfield FO may be allocated as either Available or Unavailable for livestock grazing. Lands available for livestock grazing support livestock grazing operations within the region or provide opportunities for the development of such operations. The vast majority of

public lands grazing allotments are utilized in conjunction with intermingled private lands which act as the base for the livestock operations.

Existing livestock grazing operations and future opportunities would be impacted when the area available for livestock grazing is reduced or restrictions on such use (i.e., the level, timing or type of use allowed) curtail the benefits provided by the use of those areas.

METHODS OF ANALYSIS

The analysis of impacts to livestock grazing focuses on the amount of lands allocated as either Available or Unavailable for livestock grazing within the public lands portion of the Decision Area for which management allocations have been made (402,800 acres). The analysis of impacts on the social and economic values related to regional livestock grazing is addressed in the *Social and Economic Conditions and Environmental Justice* section of this Chapter.

Direct impacts to livestock grazing (operations and opportunities) result from management actions that alter the amount of land that is Available or Unavailable for livestock grazing. Additional direct impacts to livestock grazing operations result from management actions that impose restrictions on the amount (AUMs), area, timing, or type of livestock grazing that could occur on lands allocated as Available for livestock grazing.

Indirect impacts to livestock grazing operations can result from actions that restrict livestock grazing in such a way as to necessitate fencing or other actions to control livestock from any unauthorized use of the adjacent public lands. In addition livestock grazing may be indirectly impacted from environmental causes such as wildfire, drought or climate change that may diminish the productivity of land and therefore available forage.

Impacts are quantitatively described by the acreage change in livestock grazing opportunities. Impacts to livestock grazing operations are generally described qualitatively.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Livestock Grazing: Biological Resources, Cultural Resources, Wildland Fire Ecology and Management, Comprehensive Trails and Travel Management, Recreation and Visitor Services, and Special Designations. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- Overall productivity, sustainability, and viability of rangelands and the livestock operations that depend on them are achieved through accomplishing the fundamentals of rangeland health.
- Application of the appropriate Central California Guidelines for Livestock Grazing Management to the applicable grazing authorizations as needed to meet the Standards of

Rangeland Health will beneficially impact livestock grazing operations and opportunities by ensuring rangelands are productive on a sustained basis.

- Actions associated with other resources or programs that minimize or eliminate surface-disturbing activities or protect water resources would have beneficial impacts on available rangeland resources, although not necessarily livestock grazing operations or opportunities.
- Seventy-five percent of acres allocated as Available for livestock grazing but without a current authorization are estimated to result in new grazing authorizations on those lands within the life of the plan. The reasonably foreseeable levels of permitted grazing use in those new authorizations are projected given an estimated average stocking rate of five acres/AUM.
- Additional livestock management strategies (such as herding or the installation of fencing) will be needed to implement allocations of Unavailable for livestock grazing. Periodic unauthorized grazing may still occur, especially on isolated, scattered parcels.
- Range improvements may be removed or allowed to remain in areas made Unavailable and these actions would be subject to site-specific assessments to comply with NEPA.

4.13.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Management of both biological and cultural resources in ACECs and SMAs generally prescribes actions that reduce livestock grazing opportunities and limits the extent of operations for the protection of these resources. The majority of these areas has not historically been of interest to the livestock grazing industry and would not likely have been allotted.

Specifically within the Fresno and Madera counties portion of the decision area, prescribed burns would be used to increase livestock forage available. Short term losses in forage availability from such vegetation treatments will be replaced by long term increases in both the quality and quantity of forages.

Currently unallocated lands (26,900 acres) would remain unallocated and would be unable to be authorized for any level of livestock grazing. Lands currently allocated as available for livestock grazing but without a current authorization (20,800 acres) would be expected to increase potential grazing opportunity by 3,100 AUMs over the existing permitted use levels to 37,600 AUMs.

Application of Bakersfield FO livestock grazing management guidelines would continue the same grazing management as the existing conditions. On a landscape scale, implementation of these guidelines would aid in the attainment of the Standards of Rangeland Health, and ultimately, healthy, sustainable forage for continued livestock grazing operations. Operations may be locally restricted through various actions such as the establishment of exclusion fencing, limitations on season of use, or postponement of turn-out dates in accordance with these guidelines based on site specific conditions.

Lack of adequate management of the Keyesville SMA and Temblor area would allow for continued surface disturbance associated with route proliferation and dispersed camping. This disturbance

would decrease productivity of lands through decreased forage quality and quantity. Harassment of livestock away from desired grazing locations would escalate as unmanaged visitation increases.

New information concerning the compatibility of the Blue Ridge ACEC with livestock grazing would not be addressed and this area would remain Unavailable.

Conflicting management decisions between the livestock grazing allocations and the special management for the Lokern ACEC would not be resolved; and the status of livestock grazing in this area would remain open to interpretation.

4.13.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Currently unallocated lands would be allocated as either Available or Unavailable for livestock grazing allowing the authorization of livestock grazing operations as appropriate; beyond this, no impacts are considered to be common to all action alternatives.

4.13.3 IMPACT OF ALTERNATIVE B

Identification of priority communities, habitats and species; areas of ecological importance; ACECs proposed for the protection of biological resources generally prescribe management that reduces livestock grazing opportunities and limits the extent of operations for the protection of these resources. However, new information concerning compatibility of livestock grazing in the Blue Ridge ACEC would allow it to be designated Available, therefore increasing livestock grazing opportunities locally. On the contrary, new information concerning compatibility of livestock grazing in portions of the Kaweah ACEC would cause them to be allocated as Unavailable, therefore decreasing livestock grazing opportunities locally.

The allocation of the Atwell Island area of ecological importance as Available for livestock grazing only for the purpose of vegetation management to meet resource objectives (other than the production of livestock forage) provides new opportunities but would limit operations dependent on site specific needs for the San Joaquin Valley suite of special status species.

The use of wildland fire in certain Fire Management Units (FMUs) for resource benefit will be beneficial to livestock grazing operations and opportunities in those FMUs by indirectly providing improved forage conditions. Short term losses in forage availability from such vegetation treatments will be replaced by long term increases in both the quality and quantity of forages.

Restrictive designations (non-motorized or closed) of 339 miles of routes, most of which are within grazing allotments, would impact livestock grazing operations by limiting the ability to utilize motorized modes of transport for this activity. This impact could be alleviated through route redesignation associated with site-specific authorizations.

Through the incorporation of previously unallocated lands and adjustments in availability based on resource objectives 336,500 acres would be available for livestock grazing; a 6% increase from the existing condition. Lands allocated as Available for livestock grazing but without a current

authorization (40,000 acres) would be expected to increase potential grazing opportunity by 6,000 AUMs over the existing permitted use levels to 40,000 AUMs.

Allocation of an additional 5,000 acres as Unavailable over the existing condition (1% increase) results from management prescriptions to protect biological resources, specifically special management for Cyrus Canyon and portions of the Kaweah ACECs and priority species and habitats. This amounts to a reduction of 500 AUMs in five existing allotments.

Application of Bakersfield FO livestock grazing management guidelines would continue much of the same grazing management as the existing conditions. Minor adjustments, however, would clarify management for areas with special status species by removing unnecessary restrictions. On a landscape scale, implementation of these guidelines would aid in the attainment or exceedance of the Standards of Rangeland Health, and ultimately, healthy, sustainable forage for continued livestock grazing operations. Operations may be locally restricted through such actions as the establishment of exclusion fencing, limitations on season of use, or postponement of turn-out dates in accordance with these guidelines based on site specific conditions.

Designation of the Atwell Island, Case Mountain, Chimney Peak and Fresno River ERMAs would provide some management of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Harassment of livestock away from desired grazing locations in the allotments may continue.

Designation and management of the Keyesville, San Joaquin River Gorge and Temblor SRMAs would provide supervision of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation and dispersed camping. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Increased BLM presence (e.g., visitor patrols) may reduce the level of harassment of livestock away from desired grazing locations.

Allocating the entire Cyrus Canyon ACEC (5,400 acres), an area that is currently allotted and grazed, as Unavailable for livestock grazing for the protection of Shevock's monkeyflower may unnecessarily eliminate livestock grazing opportunities from an area far greater than required to achieve its protection than of the extent of known populations.

Prescriptive management applied to lands managed for wilderness characteristics would allow livestock grazing to continue at the level of initial authorization (including associated facilities) prior to designation. Opportunity for livestock grazing would not be lost; however, future increases in operations in these areas would be curtailed. New facilities would be restricted so as to not impair wilderness characteristics. In addition, designation as OHV Closed area would restrict livestock support activities (e.g., rangeland improvement maintenance, livestock gathering, etc.) to primitive, non-motorized modes of transport (pedestrian or equestrian).

4.13.4 IMPACT OF ALTERNATIVE C

Identification of priority communities, habitats and species; areas of ecological importance; ACECs proposed for the protection of biological resources generally prescribe management that reduces livestock grazing opportunities and limits the extent of operations for the protection of these resources. However, new information concerning compatibility of livestock grazing in the Blue Ridge ACEC would allow it to be designated Available, therefore increasing livestock grazing opportunities locally. On the contrary, new information concerning compatibility of livestock grazing in portions of the Kaweah ACEC would cause them to be designated Unavailable, therefore decreasing livestock grazing opportunities locally.

The allocation of the Atwell Island area of ecological importance as Available for livestock grazing only for the purpose of vegetation management to meet resource objectives (other than the production of livestock forage) provides new opportunities but would limit operations dependent on site specific needs for the San Joaquin Valley suite of special status species.

The use of wildland fire in certain Fire Management Units (FMUs) for resource benefit will be beneficial to livestock grazing operations and opportunities in those FMUs by indirectly providing improved forage conditions. Short term losses in forage availability from such vegetation treatments will be replaced by long term increases in both the quality and quantity of forages.

The designation of OHV Closed areas (specifically lands managed for wilderness characteristics and Lokern-Buena Vista ACEC) would restrict livestock support activities (e.g., rangeland improvement maintenance, livestock gathering, etc.) to primitive, non-motorized modes of transport (pedestrian or equestrian).

Restrictive designations (non-motorized or closed) of 619 miles of routes, most of which are within grazing allotments, would impact livestock grazing operations by limiting the ability to utilize motorized modes of transport for this activity. This impact could be alleviated through route redesignation associated with site-specific authorizations.

Through the incorporation of previously unallocated lands and adjustments in availability based on resource objectives 330,000 acres would be Available for livestock grazing: a 4% increase from the existing condition. Lands allocated as Available for livestock grazing but without a current authorization (36,700 acres) would be expected to increase potential grazing opportunity by 5,500 AUMs over the existing permitted use levels to 37,800 AUMs.

Allocation of an additional 11,500 acres as Unavailable over the existing condition (3% increase) results from management prescriptions to protect biological resources, specifically special management for all or portions of several ACECs and priority species and habitats. These Unavailable allocations would amount to a reduction of 1,700 AUMs in thirteen existing allotments from existing conditions. In addition, to achieve the allocation of Unavailable for livestock grazing within riparian corridors or habitats, further livestock management strategies or approximately 40 miles of new fencing is estimated to be necessary to control livestock from entering these areas.

Application of Bakersfield FO livestock grazing management guidelines would continue much of the same grazing management as the existing conditions. Minor adjustments, however, would clarify management for areas with special status species by removing unnecessary restrictions. On a landscape scale, implementation of these guidelines would aid in the attainment or exceedance of the Standards of Rangeland Health, and ultimately, healthy, sustainable forage for continued livestock grazing operations. Operations may be locally restricted through such actions as the establishment of exclusion fencing, limitations on season of use, or postponement of turn-out dates in accordance with these guidelines based on site specific conditions.

Designation of the Atwell Island, Case Mountain, Chimney Peak and Temblor ERMAs would provide some management of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Harassment of livestock away from desired grazing locations in the allotments may continue.

Designation and management of the Keyesville and San Joaquin River Gorge SRMAs would provide supervision of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation and dispersed camping. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Increased BLM presence (e.g., visitor patrols) may reduce the level of harassment of livestock away from desired grazing locations.

Allocating the entire Cyrus Canyon ACEC (5,400 acres), an area that is currently allotted and grazed, as Unavailable for livestock grazing for the protection of Shevock's monkeyflower may unnecessarily eliminate livestock grazing opportunities from an area far greater than required to achieve its protection than of the extent of known populations.

Prescriptive management applied to lands managed for wilderness characteristics would allow livestock grazing to continue at the level of initial authorization (including associated facilities) prior to designation. Opportunity for livestock grazing would not be lost; however, future increases in operations in these areas would be curtailed. New facilities would be restricted so as to not impair wilderness characteristics.

4.13.5 IMPACT OF ALTERNATIVE D

Although previously unallocated lands would be incorporated, the entire grazing decision area would be allocated as Unavailable for livestock grazing. The process to terminate existing grazing leases would be initiated upon approval of the ROD. Livestock grazing would cease to be a feature on the landscape of public lands within 2 years after required permittee/lessee notification, with far reaching implications to livestock operators including feasibility of continued ranching on their base property.

Existing authorized range improvements may be removed from the public lands under this alternative. Where grazing permittees or lessees have documented interest in these improvements,

the permittee or lessee shall receive reasonable compensation from the BLM for the depreciated value of their interest.

The enforcement of the allocation as Unavailable would place extreme financial burden on both the BLM (e.g., required patrol to implement) and the livestock owners (i.e., installation of fences) likely resulting in the failure of the livestock operation in many cases. The *Social and Economic Conditions and Environmental Justice* section of this chapter, discusses the social and economic impacts from implementing these allocations in further detail.

In excess of 1,000 miles of new fencing may be necessary to prevent livestock from entering the 402,800 acres of land allocated as Unavailable for livestock grazing. This fencing (primarily a responsibility of the livestock owners) would have repercussions beyond public lands impacting the continued function of adjacent private lands as a grazing unit through the interruption of livestock movement, elimination of access to preferential grazing areas (e.g., livestock watering sources, loafing and bedding areas), and ultimately making some portions of private property unusable. Direct impacts to the productivity of private lands as a result of the extensive fencing (e.g., livestock trailing around newly installed fences resulting in surface disturbance and subsequent increased potential for accelerated erosion) may indirectly impact public lands resources.

4.13.6 IMPACT OF ALTERNATIVE E

Identification of priority communities, habitats and species; areas of ecological importance; ACECs proposed for the protection of biological resources generally prescribe management that reduces livestock grazing opportunities and limits the extent of operations for the protection of these resources. However, new information concerning compatibility of livestock grazing in the Blue Ridge ACEC would allow it to be designated Available, therefore increasing livestock grazing opportunities locally. On the contrary, new information concerning compatibility of livestock grazing in portions of the Kaweah ACEC would cause them to be designated Unavailable, therefore decreasing livestock grazing opportunities locally.

The identification of the Atwell Island area of ecological importance as Available for livestock grazing only for the purpose of vegetation management to meet resource objectives (other than the production of livestock forage) would limit operations dependent on site specific needs for the San Joaquin Valley suite of special status species.

The use of wildland fire in certain Fire Management Units (FMUs) for resource benefit will be beneficial to livestock grazing operations and opportunities in those FMUs by indirectly providing improved forage conditions. Short term losses in forage availability from such vegetation treatments will be replaced by long term increases in both the quality and quantity of forages.

Restrictive designations (non-motorized or closed) of 96 miles of routes, most of which are within grazing allotments, would impact livestock grazing operations by limiting the ability to utilize motorized modes of transport for this activity. This impact could be alleviated through route redesignation associated with site-specific authorizations.

Through the incorporation of previously unallocated lands and adjustments in availability based on resource objectives 353,600 acres would be available for livestock grazing: a 10% increase from the existing condition. Lands allocated as available for livestock grazing but without a current authorization (52,400 acres) would be expected to increase potential grazing opportunity by 7,900 AUMs over the existing permitted use levels to 42,300 AUMs.

The allocation of 12,100 acres less than the existing condition (a decrease of 3%) as Unavailable would result from management prescriptions to protect biological resources, specifically known populations of priority species and habitats. Some land previously Unavailable would require future efforts to improve suitability before any authorization is made. This allocation would amount to a reduction of 100 AUMs in five existing allotments across the decision area from existing conditions. Existing grazing leases would be amended upon approval of the ROD.

Application of Bakersfield FO livestock grazing management guidelines would continue much of the same grazing management as the existing conditions. Minor adjustments, however, would clarify management for areas with special status species by removing unnecessary restrictions. On a landscape scale, implementation of these guidelines would aid in the attainment or exceedance of the Standards of Rangeland Health, and ultimately, healthy, sustainable forage for continued livestock grazing operations. Operations may be locally restricted through such actions as the establishment of exclusion fencing, limitations on season of use, or postponement of turn-out dates in accordance with these guidelines based on site specific conditions.

Designation of the Atwell Island, Case Mountain, Fresno River and North Fork ERMAs would provide some management of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Harassment of livestock away from desired grazing locations in the allotments may continue.

Designation and management of the Chimney Peak, Keyesville, San Joaquin River Gorge and Temblor SRMAs would provide supervision of existing recreation uses, specifically this may reduce surface disturbance associated with route proliferation and dispersed camping. Reduced surface disturbance would increase productivity of lands through increased forage quality and quantity. Increased BLM presence (e.g., visitor patrols) may reduce the level of harassment of livestock away from desired grazing locations.

Allocating the Cyrus Canyon area of ecological importance as Available for livestock grazing except for the known populations of Shevock's monkeyflower (105 acres) would provide continued opportunity for livestock operations on the majority of this area while providing adequate protection for this priority species, meeting the Bakersfield grazing guidelines, and achieving the Standards of Rangeland Health.

4.14 MINERALS MANAGEMENT

The purpose of the minerals management program is to support development of mineral resources on public lands in an environmentally sound manner.

Minerals management considers the impacts on commercial/industrial development, casual use, and recreational collection of mineral resources. These impacts result from increasing, limiting, or preventing the development of federal mineral estate and the land base on which they can occur. In addition to impacts to the availability of federal mineral estate to minerals development, impacts may alter the projected reasonable foreseeable development scenario (e.g., increasing or decreasing predicted levels of development).

METHODS OF ANALYSIS

The area of analysis for mineral resources varies by mineral type, but includes the entire Decision Area. As such, analysis of impacts on fluid mineral development considers 1,162,210 acres and solid mineral development (solid (non-energy) leasable, locatable, and salable) considers 1,046,290 acres.

Direct impacts to minerals are considered to be those that allow or prohibit the development of federal mineral estate. Indirect impacts include those restrictions implemented through terms and conditions, special stipulations, and conditions of approval (COAs). Furthermore indirect impacts to mineral development may extend to the feasibility of development itself.

Absence of a complete inventory with regard to ancillary facilities authorized in conjunction with mineral development (e.g., roads, pipelines, etc.) limits the ability to describe the extent these features may be impacted by management decisions; however, qualitative analysis is provided as appropriate.

To quantify impacts to mineral management, the acreage available for mineral development for each mineral type is used. This is further described by the areas closed with high potential for leasable and salable minerals or withdrawn with moderate to high potential locatable minerals. The mineral potential was assessed for each mineral type and categorized as "high", "moderate", "low", and "none" using the BLM's mineral potential classification system (BLM Manual 3060). Indirect impacts are described qualitatively, generally with regard to the reasonable foreseeable development scenario (Appendix M) and feasibility of new developments.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the Minerals Management: Biological Resources, Cultural Resources, Soils, Visual Resources, Comprehensive Trail and Travel Management, Recreation and Visitor Services and Special Designations. Management decisions for those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The analysis is based on the following assumptions:

- Within the Decision Area there are: 158,500 acres with high oil and gas potential; 35,080 acres with solid (non-energy) leasable potential; 257,690 acres with locatable mineral potential; and 51,280 acres with salable mineral potential.
- Leaseholders and claimants have the right to explore, develop, and produce mineral resources from any valid, existing lease or claim. These existing rights continue even if the area is proposed to be closed or withdrawn, subject to continued production beyond the term of the lease or validity examination (respectively).
- New surface use stipulations for oil and gas development are only applied to new leases (those leased after the final approval of the ROD). Post-lease authorizations (e.g., APDs, road/pipeline ROWs) could, however, be encumbered by COA restrictions on a case-by-case basis, as required through project-specific analysis.
- No action taken under any alternative would result in deviation from the development described in the RFD (Appendix M) for fluid, locatable, and salable minerals.
- Mineral resources would be considered unrecoverable in areas designated unavailable for mineral development either through closure or withdrawal.
- Mineral development can occur in areas that remain available outside of areas of high potential; however, these endeavors are not expected to be productive based on currently available technologies. Furthermore, although areas may be classified as having high potential, specific locations within these areas may not have development potential.
- Identification of mineral potential is accurate and few mineral discoveries of significance will be made outside those areas with historic exploration and development.
- Restrictive designations (non-motorized, authorized, or closed) of routes would impact prospecting and exploration activities by limiting the ability to utilize motorized modes of transport for these activities. Impact is not expected on development and extraction as routes may be created and/or redesignated through site-specific authorizations.

4.14.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Fluid Minerals

Fluid mineral (oil and gas) development would continue to be available on 1,012,080 acres. Of the areas closed, 3,740 acres have high development potential for oil and gas; this is 2% of the area with high potential.

New leases would be issued with Standard Stipulations on 30% of the area available. In addition, the major constraint stipulation NSO would apply to new leases on 4,910 acres, of which 1,460 acres have development potential. Leasing with standard stipulations would not absolve operators from their obligations to comply various laws, regulations and policies (e.g., ESA and NHPA).

Fluid mineral (geothermal) development would continue to be available on 1,015,240 acres. Of these areas closed, 140,100 acres have potential for geothermal development.

Solid (non-energy) Leasable Minerals

Solid (non-energy) leasable mineral development would continue to be available on 817,690 acres. Of the areas closed, 493 acres (1%) have development potential for solid non-energy leasable minerals.

Locatable Minerals

The ability to stake a mining claim for the development of locatable minerals would continue to be available on 914,570 acres; the unavailable area includes 121,590 acres of existing withdrawals. This is a decrease of 1% from the existing condition due to additional acreage proposed for withdrawal for the protection of other resources. Of the areas proposed for withdrawal, 21,330 acres (8%) have potential for locatable minerals development.

The opportunity for collecting a rare variety of tubucular green moss agate at the Horse Canyon Agate beds – a world-class mineral collecting locality, would continue to be available.

Salable Minerals

Salable mineral development would continue to be available on 817,690 acres. Of the areas closed, 7,950 acres (16%) have potential for salable minerals development. In addition to total closure a number of salable mineral resources are restricted to administrative use only, therefore, eliminating commercial development from these sources.

4.14.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Fluid Minerals

The types and styles of facilities associated with fluid mineral development may be altered through the application of conditions of approval (COAs) associated with site-specific projects to achieve non-mineral resource goals and objectives (e.g., BMPs for VRM and soils, SOPs and Avoidance Measures for threatened and endangered species); see Appendices B and L. While it is unlikely that these terms and conditions would limit fluid mineral development they may delay projects and require additional expense to implement these measures. These project-level COAs would be applied to both new and existing leases.

Locatable Minerals

Existing withdrawals preventing the location of mining claims would continue on 121,590 acres. Areas requiring Plans of Operations for locatable mineral exploration and development may be increased from the existing conditions due to special designations and specific resource objectives.

The types and styles of facilities associated with locatable mineral development may be altered through the application of terms and conditions associated with site-specific projects to achieve non-mineral resource goals and objectives (e.g., BMPs for VRM and soils, SOPs and Avoidance Measures for threatened and endangered species); see Appendices B and L. These terms and

conditions may limit development, delay projects, and require additional expense to implement these measures, which could make small scale operations infeasible.

Activities permitted under the causal use component of locatable mineral surface management, specifically for recreational mining and prospecting, would be further refined through the application of special rules governing mining and prospecting methods. Throughout the Decision Area these additional restrictions would limit access to regularly prospected areas requiring disturbance to move further from existing routes and prohibit the removal of material offsite for processing. In effect this would narrow the range of opportunity for casual use and require the submittal of a Notice of Intent for activities that do not currently require it. Additional limitations at Keyesville and San Joaquin River Gorge areas would further limit the opportunity for recreational gold prospecting activities.

Salable Minerals

The types and styles of facilities associated with salable mineral development may be altered through the application of terms and conditions associated with site-specific projects to achieve non-mineral resource goals and objectives (e.g., BMPs for VRM and soils, SOPs and Avoidance Measures for threatened and endangered species); see Appendices B and L. While it is unlikely that these terms and conditions would limit development they may delay projects and require additional expense to implement these measures.

4.14.3 IMPACT OF ALTERNATIVE B

Fluid Minerals

Fluid mineral (oil and gas) development would continue to be available on 999,950 acres, a decrease of 1% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas closed 3,740 acres have high development potential for oil and gas; this is 2% of the area with high potential.

No new leases would be issued with Standard Stipulations or moderate constraints, as such; all new leases would be subject to some form of major constraint with the potential to limit fluid mineral extraction from all or a portion of the leased parcel. Specifically, the major constraint stipulation NSO would apply to new leases on a minimum of 3,880 acres, of which 1,550 acres have development potential. Overall, the increased area of major constraints would have little impact on development as operators are already required to comply with the various laws, regulations and policies these stipulations invoke.

The closure of 10,000 acres of highly industrialized oil fields to unauthorized public access would decrease the conflict between incompatible public uses (OHV recreation and target shooting) and the industrial setting of these oil fields. In addition, designation of the majority of routes in oil fields beyond the public closure as Authorized further reduces conflicts and incompatible use.

Fluid mineral (geothermal) development would continue to be available on 977,390 acres, a decrease of 1% from the existing condition due to increased acreage of special designations for the protection of other resources. Of these areas closed 146,180 acres have potential for geothermal development.

Solid (non-energy) Leasable Minerals

Solid (non-energy) leasable mineral development would continue to be available on 818,330 acres, essentially the same as the existing condition. Of the areas closed 740 acres (2%) have development potential for solid non-energy leasable minerals.

The types and styles of facilities associated with solid (non-energy) leasable mineral development may be altered through the application of terms and conditions associated with site-specific projects to achieve non-mineral resource goals and objectives (e.g., BMPs for VRM and soils, SOPs and Avoidance Measures for threatened and endangered species); see Appendices B and L. While it is unlikely that these terms and conditions would limit development they may delay projects and require additional expense to implement these measures.

Locatable Minerals

The ability to stake a mining claim for the development of locatable minerals would continue to be available on 895,650 acres, a decrease of 2% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas proposed for withdrawal, 28,910 acres (10%) have potential for locatable minerals development.

The requirement of an authorization or mining notice for casual use prospecting activity, other than gold panning, on the Fresno River ERMA would narrow the range of opportunity for casual use.

Special management for the Horse Canyon ACEC would prohibit rock hounding, including the casual collection of fossils, mineral agates, and semi-precious stones throughout the ACEC, including the Horse Canyon Agate beds within the Decision Area. This would eliminate the opportunity for collecting this rare variety of tubucular green moss agate at this world-class mineral collecting locality.

Salable Minerals

Salable mineral development would continue to be available on 818,090 acres, essentially the same as the existing condition; however, the specific areas closed differ from those existing. Of the areas closed, 20,980 acres (41%) have potential for salable minerals development. This is a decrease of 34% in the available area with development potential from the existing conditions and result in a subsequent reduction in development from the reasonably foreseeable development scenario for salable minerals. The substantial reduction in areas available with potential with no increase in total areas closed, results from closures lifted from areas with no potential and being applied to areas with potential.

In addition to total closure a number of salable mineral resources are restricted to administrative use only, therefore, eliminating commercial development from these sources. These administrative use areas with potential include: Cyrus Canyon, Kettleman Hills, Lokern-Buena Vista, and Piute Cypress ACECs.

4.14.4 IMPACT OF ALTERNATIVE C

Fluid Minerals

Fluid mineral (oil and gas) development would continue to be available on 966,160 acres, a decrease of 5% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas closed, 15,610 acres have high potential for oil and gas; this is 10% of the area with high potential. These closed areas have not historically been of interest to the oil and gas industry and would not likely have been developed. These closures are a result of the prescribed management of the federal mineral estate underlying the Chimineas Unit of the Carrizo Plain Ecological Reserve and lands managed for compensation regardless of surface manager, for the protection of biological resources.

No new leases would be issued with Standard Stipulations or moderate constraints, as such; all new leases would be subject to some form of major constraint with the potential to limit fluid mineral extraction from all or a portion of the leased parcel. Specifically, the major constraint stipulation NSO would apply to new leases on a minimum of 8,400 acres, of which 3,990 acres have development potential. Overall, the increased area of major constraints would have little impact on development as operators are already required to comply with the various laws, regulations and policies these stipulations invoke.

The closure of 10,000 acres of highly industrialized oil fields to unauthorized public access would decrease the conflict between incompatible public uses (OHV recreation and target shooting) and the industrial setting of these oil fields.

The designation of OHV Closed areas (specifically Lokern-Buena Vista ACEC) would restrict mineral exploration and development activities including geophysical survey to primitive, non-motorized vehicles.

The designation of the majority of routes in oil fields as Closed creates conflict with existing use and authorizations. It is expected potentially illegal use of these routes by operators would continue until such time the route designations were appropriately adjusted to incorporate a complete inventory of existing authorizations (i.e., routes created in associated with APDs, Sundry Notices or ROWs). Some routes are not covered by such authorizations and would ultimately remain closed, this may inconvenience operators but would not limit their ability to access approved facilities.

Fluid mineral (geothermal) development would continue to be available on 956,780 acres, a decrease of 3% from the existing condition due to increased acreage of special designations for the protection of other resources. Of these areas closed 161,550 acres have potential for geothermal development.

Solid (non-energy) Leasable Minerals

Solid (non-energy) leasable mineral development would cease to be available, with the exception of existing leases. As a result there would be no reasonably foreseeable development of this mineral type in the Decision Area (a reduction of two projects over the life of the plan) and, consequently, resonating impacts to the social and economic conditions within the Planning Area.

Locatable Minerals

The ability to stake a mining claim for the development of locatable minerals would continue to be available on 862,030 acres with locatable mineral potential, a decrease of 6% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas proposed for withdrawal, 35,510 acres (13%) have potential for locatable minerals development.

Special management for the Horse Canyon ACEC would prohibit rock hounding, including the casual collection of fossils, mineral agates, and semi-precious stones throughout the ACEC, including the Horse Canyon Agate beds within the Decision Area. This would eliminate the opportunity for collecting this rare variety of tubucular green moss agate at this world-class mineral collecting locality.

Salable Minerals

Salable mineral development would continue to be available on 781,120 acres, a decrease of 4% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas closed, 21,110 acres (41%) have potential for salable minerals development. This is a decrease of 25% in the available area with development potential from the existing conditions and result in a subsequent reduction in development from the reasonably foreseeable development scenario for salable minerals.

In addition to total closure a number of salable mineral resources are restricted to administrative use only, therefore, eliminating commercial development from these sources. These administrative use areas with potential include: Cyrus Canyon, Kettleman Hills, Lokern-Buena Vista, and Piute Cypress ACECs.

4.14.5 IMPACT OF ALTERNATIVE D

Fluid Minerals

Fluid mineral (oil and gas) development would continue to be available on 966,160 acres, a decrease of 5% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas closed, 15,610 acres have high potential for oil and gas; this is 10% of the area with high potential. These closed areas have not historically been of interest to the oil and gas industry and would not likely have been developed. These closures are a result of the prescribed management of the federal mineral estate underlying the Chimineas Unit of the Carrizo

Plain Ecological Reserve and lands managed for compensation regardless of surface manager, for the protection of biological resources.

No new leases would be issued with Standard Stipulations or moderate constraints, as such; all new leases would be subject to some form of major constraint with the potential to limit fluid mineral extraction from all or a portion of the leased parcel. Specifically, the major constraint stipulation NSO would apply to new leases on a minimum of 8,400 acres, of which 3,990 acres have development potential. Overall, the increased area of major constraints would have little impact on development as operators are already required to comply with the various laws, regulations and policies these stipulations invoke.

The closure of 10,000 acres of highly industrialized oil fields to unauthorized public access would decrease the conflict between incompatible public uses (OHV recreation and target shooting) and the industrial setting of these oil fields.

The designation of OHV Closed areas (specifically Lokern-Buena Vista ACEC) would restrict mineral exploration and development activities including geophysical survey to primitive, non-motorized vehicles.

The designation of the majority of routes in oil fields as Closed creates conflict with existing use and authorizations. It is expected potentially illegal use of these routes by operators would continue until such time the route designations were appropriately adjusted to incorporate a complete inventory of existing authorizations (i.e., routes created in associated with APDs, Sundry Notices or ROWs). Some routes are not covered by such authorizations and would ultimately remain closed, this may inconvenience operators but would not limit their ability to access approved facilities.

Fluid mineral (geothermal) development would continue to be available on 956,780 acres, a decrease of 3% from the existing condition due to increased acreage of special designations for the protection of other resources. Of these areas closed 161,550 acres have potential for geothermal development.

Solid (non-energy) Leasable Minerals

Solid (non-energy) leasable mineral development would cease to be available, with the exception of existing leases. As a result there would be no reasonably foreseeable development of this mineral type in the Decision Area (a reduction of two projects over the life of the plan) and, consequently, resonating impacts to the social and economic conditions within the Planning Area.

Locatable Minerals

The ability to stake a mining claim for the development of locatable minerals would continue to be available on 862,030 acres with locatable mineral potential, a decrease of 6% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas proposed for withdrawal, 35,510 acres (13%) have potential for locatable minerals development.

Special management for the Horse Canyon ACEC would prohibit rock hounding, including the casual collection of fossils, mineral agates, and semi-precious stones throughout the ACEC, including the Horse Canyon Agate beds within the Decision Area. This would eliminate the opportunity for collecting this rare variety of tubucular green moss agate at this world-class mineral collecting locality.

Salable Minerals

Salable mineral development would continue to be available on 781,120 acres, a decrease of 4% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas closed, 21,110 acres (41%) have potential for salable minerals development. This is a decrease of 25% in the available area with development potential from the existing conditions and result in a subsequent reduction in development from the reasonably foreseeable development scenario for salable minerals.

In addition to total closure a number of salable mineral resources are restricted to administrative use only, therefore, eliminating commercial development from these sources. These administrative use areas with potential include: Cyrus Canyon, Kettleman Hills, Lokern-Buena Vista, and Piute Cypress ACECs.

4.14.6 IMPACT OF ALTERNATIVE E

Fluid Minerals

Fluid mineral (oil and gas) development would continue to be available on 1,013,010 acres; essentially the same as the existing condition. Of the areas closed, 2,100 acres have high development potential for oil and gas; this is 1% of the area with high potential.

No new leases would be issued with Standard Stipulations or moderate constraints, as such; all new leases would be subject to some form of major constraint with the potential to limit fluid mineral extraction from all or a portion of the leased parcel. Specifically, the major constraint stipulation NSO would apply to new leases on a minimum of 3,590 acres, of which 3,110 acres have development potential. Overall, the increased area of major constraints would have little impact on development as operators are already required to comply with the various laws, regulations and policies these stipulations invoke.

Public access to highly industrialized oil fields would continue the conflicts between incompatible public uses (OHV recreation and target shooting) and the industrial setting of these oil fields.

Fluid mineral (geothermal) development would continue to be available on 990,450 acres; essentially the same as the existing condition. Of these areas closed 140,720 acres have potential for geothermal development.

Solid (non-energy) Leasable Minerals

Solid (non-energy) leasable mineral development would continue to be available on 896,830 acres, an increase of 8% from the existing condition. Of the areas closed 320 acres (1%) have development potential for solid non-energy leasable minerals.

The types and styles of facilities associated with solid (non-energy) leasable mineral development may be altered through the application of terms and conditions associated with site-specific projects to achieve non-mineral resource goals and objectives (e.g., BMPs for VRM and soils, SOPs and Avoidance Measures for threatened and endangered species); see Appendices B and L. While it is unlikely that these terms and conditions would limit development they may delay projects and require additional expense to implement these measures.

Locatable Minerals

The ability to stake a mining claim for the development of locatable minerals would continue to be available on 906,930 acres, a decrease of 1% from the existing condition due to increased acreage of special designations for the protection of other resources. Of the areas proposed for withdrawal, 21,610 acres (8%) have potential for locatable minerals development.

The opportunity for collecting a rare variety of tubucular green moss agate at the Horse Canyon Agate beds – a world-class mineral collecting locality, would continue to be available.

Salable Minerals

Salable mineral development would continue to be available on 896,830 acres, an increase of 8% from the existing condition. Of the areas closed 17,580 acres (34%) have potential for salable minerals development. This is a decrease of 18% in the available area with development potential from the existing conditions and result in a subsequent reduction in development from the reasonably foreseeable development scenario for salable minerals.

In addition to total closure a number of salable mineral resources are restricted to administrative use only, therefore, eliminating commercial development from these sources. These administrative use areas with potential include: Kettleman Hills, Lokern-Buena Vista, and Piute Cypress ACECs and the Cyrus Canyon area of critical environmental concern.

4.15 RECREATION AND VISITOR SERVICES

Recreation activities are not managed on federal mineral estate where there is no BLM surface and the surface owner has property rights that allow the restriction of activity on and travel across their lands. The pattern of land ownership results in many parcels of BLM land being inaccessible (or access only resulting from trespass across private property); these areas with no legal public access are considered to have diminished impacts to Recreation and Visitor Services over those areas where legal public access exists.

METHODS OF ANALYSIS

The analysis focuses on public lands (surface) within the Decision Area.

Direct impacts to Recreation and Visitor Services are considered to be those that allow, restrict or prohibit opportunity; including both, the opportunity for access (i.e., public closure) and opportunity to engage in specific activities (e.g., participation in camping or shooting activities). Indirect impacts are considered to be those alter the physical, social or administrative settings (Appendix H). Impacts on settings can either be beneficial by the achievement of a desired setting or adverse through the unwanted shift in setting to either a more primitive or urban environment.

Physical, social and administrative settings are not specifically managed for in areas not designated for recreation management, although these areas do still provide intrinsic recreational values and opportunities. The indicator used to describe the impact on these areas is the availability of opportunities as described by either acreage restrictions or specific activity prohibitions.

For areas specifically managed for recreation (either as ERMA or SRMA) both availability of opportunity and changes to physical, social and administrative settings are used as indicators of impact. As necessitated the average resulting from the three separate settings is used to indicate the change from the existing environment.

Since visitor use patterns are difficult to estimate and dependent on many factors beyond the scope of management (e.g., recreational trends and economy) only qualitative language (e.g., increase, or decrease) is used to describe anticipated impacts on visitation

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the Recreation and Visitor Services: Biological Resources, Cultural Resources, Visual Resources, Comprehensive Trail and Travel Management, Lands and Realty, and Special Designations. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- Recreational activity occurs on all public lands (including those not managed for recreation).
- Designation of Recreation Management Areas increases the ability to protect and enhance the targeted set of activities, experiences and benefits and desired recreation setting characteristics on a long-term basis.
- Actions that afford environmental protection or reduce development (e.g., protection of riparian habitat, closure of roads, restriction on mineral development, or management for VRM Class I or II) generally preserve or maintain more primitive settings; however, if on-the-ground control measures are required to implement/enforce protective measures such

as, signs, fencing, patrols etc., operational and social elements may shift away from the more primitive settings.

- Actions that allow for surface disturbance or development (e.g., OHV use, mineral exploration and extraction, construction of rangeland improvements or establishment of Rights-of-Way), generally promote a more urban setting for both physical and social elements of the setting.
- Intensively developed industrial areas (oil fields) and utility scale renewable energy projects would be considered to be incompatible with recreational use and result in loss of opportunities for public access and recreational activities.
- Only four types of dispersed recreational activity are identified for specific management, namely: equestrian use, hunting, overnight camping and shooting sports (target shooting, paintball and air soft activities etc.). Caving and specialized vehicle recreation also receives specific management although are not considered dispersed activities, due to their dependency on a very specific and infrequently occurring resources.
- Closed OHV Area designations eliminate recreational opportunity related to OHV use. Limited OHV Area designations restrict recreational opportunity related to OHV use to only those routes designated as Motorized unless as permit is given to use Authorized routes; therefore the size of the limited OHV area doesn't impact recreation, however the specific designation of routes does.
- Introduction of fees for service in areas previously free would reduce recreational opportunities for certain segments of the population who cannot afford to pay.
- Management of National Trails promotes recreational opportunities and access, but does not provide additional opportunity.
- Prescriptive management of lands managed for wilderness characteristics and management of WSAs would protect opportunities for solitude and primitive, unconfined recreation types.

4.15.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Identification of the North Fork SMA for the protection of riparian resources, cultural resources, and sensitive vegetation, while improving recreational opportunities would limit the length of stay for visitors to reduce conflicts and increase visitor turnover. Limited opportunities would be available to a larger audience. The capacity of the SMA for such use is severely hindered by the physical nature of the sites (topography). Over the life of the plan, it would be expected that visitor numbers would exceed management capacity endangering public safety and health.

Intermittent closure of public lands to public access, as resource values necessitate (e.g., condor nesting periods if found to be nesting in the area) would be in effect in several ACECs; none of which are managed for recreation. Although the extent of these temporary closures would be limited to the boundaries of the ACECs affected, it is unknown when these closures may be enacted, how long they would last and what specific areas they would affect (a site specific NEPA document and

federal register publication would be required). The effect of these intermittent closures would be localized, and temporarily reduce access and limit recreational activities.

Identification of the Keyesville SMA would manage for low impact recreational types compatible with natural resources including cultural resources and biological values. Management would limit portions of the area to day-use only therefore restricting overnight camping opportunities. This may further limit opportunities for non-primitive recreational types (e.g., OHV use, mountain biking, and recreational gold prospecting).

Management of existing Class II visual resources as VRM Class II within the San Joaquin River Gorge SRMA would result in alteration of the scenic qualities of the area, which may be undesirable and alter the existing physical setting. No VRM Classes would be assigned to other areas of recreational use and therefore existing physical settings may be changed.

The designation of the San Joaquin Gorge SRMA continues unique opportunities for environmental education and interpretation for schools in the local area.

No targeted activities, desired outcomes or benefits are listed for the recreational designations made, which does not satisfy current policy and guidance. Furthermore, providing no other SRMA designations for some of the most intensively visited areas of public land and those providing the most sensitive and/or unique opportunities, fails to adequately provide for recreation management. The majority of recreation management would continue to be reactive to problems and issues; rather than proactively addressing and providing for public use. It is expected that all existing recreation settings would migrate towards more urban settings as visitation increased and more administrative controls were installed to resolve problems with visitation.

Continued and increasing use of the Case Mountain region would over the life of the plan cause both conflicts with adjacent land owners (pressures on their properties resulting from access issues) and resources (e.g., unplanned routes often poorly designed would continue to erode hillsides and associated impacts). In addition the quality of the recreational experiences would be diminished without management controls on levels of use and provision of visitor services (maps, kiosks etc.).

Failure to provide management for public visitation to the Temblor Range area would continue to allow a myriad of issues, namely; continued private property trespass; OHV incursion into the Carrizo Plain National Monument; and route proliferation. Visitation in this area is expected to increase over the life of the plan exacerbating these issues and leading to the continued decline in both recreational opportunity and environmental resources.

Prohibition of certain activities (those receiving specific management) in areas through either ACEC special management, implementation of biological resource management or to achieve desired recreation conditions would reduce opportunity for these activities on public lands. Table 4.15-1 summarizes these restrictions and the percent change from where these activities are currently allowed.

Table 4.15-1
Recreation Opportunities Restricted within the Decision Area - Alternative A

Opportunities	Acres Prohibited	Percent of Decision Area
Equestrian use	450	<1%
Hunting	0	0%
Overnight camping	2,890	<1%
Shooting Sports	127,930	32%

"Acres prohibited" includes areas closed to all forms of public access.

Continued designation of the Back Country Byway supports opportunities associated with Byway interpretation and increases the potential for associated improvements (kiosks, viewing areas etc.) along this route to be developed. The issues concerning connectivity the Long Valley Loop road would diminish the recreational opportunities this designation provides, if not addressed.

4.15.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Intermittent closure of public lands to public access, as resource values necessitate (e.g., condor nesting periods if found to be nesting in the area) would be in effect in several ACECs; none of which are managed for recreation. Although the extent of these temporary closures would be limited to the boundaries of the ACECs affected, it is unknown when these closures may be enacted, how long they would last and what specific areas they would affect (a site specific NEPA document and federal register publication would be required). The effect of these intermittent closures would be localized, and temporarily reduce access and limit recreational activities.

The allocation to "public use" of various cultural resources including historic sites within the Keyesville SRMA and the Piedras Blancas Light Station would support recreational use of these sites as educational and interpretational facilities. These cultural resource allocations increase opportunities for recreation dependent on these resources and would result in increased visitation to these sites over the life of the plan. With specific regard to the Keyesville SRMA, the "public use" allocation of sites within the Gold Fever RMZ directly supports the cultural exploration targeted activities.

VRM Classes would be designated in support of desired physical recreation settings aiding in the attainment and long term protection of these settings.

Designation of SRMAs (Keyesville and San Joaquin River Gorge) and ERMAs (Atwell Island and Case Mountain) would provide specific desired outcomes for recreational settings. Where these outcomes match the existing settings, the current setting would be preserved through recreation management aimed at maintaining it. Table 4.15-2 presents the existing and the prescribed setting (average derived from physical, social and administrative) for the RMZs and ERMAs designated.

Table 4.15-2
Existing and Prescribed Settings for RMZs and ERMAs – Alternatives B, C, D, and E

SRMA/RMZ	Existing Setting	Prescribed Setting
Keyesville SRMA		
The Dam	Front Country	Front Country
French Gulch	Back Country	Middle Country
Gold Fever	Front Country	Front Country
Wallow Rock	Front Country	Rural
San Joaquin River Gorge SRMA		
Pa'san	Middle Country	Middle Country
Wu Ki' Oh	Middle Country	Middle Country
Tahoot	Front Country	Rural
ERMAs		
Atwell Island	Middle Country	Middle Country
Case Mountain	Back Country	Back Country

As can be seen in the table, the trend across the areas designation as RMAs (either SRMAs or ERMAs) is to preserve the existing setting in which recreation is currently occurring. The exception to this is those RMZ which would receive an elevated level of administrative management; therefore primarily shifting the operational setting towards the more urban end of the spectrum. This is generally a shift of just one setting category, but may inadvertently alter the physical and social settings in doing so.

The designation of the Atwell Island ERMA and overlapping identification of an area of ecological importance supports the ERMA objectives through the protection and enhancement of wildlife viewing opportunity.

The designation of the Case Mountain ERMA would focus acquisition efforts on a more suitable public access and parking area therefore increasing public access and over the life of the plan potentially increasing visitation. The ERMA management would enhance existing opportunities and activities specifically mountain biking, through the maintenance and improvement of non-motorized trails. Prohibition of competitive events (i.e., no competitive SRPs issued) and restrictions on the number of commercial permits available (e.g., outfitters and guides) would aid in maintaining the desired Middle Country social and administrative settings of the area.

The designation of the Keyesville SRMA ensures the diverse recreation experiences available in this location; ranging from primitive to intensive recreational types and individual visits to large organized events, receive the appropriate levels of management, including visitor services and environmental monitoring to sustainably support the highest public use area within the Decision Area. Management guidance provided through the identification of RMZs, especially as they relate to the various targeted activities, provides the ground work for subsequent activity-level planning needed to achieve the desired experiences and benefits.

The designation of the San Joaquin Gorge SRMA continues unique opportunities for environmental education and interpretation for schools in the local area. Management guidance provided through the identification of RMZs, especially as they relate to the various targeted activities, provides for the desired experiences and benefits.

The prescriptive management allowing only day-use in various areas (ACECs, areas of ecological importance, and RMZs) would have the most significant impact on The Dam RMZ since visitation and camping within this area comprise the largest proportion of visitation within the Decision Area (estimated 200,000 campers per year). Elimination of overnight camping, however, supports the targeted activities and benefits of the RMZ, and alternate camping opportunities would be provided throughout the SRMA. Outside of these areas closed overnight camping the opportunity is restricted to a length of stay limitation (i.e., 14 days within a 90 day period of a 25 mile radius of original camp location). Although this locally limits camping activities for individuals beyond the 14 days, it does allow for up eight weeks of camping at the same dispersed location within a calendar year, and furthermore increases camping opportunity for those individuals using dispersed camping areas greater than 25 miles apart. This is a 50% increase in camping opportunity for the individual at the same location and a 92% increase area wide.

Limitations on Specialized Vehicle Recreation would reduce opportunity for this activity to occur to only those areas designated for such use and those allowed by permit. This essential has no impact as it mimics current management of this activity.

Prescriptive management prohibiting the discharge of firearms limits all shooting activities, except legal hunting. This includes the loss of opportunity for paint balling, air-soft, archery, and target shooting. These restrictions specifically affect two areas where this activity is known to occur (Kaweah and Erskine Creek ACECs) and would no longer be allowed.

The method of providing public access to the Piedras Blancas Light Station limits opportunity to only permitted or guided tours. Levels of visitation over the life of the plan would be dependent on the frequency these visitor services were provided.

Management of the PCNST through the identification of a 0.25 mile trail corridor and associated management prescriptions would support recreational trail values (scenic quality, continued access, etc.) and indirectly desired physical and administrative settings-when identified. Management of the Wu Ki' Oh National Recreation Trail again supports recreational trail values and use. The National Trails promote access opportunities and activities associated with primitive or semi-primitive (mechanized use on the Wu Ki' Oh trail) trail use, including; hiking, equestrian/livestock use, dispersed camping and hunting.

4.15.3 IMPACT OF ALTERNATIVE B

Identification of SRMAs as exclusion areas for utility scale renewable energy projects aids in achieving the desired recreation settings and ensure access to and opportunity for recreational experiences continue.

Designation of 45,240 acres for special recreation management (i.e., as SRMAs: Keyesville, San Joaquin River Gorge, Temblor) and 167,320 acres for recreation management (i.e., as ERMAs: Atwell Island, Case Mountain, Chimney Peak and Fresno River) would provide specific desired outcomes for recreational settings. Table 4.15-3 presents the existing and the prescribed setting (average derived from physical, social and administrative) for the RMZs within the SRMAs and ERMAs.

Table 4.15-3
Existing and Prescribed Settings for RMZs and ERMAs – Alternative B

SRMA/RMZ	Existing Setting	Prescribed Setting
Temblor SRMA		
Temblor Range	Back Country	Middle Country
Urban Interface	Back Country	Middle Country
ERMAs		
Chimney Peak	Primitive	Primitive
Fresno River	Front Country	Front Country

As can be seen in the table, the trend across the areas designation as RMAs (either SRMAs or ERMAs) is to preserve the existing setting in which recreation is currently occurring.

The designation of the Chimney Peak ERMA would focus management efforts on maintenance of existing facilities and access to Wilderness opportunities and the PCNST.

The designation of the Temblor SRMA would ensure the recreation experiences available in this location; ranging from primitive to intensive recreational types receive the appropriate levels of management, including visitor services and environmental monitoring to sustainably support public use. Management guidance provided through the identification of RMZs, especially as they relate to the various targeted activities would enhance existing opportunities and activities specifically OHV use, through the maintenance and improvement of motorized trails. Prohibition of competitive events (i.e., no competitive SRPs issued) and restrictions on the number of commercial permits available (e.g., outfitters and guides) would aid in maintaining the desired Middle Country social and administrative settings of the area.

Closure of approximately 11,000 acres to all forms of public access, except travel on state and county roads would limit opportunity for access and all recreation activities in these areas. This prohibition results from restrictions in oil fields for protection of public health and safety and in Bitter Creek ACEC for the purpose of coordinating management with the adjacent Wildlife Refuge. Neither of these areas is specifically managed for recreation and all legal visits would cease. This is a decrease in public land available for general public use of 3%.

In addition to the areas of total closure, recreation sites along the North Fork of the Kaweah would be seasonally closed (from May through September) to address carrying capacity issues of these sites (i.e., inadequate infrastructure to support high visitation and infeasibility to provide enhanced

infrastructure due to topography and location.). Although this area is not managed for recreation this seasonal closure eliminates access and all recreation activities (such as, water-play, fishing and picnicking) for the period when they are most desirable. It does however, continue to allow access for activities such as hunting, fishing and kayaking through the fall and winter months. Access would not be limited outside of the recreation sites at any time of year.

Prohibition of certain activities (those receiving specific management) in areas through either ACEC special management, implementation of biological resource management or to achieve desired recreation conditions in SRMAs and ERMAs would reduce opportunity for these activities on public lands. Table 4.15-4 summarizes these restrictions and the percent change from where these activities are currently allowed.

Table 4.15-4
Recreation Opportunities Restricted within the Decision Area – Alternative B

Opportunities	Acres Prohibited[2]	Percent Change
Equestrian use	45,550	13% ↑
Hunting	30,940	8% ↑
Overnight camping	42,840	11% ↑
Shooting Sports	199,130	17% ↑

Areas available for equestrian use, overnight camping, and shooting sports would be reduced by more than 10%. Of the areas closed to equestrian use, a number of locations are known to be popular for this activity including Cyrus Canyon and Los Osos ACECs. The closure to camping specifically impacts use occurring within Cyrus Canyon ACEC, Fresno River ERMA, and The Dam RMZ within Keyesville SRMA. A portion of the closure for shooting sports results from specifically allocating areas where shooting would otherwise be prohibited through state laws (e.g., within camping areas) but there would be loss of legitimate opportunities (e.g., Erskine Creek and Kaweah ACECs).

Although not considered a recreational activity by itself campfires (including those associated with overnight camping) would also be restricted. Primarily by area prohibition, including all those acres where overnight camping is prohibited and additional areas where sensitive biological resource are at the greatest risk from human-ignited wildfire; and indirectly by a limitation on the size of woody materials collected from public lands for use in campfires (to less than four inches in diameter).

Caving opportunities would be limited by the identification of known caves (and those occurring with Erskine Creek and Kaweah ACECs) as either Class II or III (restricted or closed). Restricted caves would still allow permitted recreational use, therefore unlikely to impact caving groups (which are currently required to have a permit as an organized group), but individual cavers would be also be required to get a permit, which they are not currently required to do. Millerton Cave (in the SJRG) would remain open (Class I) to all public users.

[2] "Acres prohibited" includes areas closed to all forms of public access.

Recreational OHV opportunity is eliminated by Closed OHV area designations from approximately 142,940 acres. This is a reduction in acreage available for these opportunities of less than 1%[3] from the existing conditions. Within the Limited OHV area designation 770 miles of route are designated as Motorized (thus allowing recreational OHV use) this is a reduction of, 167 miles or 18% from the existing available network. The route designations do also provide 76 miles of non-motorized routes which may indirectly enhance opportunities for non-motorized (bicycling, hiking, horseback riding etc.) recreational activities.

Revocation of the Back Country Byway would abolish the opportunities associated with Byway interpretation and potential for associated improvements (kiosks, viewing areas etc.) along this route, and from the Decision area. This does not however, impact the ability to engage in driving for pleasure.

4.15.4 IMPACT OF ALTERNATIVE C

Identification of SRMAs as exclusion areas for utility scale renewable energy projects aids in achieving the desired recreation settings and ensure access to and opportunity for recreational experiences continue.

Designation of 21,490 acres for special recreation management (i.e., as SRMAs: Keyesville and San Joaquin River Gorge) and 190,910 acres for recreation management (i.e., as ERMAs: Atwell Island, Case Mountain, Chimney Peak and Temblor Range) would provide specific desired outcomes for recreational settings. Where these outcomes match the existing settings, the current setting would be preserved through recreation management aimed at maintaining it. Table 4.15-5 presents the existing and the prescribed setting (average derived from physical, social and administrative) for each of the ERMAs designated.

Table 4.15-5
Existing and Prescribed Settings for ERMAs – Alternative C

SRMA/RMZ	Existing Setting	Prescribed Setting
ERMAs		
Chimney Peak	Primitive	Primitive
Temblor Range	Back Country	Back Country

As can be seen in the table, the trend across the areas designation as RMAs (either SRMAs or ERMAs) is to preserve the existing setting in which recreation is currently occurring.

Closure of approximately 23,000 acres to all forms of public access, except travel on state and county roads would limit opportunity for access and all recreation activities in these areas. This prohibition results from restrictions in oil fields for protection of public health and safety, the recreation sites along the North Fork of the Kaweah to resolved carrying capacity concerns and in

[3] This percentage does not include reduction in OHV opportunity from area closed to public access within the Limited OHV area designation.

several ACECs both for protection of relevance values and to coordinate management with adjacent land owners. None of these areas are specifically managed for recreation and all legal visits would cease. This is a decrease in public land available for general public use of 6%.

Prohibition of certain activities (those receiving specific management) in areas through either ACEC special management, implementation of biological resource management or to achieve desired recreation conditions in SRMAs and ERMAs would reduce opportunity for these activities on public lands. Table 4.15-6 summarizes these restrictions and the percent change from where these activities are currently allowed.

Table 4.15-6
Recreation Opportunities Restricted within the Decision Area – Alternative C

Opportunities	Acres Prohibited[4]	Percent Change
Equestrian use	69,030	17% ↑
Hunting	54,600	14% ↑
Overnight camping	75,190	19% ↑
Shooting Sports	236,110	27% ↑

Areas available for equestrian use, overnight camping, and shooting sports would be sizably reduced. Of the areas closed to equestrian use, a number of locations are known to be popular for this activity including Cyrus Canyon and Los Osos ACECs. The closure to camping specifically impacts use occurring within Cyrus Canyon and Piute Cypress ACECs and The Dam RMZ within Keyesville SRMA. A portion of the closure for shooting sports results from specifically allocating areas where shooting would otherwise be prohibited through state laws (e.g., within camping areas), but there would be loss of legitimate opportunities (e.g., Erskine Creek, Kaweah, and Lokern-Buena Vista ACECs).

Although not considered a recreational activity by itself campfires (including those associated with overnight camping) would also be restricted. Primarily by area prohibition, including all those acres where overnight camping is prohibited and further areas where sensitive biological resource are at the greatest risk from human-ignited wildfire; and indirectly by a prohibition on collection of woody materials for campfires on all public lands. Where campfires are allowed the prohibition of collection may result in an increase in litter (nails, packing/bundling materials, etc.) and burning of undesirable wood types (pallets, treated lumber, etc.). Furthermore this may place undue burden on a variety of recreationalists as they have to acquire and transport their campfire materials; most impacted being primitive recreational user of the wilderness areas and through hikers along the Pacific Crest National Scenic Trail, whom may be unable to carry enough fuel for extended visits.

Caving opportunities on public lands would be limited by the identification of caves as either Class II or III. (restricted or closed). This would immediately close recreational access to all known caves

[4] "Acres prohibited" includes areas closed to all forms of public access.

including any cave occurring with Erskine Creek and Kaweah ACECs. Restricted caves would be those as yet undiscovered and would still allow permitted recreational use upon discovery until such time study had provided guidance on the management direction of the cave. The likelihood for discovery of new caves where this management would apply is small. Therefore, this action essentially excludes recreation cave use from the Decision Area.

Recreational OHV opportunity is eliminated by Closed OHV area designations from approximately 166,300 acres. This is a reduction in acreage available for these opportunities of 6%[5] from the existing conditions. Within the Limited OHV area designation 656 miles of route are designated as Motorized (thus allowing recreational OHV use) this is a reduction of, 281 miles or 30% from the existing available network. The route designation do also provide 84 miles of non-motorized routes which may indirect enhance opportunities for non-motorized (bicycling, hiking, horseback riding etc.) recreational activities.

Revocation of the Back Country Byway would abolish the opportunities associated with Byway interpretation and potential for associated improvements (kiosks, viewing areas etc.) along this route, and from the Decision area. This does not however, impact the ability to engage in driving for pleasure.

4.15.5 IMPACT OF ALTERNATIVE D

Identification of SRMAs as exclusion areas for utility scale renewable energy projects aids in achieving the desired recreation settings and ensure access to and opportunity for recreational experiences continue.

Designation of 21,490 acres for special recreation management (i.e., as SRMAs: Keyesville and San Joaquin River Gorge) and 190,910 acres for recreation management (i.e., as ERMAs: Atwell Island, Case Mountain, Chimney Peak and Temblor Range) would provide specific desired outcomes for recreational settings. Where these outcomes match the existing settings, the current setting would be preserved through recreation management aimed at maintaining it. Table 4.15-5, above presents the existing and the prescribed setting (average derived from physical, social and administrative) for each of the ERMAs designated.

Total elimination of livestock grazing from the landscape may unintentionally shift recreational settings. Although potential removal of unnecessary rangeland improvements may promote more primitive settings, the fencing required for the exclusion of cattle from public lands and the levels of enforcement needed to maintain the closure could shift settings towards a more urban environment. The fencing would not directly occur on public lands but may be in close proximity. The fencing may physically restrict access to public lands and leaded to a public perception of closure.

Closure of approximately 23,000 acres to all forms of public access, except travel on state and county roads would limit opportunity for access and all recreation activities in these areas. This

[5] This percentage does not include reduction in OHV opportunity from area closed to public access within the Limited OHV area designation.

prohibition results from restrictions in oil fields for protection of public health and safety, the recreation sites along the North Fork of the Kaweah to resolved carrying capacity concerns and in several ACECs both for protection of relevance values and to coordinate management with adjacent land owners. None of these areas are specifically managed for recreation and all legal visits would cease. This is a decrease in public land available for general public use of 6%.

Prohibition of certain activities (those receiving specific management) in areas through either ACEC special management, implementation of biological resource management or to achieve desired recreation conditions in SRMAs and ERMAs would reduce opportunity for these activities on public lands. Table 4.15-6, above, summarizes these restrictions and the percent change from where these activities are currently allowed.

Areas available for equestrian use, overnight camping, and shooting sports would be sizably reduced. Of the areas closed to equestrian use, a number of locations are known to be popular for this activity including Cyrus Canyon and Los Osos ACECs. The closure to camping specifically impacts use occurring within Cyrus Canyon and Piute Cypress ACECs and The Dam RMZ within Keyesville SRMA. A portion of the closure for shooting sports results from specifically allocating areas where shooting would otherwise be prohibited through state laws (e.g., within camping areas), but there would be loss of legitimate opportunities (e.g., Erskine Creek, Kaweah, and Lokern-Buena Vista ACECs).

Although not considered a recreational activity by itself campfires (including those associated with overnight camping) would also be restricted. Primarily by area prohibition, including all those acres where overnight camping is prohibited and further areas where sensitive biological resource are at the greatest risk from human-ignited wildfire; and indirectly by a prohibition on collection of woody materials for campfires on all public lands. Where campfires are allowed the prohibition of collection may result in an increase in litter (nails, packing/bundling materials, etc.) and burning of undesirable wood types (pallets, treated lumber, etc.). Furthermore this may place undue burden on a variety of recreationalists as they have to acquire and transport their campfire materials; most impacted being primitive recreational user of the wilderness areas and through hikers along the Pacific Crest National Scenic Trail, whom may be unable to carry enough fuel for extended visits.

Caving opportunities on public lands would be limited by the identification of caves as either Class II or III. (restricted or closed). This would immediately close recreational access to all known caves including any cave occurring with Erskine Creek and Kaweah ACECs. Restricted caves would be those as yet undiscovered and would still allow permitted recreational use upon discovery until such time study had provided guidance on the management direction of the cave. The likelihood for discovery of new caves where this management would apply is small. Therefore, this action essentially excludes recreation cave use from the Decision Area.

Recreational OHV opportunity is eliminated by Closed OHV area designations from approximately 166,300 acres. This is a reduction in acreage available for these opportunities of 6%[6] from the existing conditions. Within the Limited OHV area designation 656 miles of route are designated as Motorized (thus allowing recreational OHV use) this is a reduction of, 281 miles or 30% from the existing available network. The route designation do also provide 84 miles of non-motorized routes which may indirect enhance opportunities for non-motorized (bicycling, hiking, horseback riding etc.) recreational activities.

Revocation of the Back Country Byway would abolish the opportunities associated with Byway interpretation and potential for associated improvements (kiosks, viewing areas etc.) along this route, and from the Decision area. This does not however, impact the ability to engage in driving for pleasure.

4.15.6 IMPACT OF ALTERNATIVE E

Designation of 168,690 acres for special recreation management (i.e., as SRMAs: Chimney Peak, Keyesville, San Joaquin River Gorge and Temblor) and 47,270 acres for recreation management (i.e., as ERMAs: Atwell Island, Case Mountain, Fresno River and North Fork) would provide specific desired outcomes for recreational settings. Where these outcomes match the existing settings, the current setting would be preserved through recreation management aimed at maintaining it. Table 4.15-7 presents the existing and the prescribed setting (average derived from physical, social and administrative) for each of the RMZs within the SRMAs and ERMAs designated.

Table 4.15-7
Existing and Prescribed Settings for RMZs and ERMAs – Alternative E

SRMA/RMZ	Existing Setting	Prescribed Setting
Chimney Peak SRMA		
Byway	Middle Country	Middle Country
PCNST	Back Country	Back Country
Wilderness	Primitive	Primitive
Temblor SRMA		
Temblor Range	Back Country	Middle Country
Urban Interface	Back Country	Middle Country
ERMAs		
Fresno River	Front Country	Front Country
North Fork	Back Country	Back Country

As can be seen in the table, the trend across the areas designation as RMAs (either SRMAs or ERMAs) is to preserve the existing setting in which recreation is currently occurring.

[6] This percentage does not include reduction in OHV opportunity from area closed to public access within the Limited OHV area designation.

No closures to public access beyond those intermittent temporary closes needed to address resource concerns or public health and safety would be in effect. No opportunities to access public lands would be reduced and therefore no difference from the current conditions is expected.

The designation of the North Fork ERMA would facilitate visitor participation in fishing, hunting and water-play. Recreation sites along the North Fork of the Kaweah (except Paradise) would be open to access all year. The temporary closure these sites are under would be lifted upon final approval of the ROD and visitation would be expected to resume gradually and over the life of the plan exceed the carrying capacity of the sites. As visitation increases beyond manageable levels (as it has historically done), the sheer number of people, accessibility of the area to emergency response, parking situation (on a narrow winding road) and the associated consequences of visitation (e.g., litter) would present unacceptable risks to public health and safety, and the local community. The exceedance of carrying capacity could partially be addressed through increase facilities and services provided for by the ERMA designation, however physical space and local topography limit the level of recreation development the area can sustain.

The designation of the Chimney Peak SRMA would focus management efforts on improvement of existing facilities and access to Wilderness opportunities and support of the Back Country Byway and PCNST. Management guidance provided through the identification of RMZs, especially as they relate to the various targeted activities would enhance existing opportunities for primitive, unconfined recreation types.

The designation of the Temblor SRMA would ensure the recreation experiences available in this location; ranging from primitive to intensive recreational types receive the appropriate levels of management, including visitor services and environmental monitoring to sustainably support public use. Management guidance provided through the identification of RMZs, especially as they relate to the various targeted activities would enhance existing opportunities and activities specifically OHV use, through the maintenance and improvement of motorized trails. Prohibition of competitive events (i.e., no competitive SRPs issued) and restrictions on the number of commercial permits available (e.g., outfitters and guides) would aid in maintaining the desired Middle Country social and administrative settings of the area.

Prohibition of certain activities (those receiving specific management) in areas through either ACEC special management, implementation of biological resource management or to achieve desired recreation conditions in SRMAs and ERMAs would reduce opportunity for these activities on public lands. Table 4.15-8 summarizes these restrictions and the percent change from where these activities are currently allowed.

Table 4.15-8
Recreation Opportunities Restricted within the Decision Area – Alternative E

Opportunities	Acres Prohibited[7]	Percent Change
Equestrian use	22,710	6% ↑
Hunting	7,010	2% ↑
Overnight camping	20,360	5% ↑
Shooting Sports	174,800	12% ↑

A more than 10% increase in the closure for shooting sports results from specifically allocating areas where shooting would otherwise be prohibited through state laws (e.g., within camping areas) but there would be loss of legitimate opportunities (e.g., Erskine Creek and Kaweah ACECs).

Although not considered a recreational activity by itself campfires (including those associated with overnight camping) would also be restricted. Primarily by area prohibition, including all those acres where overnight camping is prohibited and additional areas where sensitive biological resource are at the greatest risk from human-ignited wildfire. Secondarily through limitation on the size woody materials collected from public lands for use in campfires

Caving opportunities would be limited by the identification of known caves (and those occurring with Erskine Creek and Kaweah ACECs) as either Class II or III (restricted or closed). Restricted cave would still allow permitted recreational use, therefore unlikely to impact caving groups (which are currently required to have a permit as an organized group). Millerton Cave (in the SJRG) would remain open (Class I) to all public.

Recreational OHV opportunity is eliminated by Closed OHV area designations from approximately 139,450 acres. This is no change in existing conditions. Within the Limited OHV area designation 1,683 miles of route are designated as Motorized (thus allowing recreational OHV use) this is a increase of 746 miles or 44% from the existing available network. The route designation do also provide 76 miles of non-motorized routes which may indirect enhance opportunities for non-motorized (bicycling, hiking, horseback riding etc.) recreational activities.

Continued designation of the Back Country Byway supports opportunities associated with Byway interpretation and increases the potential for associated improvements (kiosks, viewing areas etc.) along this route to be developed. The reestablishment of connectivity the Long Valley Loop road would increase access to and within the Chimney Peak SRMA and its associated facilities. Visitor use would be expected to increase, however not to such a level that the desired recreational setting of the area is impacted.

[7] "Acres prohibited" includes areas closed to all forms of public access.

SPECIAL DESIGNATIONS

4.16 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

ACECs are areas requiring special management 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 (43 CFR 1610.0–5). A few management prescriptions come automatically with ACEC designation including: the requirement for a Plan of Operations for locatable mineral exploration and development regardless of the amount of surface disturbance (43 CFR 3809) and the closure to geothermal development unless specifically opened by an RMP.

METHODS OF ANALYSIS

The area of analysis focuses on those areas considered during the preparation of the ACEC Report (Appendix I), specifically those carried forward in the alternatives for a maximum extent of 108,380 acres of both public lands and federal mineral estate.

Direct impacts to ACECs are considered to be those that either diminish or enhance the values for which the ACEC was proposed for designation. As such the discussion focuses on relevance and importance criteria as a whole and if these values would receive adequate protection without special management derived from ACEC designation. The relevance values, themselves, are not expressly analyzed as the parent resource (i.e., the resource program responsible for managing the relevant values) discusses impacts to these values when not managed as an ACEC. As such, a qualitative description of whether protection of relevant values is deemed to be adequate without ACEC designation is used.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the relevance and importance values for which ACECs would be designated: Biological Resources, Cultural Resources, Paleontological Resources, Livestock Grazing, Minerals Management, and Recreation and Visitor Services. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- Special management prescribed within an ACEC is sufficient to address resource concerns and protect values for which the ACEC is proposed.
- Special management prescribed within ACECs is included and implemented in other resource and resource use management decisions (e.g., travel restrictions within ACECs are brought forward through the route designations).

- ACEC designation provides protection for relevant values beyond that provided through general management of their parent resource (e.g., cave management protects specific caves whereas ACEC designation protects a larger area including yet undiscovered caves).
- Designation as an ACEC infers a greater level of management responsibility to those areas and resources identified, including enhanced monitoring, higher level filtering for incompatible activities, and greater response to adverse circumstances.
- Actions that improve parent resources of relevant values (e.g., improved habitat due to the exceedance of the standards of rangeland health) enhance these relevant values regardless of ACEC designation.

4.16.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Recommendation for designation of 13 proposed ACECs totaling 59,808 acres would ensure the adequate protection of their various relevance and importance values.

The Sand Ridge portion of Atwell Island would not be included in any ACEC recommendation and would not receive special management. The relevant biological and cultural values would be protected through the applicable laws and policy and would be expected that over the life of the plan these values would be adequately protected.

The proposed Bitter Creek ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from fluid mineral development and livestock grazing activities as would special management associated with an ACEC designation. The relevant values (i.e., California condor roosting and foraging habitat) would receive no protection from incompatible public visitation and recreational activities. It would be expected that over the life of the plan the habitat would not be adequately protected.

Lands acquired as compensation for habitat disturbance would not be recommended for ACEC designation. Where these lands are transferred to the BLM with deed restrictions or conservation easements the relevance and importance values would be protected. In cases where compensation lands are transferred without these restrictions, the purpose for which these lands were acquired for would direct their management and protect their relevant values as is currently the practice, specifically management under biological resources would limit incompatible uses and disposal of these lands. It would be expected that over the life of the plan the values for which these lands were acquired would be generally protected, however, due to the dispersed nature of compensation land parcels risks associated with incompatible use remain high.

The proposed Cyrus Canyon ACEC would not be recommended for designation and the importance and relevance values would not receive special management. It would be expected that over the life of the plan the unique vegetative communities and other sensitive status species would not be adequately protected from surface disturbances resulting from livestock grazing and recreation.

The proposed Erskine Creek ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from fluid mineral development and livestock grazing activities as would special management associated with an ACEC designation. The relevant values would receive no protection from incompatible recreational activities (i.e., target shooting). It would be expected that over the life of the plan the relevant values would be adequately protected.

The proposed Granite Cave ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from fluid mineral as would special management associated with an ACEC designation. The relevant cultural values would be protected through the applicable law and policy and would be expected that over the life of the plan these values would be adequately protected.

The proposed Hopper Mountain ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from fluid mineral development and livestock grazing activities as would special management associated with an ACEC designation. The relevant values (i.e., California condor nesting habitat) would receive no protection from incompatible public visitation and recreational activities. It would be expected that over the life of the plan the habitat would not be adequately protected.

The proposed Irish Hills ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from mineral development as would special management associated with an ACEC designation. The relevant values would receive no protection from incompatible public visitation and recreational activities. It would be expected that over the life of the plan the unique vegetative communities and numerous rare and endemic plants would be adequately protected, except for the risks from human-caused wildand fires.

The North Fork area would not be included in any ACEC recommendation and would not receive special management. The area, however, would be identified as an SMA with prescriptive management designed to eliminate user conflicts and incompatible use. The relevance and importance values may be subject to adverse impacts and loss over the life of the plan.

The Buena Vista area would not be included in any ACEC recommendation and would not receive special management. The relevant biological values would be protected through the applicable laws and policy and would be expected that over the life of the plan these values would be adequately protected.

The Los Osos area would not be included in any ACEC recommendation and would not receive special management. The relevant biological and cultural values would be protected through the applicable laws and policy and would be expected that over the life of the plan these values would be adequately protected.

The proposed Rusty Peak ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified as an SMA with prescriptive management providing a similar level of protection from mineral development and livestock grazing activities as would special management associated with an ACEC designation. It is expected that over the life of the plan the unique vegetative communities and other sensitive plant species would be adequately protected.

The Upper Cuyama Valley area would not be included in any ACEC recommendation and would not receive special management. The relevance and importance values may be subject to adverse impacts and loss over the life of the plan.

4.16.2 Impacts Common to All Action Alternatives

The management of relevant and important values (i.e., designation of ACECs) changes across the action alternatives, as such, there are no impacts considered common to all action alternatives.

4.16.3 Impact of Alternative B

Recommendation for designation of 17 proposed ACECs totaling 99,490 acres would ensure the adequate protection of their various relevance and importance values.

The proposed Chico Martinez ACEC would not be recommended for designation and the importance and relevance values would not receive special management. These values may be subject to adverse impacts and loss over the life of the plan. The relevant cultural resource values, however, would be allocated to "scientific use" directing their protection and preservation until such time they can evaluated. The paleontological resources, associated with the Zemorrian stage geologic formations, would be at risk from surface disturbing activities however the identification of prescriptive management of PFYC 4 would alleviate risks posed by authorized activities. Habitat for the San Joaquin Valley Suite of listed species would receive protection from general biological resources (including identification as part of the Conserved Lands area of ecological importance). It would be anticipated that laws and policy governing the management of cultural and biological resources would provide adequate protection.

The proposed Granite Cave ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The cave itself would be determined significant (cave information withheld from FOIA requests) and designated Class III (closed) therefore eliminating access and reducing the availability of information concerning its relevant resources. In addition, the relevant cultural values would be protected through the applicable law

and policy. The sensitive species present would also benefit from cave management. Although the cave would be closed to the public it would still be at risk from locatable mineral development.

The proposed Irish Hills ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It would be expected that over the life of the plan the unique vegetative communities and numerous rare and endemic plants would be adequately protected.

The proposed Rusty Peak ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It is expected that over the life of the plan the unique vegetative communities and other sensitive plant species would be adequately protected.

The proposed Salinas River ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It would be expected that over the life of the plan the rare vegetative communities would be adequately protected ensuring no net loss of associated habitat for special status plants and animals.

4.16.4 IMPACT OF ALTERNATIVE C

Recommendation for designation of all 22 proposed ACECs totaling 108,248 acres would ensure the adequate protection of their various relevance and importance values.

4.16.5 IMPACT OF ALTERNATIVE D

Recommendation for designation of all 22 proposed ACECs totaling 108,248 acres would ensure the adequate protection of their various relevance and importance values.

4.16.6 IMPACT OF ALTERNATIVE E

Recommendation for designation of 12 proposed ACECs totaling 75,918 acres would ensure the adequate protection of their various relevance and importance values.

The proposed Chico Martinez ACEC would not be recommended for designation and the importance and relevance values would not receive special management. These values may be subject to adverse impacts and loss over the life of the plan. The relevant cultural resource values, however, would be allocated to "scientific use" directing their protection and preservation until such

time they can evaluated. The paleontological resources, associated with the Zemorrian stage geologic formations, would be at risk from surface disturbing activities however the identification of prescriptive management of PFYC 4 would alleviate risks posed by authorized activities. Habitat for the San Joaquin Valley Suite of listed species would receive protection from general biological resources (including identification as part of the Conserved Lands area of ecological importance). It would be anticipated that laws and policy governing the management of cultural and biological resources would provide adequate protection.

The proposed Cypress Mountain ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It is expected that over the life of the plan the unique vegetative communities and other sensitive plant species would be adequately protected.

The proposed Cyrus Canyon ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the similar level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use and the less restrictive livestock grazing allocation (i.e., only known population of special status species would be Unavailable). It would be expected that over the life of the plan the unique vegetative communities and other sensitive status species would be adequately protected.

The proposed Granite Cave ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The cave itself would be determined significant (cave information withheld from FOIA requests) and designated Class III (closed) therefore eliminating access and reducing the availability of information concerning its relevant resources. In addition, the relevant cultural values would be protected through the applicable law and policy. The sensitive species present would also benefit from cave management. Although the cave would be closed to the public it would still be at risk from locatable mineral development.

The proposed Horse Canyon ACEC would not be recommended for designation and the importance and relevance values would not receive special management. These values may be subject to adverse impacts and loss over the life of the plan. The relevant cultural resource values, however, would be allocated to "scientific use" directing their protection and preservation until such time they can evaluated. The paleontological resources, associated with the area would be at risk from surface disturbing activities however the identification of prescriptive management of PFYC 4 would alleviate some of the risks posed by authorized activities. Although the continued ability to locate mining claims and engage in casual use collection, which would not be subject to approval of a Plan of Operations, would over the long term negate the protective measures provided to cultural and paleontological resource values.

The proposed Irish Hills ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the similar level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It is expected that over the life of the plan the unique vegetative communities and numerous rare and endemic plants would be adequately protected.

The proposed Rusty Peak ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It is expected that over the life of the plan the unique vegetative communities and other sensitive plant species would be adequately protected.

The proposed Salinas River ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It would be expected that over the life of the plan the rare vegetative communities would be adequately protected ensuring no net loss of associated habitat for special status plants and animals.

The proposed Tierra Redonda ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the similar level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use and the level of public accessibility (i.e., motorized, mechanized, and equestrian use on trails only). It would be expected that over the life of the plan the vegetative communities would be adequately protected. The identification as an area of ecological importance would incidentally provide protection to significant paleontological resources.

The proposed Upper Cuyama Valley ACEC would not be recommended for designation and the importance and relevance values would not receive special management. The area, however, would be identified an area of ecological importance with prescriptive management providing the same level of protection as would an ACEC designation except for the requirement for a plan of operations for locatable mineral activities greater than casual use. It would be expected that over the life of the plan the unique vegetative communities and other sensitive status species, along with the link between the Sierra Madre and the San Emigdio Mountains would be adequately protected.

4.17 OUTSTANDING NATURAL AREAS

The Piedras Blancas Light Station is the single Outstanding Natural Area within the Decision Area. Under the Consolidated Natural Resources Act of 2008 (S. 2739) which designated the Piedras Blancas Light Station as an Outstanding Natural Area, the Secretary of the Interior was directed to "manage the ONA in a manner which conserves, protects and enhances the unique and nationally important historical, natural, cultural, scientific educational, scenic, and recreational values of that area."

METHODS OF ANALYSIS

The area of analysis focuses on the 20 acres designated as the ONA.

Direct impacts occur when the values associated with the ONA designation are supported and protected through management decisions. Due to the legislation designating the ONA, impacts are limited to those discretionary actions achieved through land use planning much of which mimics the currently implemented activity level plan and various agreements between the BLM and the SHPO and the State of California Parks and Recreation.

Management for the ONA does not vary between the action alternatives nor do the impacts from these alternatives due to restrictions placed upon the area by legislative designation.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on resources within the Piedras Blancas ONA: Lands and Realty, Livestock Grazing, Recreation. Those resources, resource uses and programs not listed are deemed to have negligible effects and, therefore, are not further analyzed.

ASSUMPTIONS

The following assumptions are used in this analysis:

- Implementation of Biological and Cultural Resource management directly benefits the values for which the ONA was designated. Furthermore, the existing agreement between the BLM and the SHPO limits potential impacts from restoration activities on the historic properties and other cultural resources.
- Native American access to the PBLS ONA for traditional cultural and religious purposes are guaranteed under the provisions of the Consolidated Natural Resources Act of 2008 (S. 2739) and additional authorities protecting Native American rights.

4.17.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Under the Consolidated Natural Resources Act of 2008 (S. 2739), the Piedras Blancas Light Station is closed, made unavailable and prohibited from the following uses: all forms of entry, appropriation, or disposal under the public land laws; location, entry, and patent under the public land mining laws; operation of the mineral leasing and geothermal leasing laws and the mineral materials laws. The

combination of which protects the nationally important historical, natural, cultural, scientific, educational, scenic, and recreational values of that area from appropriation under these laws.

In accordance with its designating act, current management decisions provide objectives to restore the historic Light Station and ancillary buildings; implement a continuing program of interpretation and public education about the Light Station and its importance to the surrounding community; and limit administrative and public facilities to be compatible with achieving the resources objectives. These actions protect and support the values for which the area was designated.

4.17.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Under the Consolidated Natural Resources Act of 2008 (S. 2739), the Piedras Blancas Light Station is closed, made unavailable and prohibited from the following uses: all forms of entry, appropriation, or disposal under the public land laws; location, entry, and patent under the public land mining laws; operation of the mineral leasing and geothermal leasing laws and the mineral materials laws. The combination of which protects the nationally important historical, natural, cultural, scientific, educational, scenic, and recreational values of that area from appropriation under these laws.

In accordance with its designating act, management decisions provide objectives to restore the historic Light Station and ancillary buildings; implement a continuing program of interpretation and public education about the Light Station and its importance to the surrounding community; and limit administrative and public facilities to be compatible with achieving the resources objectives. These actions protect and support the values for which the area was designated.

Furthermore, designation of this area as unavailable for livestock grazing, prohibition on discharge of firearms, and identification as a right-of-way avoidance area eliminates incompatible uses of the area.

4.18 BACKCOUNTRY BYWAYS

Generally, backcountry byways traverse remote country, providing opportunities for solitude and spectacular scenery, for the "off-the-beaten-path" driving for pleasure experiences. As such, the visual landscape, opportunities for solitude, and motorized experience are the primary elements of a byway that can be impacted through the management of other resources. In addition, backcountry byways present an opportunity for education and interpretation. Although not the main attraction of a byway, the management actions of other resources may influence these opportunities.

The Chimney Peak Back Country Byway winds through a narrow corridor between congressionally designated wilderness areas. Wilderness area management both limits the ability to manage the byway as well as reducing impacts that can occur to its visual and social setting.

METHODS OF ANALYSIS

The analysis focuses on the Chimney Peak Back Country Byway; there are no other designated or proposed byways within the Decision Area. Impacts to the byway result from management actions

that either enhance or diminish the primary elements of the byway: visual, social and administrative settings. Where the byway designation is removed, it is considered that there are no longer impacts on the special designation.

Management actions that change the administrative setting cause direct impacts by altering the physical nature of the route (e.g., improving the route to allow passage of standard vehicles), and indirect impacts by potentially altering the visual setting (as described by contrast with the existing landscape) within the route corridor and providing for changes to the social setting (as described using the recreation setting matrix).

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the Back Country Byway: Comprehensive Trail and Travel Management, and Recreation and Visitor Services. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- The Backcountry Byway designation has no additional land use constraints.
- Impacts on the byway's visual landscape are not likely to occur outside the route corridor due to the surrounding wilderness designations. Impacts within the route corridor would be limited to physical road maintenance or improvement.
- Reestablishment of the Long Valley Loop Road portion of the Byway will increase use of the Byway and increase human presence in these areas.

4.18.1 IMPACT OF ALTERNATIVE A (NO ACTION)

The Chimney Peak Back Country Byway occurs within the Limited OHV area and constitutes a small portion of the Travel Network designated for motorized use. The Byway would be maintained as a Type II Byway (narrow, slow speed, secondary roads and recommended for high-clearance vehicles). These actions maintain the current condition of the byway and are not expected to impact either its social (i.e. no change in visitor use), visual (i.e. resulting in no contrast to the existing visual landscape) or administrative (i.e. not altering the physical nature of the route) setting.

4.18.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The Byway designation changes across the action alternatives, as such, there are not impacts considered common to all action alternatives.

4.18.3 IMPACT OF ALTERNATIVE B

Revocation of the Chimney Peak Back Country Byway would eliminate impacts to this special designation.

4.18.4 IMPACT OF ALTERNATIVE C

Revocation of the Chimney Peak Back Country Byway would eliminate impacts to this special designation.

4.18.5 IMPACT OF ALTERNATIVE D

Revocation of the Chimney Peak Back Country Byway would eliminate impacts to this special designation.

4.18.6 IMPACT OF ALTERNATIVE E

The Chimney Peak Back Country Byway occurs within the Limited OHV area and constitutes a small portion of the Travel Network designated for motorized use. The Byway would be maintained as a Type II Byway (narrow, slow speed, secondary roads, recommended for high-clearance vehicles). These actions maintain the current condition of the byway and are not expected to impact either its social (i.e. no change in visitor use), visual (i.e. resulting in no contrast to the existing visual landscape) or administrative (i.e. not altering the physical nature of the route) setting. The reestablished of the Long Valley Loop Road segment, which is currently impassable, would potentially result in a marginal increase in use as connectivity is restored and travel time on the road between paved county road and recreation facilities is reduced.

In addition, incorporation of the Byway into a specific Recreation Management Zone (RMZ) within the Chimney Peak Special Recreation Management Area (SRMA), with targeted activities of driving for pleasure and expanded interpretation and education along the Byway is expected increase visitor use however not sufficiently to move existing Back Country social setting to Middle Country (15-29 encounters per day on routes).

4.19 NATIONAL TRAILS

National Trails provide opportunities for outdoor recreation and promote enjoyment, appreciation and preservation of scenic values, open space and historic resources. The Bakersfield FO specifically addresses only National Scenic Trails (the Pacific Crest National Scenic Trail [PCNST]) and existing or recommended National Recreation Trails.

National Scenic Trails are characterized by their outstanding scenic values, as such; actions that affect the visual resources of the trail potentially have the most impact. Ancillary values of these trails can be considered to be provision of access to public lands. In addition values of solitude and opportunity for unconfined primitive recreation are deemed to be values of the portion of the PCNST managed through this RMP.

The primary value of a National Recreation Trail is considered to be its provision of outdoor recreation opportunity. Therefore actions that limit access to these trails are deemed to have the most impact. These trails are also considered to have trail specific ancillary values that can relate to a variety of elements including, scenic quality, open-space and interpretive or educational opportunity.

The ancillary values for Recreation Trails managed by the Bakersfield FO are considered to be scenic quality and open space.

METHODS OF ANALYSIS

The analysis uses two primary indicators of impacts. For the National Scenic Trail impacts are described as those affecting the visual landscape, specifically beneficial impacts being those that protect and adverse being those that allow for contrast with the scenic environment. For the National Recreation Trail provision of outdoor recreation opportunity is used as the indicator of impacts, whereby actions that restrict access have adverse impacts and those that promote and encourage visitation have beneficial impacts.

Impacts to the PCNST are only addressed for the portion of the trail managed through this RMP: the Owens Peak segment. The other segments (Cache Creek and Dove Springs) that intermittently occur on public land within the Planning Area are managed by Ridgecrest and therefore not addressed.

Impacts of the recommendation of San Joaquin River Trail as a National Recreation Trail and to the trail itself are only addressed under the alternatives in which that proposal occurs.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the National Trails: Visual Resource Management, Wildland Fire Ecology and Management, Comprehensive Trail and Travel Management, Minerals, Lands and Realty, Recreation and Visitor Service, and lands with wilderness characteristics. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

Assumptions used in this impact analysis include the following:

- Of the PCNST, 37 miles of the total 41 miles analyzed (93 percent) occur within designated Wilderness areas, and therefore the trails important values (scenic quality and recreational access/opportunity) receive associated protection from these designation in addition to the protections provided by the National Trails Act.
- Appropriate access to the trail would not be limited by any action, except temporarily as a result of an emergency situation or law enforcement activity.
- Provision of outdoor recreation opportunity is synonymous to increasing access to public lands.

4.19.1 IMPACT OF ALTERNATIVE A (NO ACTION)

National Scenic Trails

The seven percent of the trail not within designated Wilderness would be susceptible to impacts to its visual landscape from development including ROWs and mineral exploration, as there are no

established Visual Resource Management Class objectives established for the area outside of Wilderness. Although unlikely to occur in this remote location, this segment of the trail is within the area identified as having geothermal potential and high potential for locatable Barite and moderate to low potential for other locatable minerals. These types of development, should they occur, could result in substantial contrast to the existing visual landscape, through the construction of facilities, access routes and other associated development.

In addition, the portion of the trail outside designated Wilderness occurs within the Limited OHV area, allowing OHV use on existing routes; several of which are in proximity to the trail, could result in both changes to the visual landscape (e.g., scars from route proliferation) and damage to the integrity of the route from vehicular trespass.

4.19.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

National Scenic Trails

The seven percent of the trail not within designated Wilderness would be protected through the establishment of a management corridor 0.25 miles wide in which specific management (VRM Class I, Closure to Fluid and Salable mineral development, and identification as a ROW exclusion area) is identified for the protection of the trails scenic values and continued recreational access, thus eliminating disturbance to the scenic integrity of the landscape from these sources.

The identification of the Fire Management Units in which the PCNST occurs as suitable for the use of wildland fire for resource benefit, as with any occurrence of wildland fire itself, could result in both short and long term impacts dependent on fire intensity, to the visual qualities of the trail corridor (i.e., a fire scared landscape) and evidence of suppression efforts. The impact of latter being reduced through the application of Minimum Impact Suppression Tactics (MIST) within the Wilderness areas.

National Recreation Trails

Continued designation of the San Joaquin River Gorge Special Recreation Management Area (SRMA), in which the Wu Ki' Oh National Recreation Trail occurs, supports the provision of outdoor recreation opportunity, and therefore directly the values of the trail, through its marketing strategy and targeted activities of the Wu Ki' Oh Recreation Management Zone (RMZ). Management associated with the SRMA/RMZ; including VRM designation (Class II) also support the ancillary values of the trail such as, preservation of open-space and retention of the scenic qualities of the landscape.

4.19.3 IMPACT OF ALTERNATIVE B

National Scenic Trails

The majority of the trail not within designated wilderness is located in areas that would be managed for wilderness characteristics. This designation would provide incremental protection of visual

resources to an area larger than that of the trail corridor alone through: designation as VRM Class II outside the trail corridor, identification as an OHV Closed area, and the proposal for withdrawal from the mining laws.

National Recreation Trails

Recommendation of the San Joaquin River Trail as a National Recreation Trail directly supports the values of the trail through identification and provision of outdoor recreation opportunity. The portions of this trail managed by the BLM (the proposed trail extends off public lands) occur within the San Joaquin River Gorge SRMA through multiple RMZs. Although not all RMZs through which the trail passes specifically target trail use activities, these designations support the provision of outdoor recreation opportunities and though application of their management provide protection to the ancillary values of the trail including physical, social and administrative setting.

The occurrence of two National Recreation Trails (the Wu Ki' Oh and the San Joaquin River Trail) in close proximity to each other would be expected to multiply use marginally on each trail as a result of increased visitor awareness and the draw of two recognized trails in one location. This is again beneficial to trail values.

4.19.4 IMPACT OF ALTERNATIVE C

National Scenic Trails

The majority of the trail not within designated wilderness is located in areas that would be managed for wilderness characteristics This designation would provide incremental protection of visual resources to an area larger than that of the trail corridor alone through: designation as VRM Class I outside the trail corridor, identification as an OHV Closed area, and the proposal for withdrawal from the mining laws.

4.19.5 IMPACT OF ALTERNATIVE D

National Scenic Trails

The majority of the trail not within designated wilderness is located in areas that would be managed for wilderness characteristics. This designation would provide incremental protection of visual resources to an area larger than that of the trail corridor alone through: designation as VRM Class I outside the trail corridor, identification as an OHV Closed area, and the proposal for withdrawal from the mining laws.

4.19.6 IMPACT OF ALTERNATIVE E

National Scenic Trails

The PCNST corridor would be designated as the PCNST RMZ within the Chimney Peak SRMA. This designation would not provide additional protection to the scenic value of the trail, however may result increased facilities (trail heads, spur trails etc.) and services (patrols) which may marginally

and locally alter trail values (e.g., occurrence of a kiosk on the landscape at a trailhead, or change to the social/administrative setting of the trail through increased patrols).

National Recreation Trails

Recommendation of the San Joaquin River Trail as a National Recreation Trail directly supports the values of the trail through identification and provision of outdoor recreation opportunity. The portions of this trail managed by the BLM (the proposed trail extends off public lands) occur within the San Joaquin River Gorge SRMA through multiple RMZs. Although not all RMZs through which the trail passes specifically target trail use activities, these designations support the provision of outdoor recreation opportunities and though application of their management provide protection to the ancillary values of the trail including physical, social and administrative setting.

The occurrence of two National Recreation Trails (the Wu Ki' Oh and the San Joaquin River Trail) in close proximity to each other would be expected to multiply use marginally on each trail as a result of increased visitor awareness and the draw of two recognized trails in one location. This is again beneficial to trail values.

4.20 WILD AND SCENIC RIVERS

Eight river segments totaling approximately 30 miles were studied for eligibility (i.e., segment must be free flowing and contain at least one river-related outstandingly remarkable value (ORVs)). In conjunction with this plan, a determination of suitability and a tentative classification were given to these river segments.

Once determined suitable a river segment is managed for the protection of their tentative classification, ORVs, and free-flowing nature until such a time that Congress either designates the segment as part of the NWSRS or removes it from consideration. If the segment is removed from consideration, it would be managed according to the underlying management provisions of the RMP. For example, segments within ACECs would be managed according to the provisions of the respective ACEC.

METHODS OF ANALYSIS

The area of analysis consists of the eight eligible river segments studied for suitability for inclusion in the NWSRS in conjunction with the RMP. Specifically the analysis focuses on the 0.5 mile corridor created around each river segment for a total acreage of 12,220 acres.

Three elements of a WSR can be impacted by management actions; the free flowing characteristics, the ORVs for which the river segment was found eligible and the tentative classification assigned to it. Once determined suitable (and until that determination is acted upon by congress) interim management protects the aforementioned elements from impacts that would impede the free flowing nature, degrade the ORVs or alter the tentative classification. Therefore, if a river segment is determined suitable, no adverse impacts are anticipated. River segments not determined suitable

would not receive such protection and their free flowing characteristics and ORVs could be adversely impacted.

Direct impacts to free flowing characteristics include any action that would modify the water-course/streambed, this could include; impoundments, channelization or diversions. Indirect impacts would result from actions (either BLM or others) that remove water from the river above the segment and reduce in-stream flows below an acceptable level.

Direct impacts to the ORVs are dependent on the ORVs present, they range from protection of specific species (biological ORVs), to elimination of surface disturbance adjacent to the river (scenic ORVs). Indirectly ORVs are impacted by actions that improve or enhance the ORVs such as, maintenance or improvement of riparian habitats.

The tentative classification is impacted when a level of alteration occurs within the management corridor that shifts its qualification as one category as opposed to another. For example a scenic river that has a route built along its banks may no longer qualify as scenic, but still be suitable for a recreational classification.

For the purposes of analysis the impacts on free flowing characteristics and ORVs of river segments not determined suitable are described to identify the consequences, if any, of a negative determination.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Wild and Scenic Rivers: Biological Resources, Comprehensive Trail and Travel Management, Recreation and Visitor Services, and Areas of Critical Environmental Concern. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- The free-flowing character of suitable waterways will be protected to the extent that modifications such as stream impoundments, channelization, and/or rip-rapping will not be permitted along public lands shorelines.
- Protection of free-flowing character and dependent ORVs is limited because there are no federal reserved water rights established for in-stream flow purposes due to suitability determinations.
- Maintenance or enhancement of riparian-wetland areas will ensure protection of all suitable waterways from surface-disturbing activities, however not to the full 0.5 mile extent of the WSR corridor.

4.20.1 IMPACT OF ALTERNATIVE A (NO ACTION)

No suitability determinations would be made for river segments studied and found to be eligible. All river segments would remain in interim protective management until such time a suitability

determination was made. In addition to the protective management all eligible river segments receive rivers flowing through ACECs, SRMAs (with compatible management), in wilderness, or with specific biological values (managed as special management areas) would be further protected by these overlapping management designations.

4.20.2 Impacts Common to All Action Alternatives

The Wild and Scenic River designations change across the action alternatives, as such, there are no impacts considered common to all action alternatives.

4.20.3 Impact of Alternative B

Two segments of river (segment one of the San Joaquin River and the North Fork of the Kaweah River) for a total of eight miles would be determined suitable for inclusion in the NWSRS and pursued for congressional designation. Each segment would have a 0.5 mile corridor established (0.25 miles each side of the river) to apply management to maintain or enhance the free flowing nature and ORVs making the segment eligible. In accordance with BLM policy this corridor would be managed so no action could harm the values for which the river segment is found eligible and suitable. In addition to the WSR corridor these river segments are further given protective management through the overlapping SRMA and ACEC designations. Segment one of the San Joaquin River occurs within the Pa San RMZ of the San Joaquin River Gorge SRMA. This RMZ targets primitive recreation types, and prescribes VRM Class I management; both of which aid in protection of the ORVs and maintain the Wild/Scenic classification. The suitable segment of the North Fork of the Kaweah occurs within the Kaweah ACEC. The ACEC broad management objectives seek to preserve biological resources (including riparian systems) and protect geological resources. The ACEC also restricts recreational visits to the fall and winter seasons, making recreational use more manageable along this segment of river; all of which is in concert with WSR management. In both cases the protection provided by a WSR designation would only add minimal protection beyond that achieved through attainment of a federal water allocation.

Designation of the San Joaquin River Gorge SRMA and Kaweah ACEC in which these rivers occur would protect the tentative classifications assigned to these river segments and further ensure that the free flowing nature and ORVs of the river are maintained. There would be no adverse impact on these river segments.

Those river segments not determined suitable would be dropped from further consideration. The values which made these rivers eligible would receive no protection from WSR management, however, rivers flowing through ACECs, SRMAs (with compatible management), in wilderness, or with specific biological values (managed as areas of ecological importance) would receive continued protection of their ORVs. This protection in some form of overlapping designation would apply to all studied river segments.

4.20.4 IMPACT OF ALTERNATIVE C

All eight river segments for a total of 30 miles would be determined suitable for inclusion in the NWSRS and pursued for congressional designation. Each segment would have a 0.5 mile corridor established (0.25 miles each side of the river) to apply management to maintain or enhance the free flowing nature and ORVs making the segment eligible. In accordance with BLM policy this corridor would be managed so no action could harm the values for which the river segment is found eligible and suitable.

4.20.5 IMPACT OF ALTERNATIVE D

All eight river segments for a total of 30 miles would be determined suitable for inclusion in the NWSRS and pursued for congressional designation. Each segment would have a 0.5 mile corridor established (0.25 miles each side of the river) to apply management to maintain or enhance the free flowing nature and ORVs making the segment eligible. In accordance with BLM policy this corridor would be managed so no action could harm the values for which the river segment is found eligible and suitable.

4.20.6 IMPACT OF ALTERNATIVE E

No river segments would be determined suitable for inclusion in the NWSRS and all segments would be dropped from further consideration. The values which made these rivers eligible would receive no protection from WSR management, however, rivers flowing through ACECs, SRMAs (with compatible management), in wilderness, or with specific biological values (managed as areas of ecological importance) would receive continued protection of their ORVs. This protection in some form of overlapping designation would apply to all studied river segments.

4.21 WILDERNESS AND WILDERNESS STUDY AREAS

Both designated wilderness areas and wilderness study areas (WSAs) have legislative and regulatory protections. In the case of Wilderness to preserve their wilderness character and in the case of WSAs maintain wilderness characteristics until such time that congress either designates as Wilderness or releases from study status. As such, any action that threatens the above values of an area would not be permitted.

Wilderness character is defined by the areas ability to demonstrate an untrammeled and undeveloped nature, appear in a natural state and provide opportunities for solitude and unconfined primitive recreation. It is these character elements that can be impacted by management decisions throughout the alternatives. Where management actions seeks to maintain or enhance at natural state (e.g., protection of biological resources) the associated character element is beneficially impacted, however where the same protective management implements on the ground activities (e.g., pulling weeds) the untrammeled nature may be adversely impacted. Where management actions allow for surface disturbance and development all character elements can be adversely impacted.

METHODS OF ANALYSIS

The area of analysis focuses on Wilderness and WSAs within the Decision Area. Since both are protected from action that would diminish wilderness character the analysis is further refined to only WSAs when/if released by congress from study status.

The wilderness character elements of untrammeled and undeveloped nature, naturalness and provision of opportunities for solitude and unconfined primitive recreation types are used as the indicators for impacts. These elements are beneficially impacted when they are either protected or enhanced (e.g., beneficial impacts to the untrammeled nature occur when management actions or restrictions are removed or lifted). In contrast the elements are adversely impacted when they lose protection or become diminished (e.g., increased visitation may diminish opportunities for solitude).

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Wilderness Study Areas: Biological Resources, Areas of Critical Environmental Concern, and Lands with Wilderness Characteristics. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

ASSUMPTIONS

The following assumptions are used in the impact analysis:

- Due to legislative protections impacts to Wilderness and WSAs (prior to release) do not vary greatly by alternative and the existing conditions would likely be maintained or marginally improved through renewed management emphasis and improved planning (e.g., route designations).
- Wilderness areas would continue to be managed according to BLM Manual 8560, Management of Designated Wilderness Areas (BLM 1983), BLM Handbook H-8560-1, Management of Designated Wilderness Areas (BLM 1988), 43 CFR Subpart 6300, Management of Designated Wilderness Areas, and in coordination and cooperation with other agencies with authority.
- WSAs would continue to be managed under the Interim Management Policy for Lands under Wilderness Review (BLM Handbook H-8550-1, [BLM 1995]) until Congress either designates or releases all or portions of the WSAs from any further consideration for wilderness.
- Management of both wilderness and WSA is subject to valid existing rights, the impact of which is not included in the analysis.
- Congress will act on WSA recommendations by releasing them from study status, with no specific management guidelines associated with their release.

4.21.1 IMPACT OF ALTERNATIVE A (NO ACTION)

No management guidance is provided for the management of WSA once released from study status by congress. These lands would be managed as multiple-use dispersed public lands except where overlapping designations guide management otherwise.

Portions of the Milk Ranch/Case Mountain WSA (8,570 acres) and Piute Cypress WSA (400 acres) would be managed within ACECs (Case Mountain and Piute Cypress) where the natural and undeveloped elements of wilderness character would still receive some protection from special management prescriptions such as, restricted mineral development and limited OHV designation. Untrammeled nature and opportunities for primitive unconfined recreation may be adversely impacted through management actions in the Piute Cypress ACEC that restrict the cross country use of livestock and prohibit overnight camping.

Besides overlapping with ACEC designations, several WSA once released would be managed within Special Management Areas (SMAs). The Erskine Creek SMA would provide protection of natural and undeveloped elements to portions of the Piute Cypress WSA (2,500 acres) from mineral development. The application of recreation management restricting camping within the North Fork of the Kaweah SMA would reduce the untrammeled nature and opportunities for primitive unconfined recreation in portions of the Milk Ranch/Case Mountain and Sheep Ridge WSA.

Rockhouse Basin WSA and potions of Owens Peak and Piute Cypress WSAs would be managed within the Monache-Walker Pass NCLWMA however this affords no protection of the wilderness character elements.

Portions of the aforementioned WSAs not within an overlapping designation and the remainder of the WSAs released would be managed in concert with the rest of the public lands in the Decision Area. It's anticipated that over time presence of some wilderness character could be diminished in these areas, however due to many of these areas being adjacent to wilderness protection may be inferred to them by their location. Black Mountain and Moses WSA would be most at risk to adverse chance since they are small isolated parcels.

4.21.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The management of WSAs once released by congress changes across the action alternatives, as such, there are not impacts considered common to all action alternatives.

4.21.3 IMPACT OF ALTERNATIVE B

Those WSAs (1,880 acres) directly adjacent to designated Wilderness would be managed for wilderness characteristics. Management for wilderness characteristics would continue to protect the elements of wilderness character present, through closure to mineral development, designation as an OHV closed areas, and identification as VRM Class II. Minimal impact would be anticipated to wilderness character present.

A total of 18,650 acres of three WSAs would be managed within ACECs. All of Mike Ranch/Case Mountain and Sheep Ridge WSAs would be managed as and within the Kaweah ACEC which would provide some protection to the natural and undeveloped elements through restrictions on mineral development. Restrictions to seasonal visitation on portions of the area, however, may reduce the untrammeled nature and limit opportunities for primitive unconfined recreation. Portions of the Piute Cypress WSA would be managed within the Piute Cypress and Erskine Creek ACECs, while protection would be provided from mineral development, there would be no anticipated impact to opportunities for primitive unconfined recreation, as no camping restriction would be in place in either of the ACECs.

Black Mountain and Moses WSA (610 acres) would be managed as multiple-use dispersed public lands and most at risk to degradation and loss of all wilderness character elements.

4.21.4 Impact of Alternative C

Identification of all WSA, after release from study status by congress, for management to protect wilderness characteristics would maintain the protection of wilderness character through implementation of management including, closure or withdrawal from mineral development, identification as right-of-way exclusion zones, designation as OHV closed areas, and management as VRM Class I. Where ACEC designation overlaps (Kaweah, Piute Cypress and Erskine Creek) it is anticipated that more stringent parts of the ACEC management designations would be applied and may diminish the untrammeled nature and opportunities for primitive unconfined recreation.

4.21.5 Impact of Alternative D

Identification of all WSA, after release from study status by congress, for management to protect wilderness characteristics would maintain the protection of wilderness character through implementation of management including, closure or withdrawal from mineral development, identification as right-of-way exclusion zones, designation as OHV closed areas, and management as VRM Class I. Where ACEC designation overlaps (Kaweah, Piute Cypress and Erskine Creek) it is anticipated that more stringent parts of the ACEC management designations would be applied and may diminish the untrammeled nature and opportunities for primitive unconfined recreation.

Exclusion of livestock grazing from all lands may enhance the natural elements of wilderness character. The undeveloped nature and opportunity to experience solitude may be impacted by both the removal of rangeland improvements; which would enhance these elements, and the construction of fencing around public lands needed to implement this action; which would diminish these elements.

4.21.6 Impact of Alternative E

All WSAs, once released from study status would be managed as multiple-use dispersed public lands. Where ACEC designation overlaps (18,650 acres in Kaweah, Piute Cypress and Erskine Creek ACECs) it is anticipated that more stringent parts of the ACEC management designations would be

applied. These areas would still receive some protection from the impact of mineral development on the natural and undeveloped wilderness character elements.

The management for North Fork ERMA would be applied to a portion of the Sheep Ridge WSA. Targeted activities of the ERMA include fishing, hunting, and water-play would be consistent with the maintenance of wilderness character. Opportunities for solitude would be adversely impacted due to numbers of visitors expected during the summer.

SOCIAL AND ECONOMIC CONSIDERATIONS

4.22 SOCIOECONOMIC RESOURCES

This section presents an analysis of social and economic impacts of the management alternatives proposed in the RMP/EIS. This document discusses employment, labor income, and effects on sectors in the impact area economy that encompass the Bakersfield FO. Impacts to revenues received by states and counties, environmental justice, and communities within the Planning Area are also presented. Finally, the alternatives are discussed in light of forecasts for the area over the 20-year period of analysis.

The economic analysis focuses on changes in labor income and employment associated with BLM planning actions and estimated outputs for the alternatives (Table 4.22-1). The social analysis focuses on the interests and concerns of identified communities relative to the alternatives. Higher employment, subject to some qualifications, can be seen as a benefit to the local community. Other benefits are also present, although some are not easily measured or tied to economic activity. An example of where effects are difficult to quantify are equity effects, impacts to social values, and non-market values. Regardless, these benefits are discussed despite the inability to measure them quantitatively.

Table 4.22-1
BLM Outputs, by Alternative

Output	Current[1]	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
General recreation (visits)[2]	266,899	298,092	298,092	288,777	288,777	307,408
Fish and wildlife recreation (visits)	88,966	99,364	99,364	96,259	96,259	102,469
Cattle (AUMs)[3]	25,200	37,626	40,056	37,775	859	42,288
Natural gas (thousand cubic feet)	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Oil (barrels)	19,000,000	15,000,000 to 19,000,000	15,000,000 to 19,000,000	15,000,000 to 19,000,000	15,000,000 to 19,000,000	15,000,000 to 19,000,000
Sand and gravel (short tons)	2,000	2,000	1,500	2,000	2,000	1,500
Gypsum (short tons)	5,000	5,000	5,000	5,000	5,000	5,000

[1] Estimates include actual use levels (average annual use).
[2] Recreation visits are expected to increase by 2% per year as a result of observed rates of increase in BLM recreation data (Recreation Management Information System 2010).
[3] This is the total of authorized AUMs and projected future authorized AUMs, under the assumptions that 75 percent of acres available for application would be authorized with a stocking rate of 5 acres per AUM (except under the Current column where current average annual authorized AUMs are displayed).

The social analysis focuses on changes to social and economic well-being as it relates to the quality of life of communities identified in Chapter 3. While many of the potential changes in quality of life

can only be discussed qualitatively, outputs in Table 4.22-1 provide an approach to discuss the magnitude of effects to these communities. Scoping comments from the RMP planning process provided specific information pertaining to the concerns of individuals and groups affected by this plan. All comments were examined and general categories were formed from common themes pertaining to community connections and interests in BLM management. The three communities of interest identified include individuals and groups interested in Recreation and Access, Preservation of Rural Characteristics and Lifestyle Associated with Grazing, and Oil and Gas Development.

METHODS OF ANALYSIS

In order to accurately portray the relationship of current BLM management and the community, the social and economic geographic scope of analysis must be defined. The social and economic effects from changes on BLM lands feasibly extend beyond the immediate vicinity of their location. Consequently, Fresno, Kern, Kings, Madera, San Luis Obispo, Santa Barbara, Tulare, and Ventura Counties make up the impact area used to examine social and economic effects from management under this DEIS.

Employment and labor income estimates developed for this analysis include direct, indirect, and induced economic effects measured using IMPLAN. Direct employment would, for example, be generated in the agriculture sector as a result of livestock grazing on BLM. Additional employment would be generated as the affected livestock operators purchase services and materials as inputs ("indirect" effects) and ranchers spend their earnings within the local economy ("induced" effects). Direct, indirect, and induced effects are combined in the discussion of effects below.

Theoretically, expenditures associated with changes in final demand would be available and specific enough to allocate to each of the 440 sectors contained in the IMPLAN model. National-level production functions from IMPLAN are used to assess impacts from BLM outputs (Table 4.22-1). Expenditures should be delineated between local and non-local providers, as purchases out of the economic study region would have no local economic impact. IMPLAN's data contain information, called regional purchase coefficients, which describe the proportion of a given commodity that would be provided by local producers. Previous modeling experience has shown that the data contained in the IMPLAN modeling system for the various sectors are an accurate representation of impacts.

The social analysis assesses the potential effects of different management actions on potentially affected social groups. These groups were identified based on the results of public scoping and comments received during the planning process. This analysis addresses the potential impacts of the alternatives based on the issues and concerns raised by these groups. The analysis draws upon ongoing discussions between the BLM and potentially affected publics, as well as discussions with subject matter experts involved in other parts of the analysis. The analysis is primarily qualitative with quantitative measures used as appropriate.

The social groups are defined to facilitate the discussion of social impacts. These discussions simplify what are often quite complex and unique values and attitudes, and the groupings presented here are by no means mutually exclusive. For example, many ranchers also participate in recreation activities. It is also worth noting that attitudes, interests, and values often change over time. The social analysis covers the groups and individuals that are most likely to be affected by this plan.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on the Economic and/or Social condition: Biological Resources, Cultural Resources, Lands with Wilderness Characteristics, Soil Resources, Visual Resources, Water Resources, Wildland Fire and Ecology Management, Comprehensive Trail and Travel Management, Lands and Realty, Livestock Grazing, Minerals Management, Areas of Critical Environmental Concern, Back Country Byways, and National Trails. The effects that pertain to social and economic components of some of these resources are addressed directly (i.e., Livestock Grazing and Minerals); while other resources are considered as a component of overall economic or social impacts. Those resources not listed are deemed to have negligible effects and therefore, are not analyzed further.

Assumptions

The following analysis methods and assumptions were used to complete the analysis for the social and economic impacts from the proposed management decisions:

- The planning area population would continue to increase and age as described in Chapter 3.
- Regional economic impacts are estimated based on the assumption of full implementation of each alternative. The actual changes in the economy would depend on individuals taking advantage of the resource-related opportunities that would be supported by each alternative. If market conditions or trends in resource use were not conducive to developing some opportunities, the impact to the economy would be different than estimated here.
- Resource specialists projected annual resource outputs that are based on the best available information and professional judgment. The purpose of the economic analysis is to compare the relative impacts of the alternatives and should not be viewed as absolute economic values.
- Projected recreation visits are distributed among different types of visitors based on the results of National Visitor Use Monitoring (NVUM) surveys conducted for the Sequoia National Forest.
- The ratios of recreation visits to jobs and income used to assess the impacts of the alternatives are based on national ratios developed through the U.S. Forest Service's NVUM program (Stynes and White 2005).
- Baseline recreation demand is assumed to increase by 2 percent per year based on the observed annual rate of recreation use in the Bakersfield FO (Recreation Management Information System [RMIS] 2010).

- Levels of expenditures and employment at the Field Office are not expected to change as result of the alternatives. Thus a constant budget over the life of the plan is a reasonable and practical assumption.
- Non salary-related expenditures made by the Bakersfield FO are assumed to be allocated to different economic sectors based on data compiled for the Sequoia National Forest.
- Livestock grazing revenues received by the BLM and benefits of BLM forage were calculated using the conservative AUM price for 2010 of $1.35 per AUM and the 2009 statewide average AUM price for private land of $16.40, adjusted for inflation (U.S. Department of Agriculture 2010).
- 75% of the acres allocated as available for livestock grazing but without a current authorization are estimated to result in new grazing authorizations on those lands within the life of the plan. The reasonably foreseeable levels of grazing use in those new authorizations are projected given an estimated average stocking rate of 5 acres/AUM.
- Between approximately 80 and 90 percent of all surface-disturbing activities related to the oil industry would occur in the San Joaquin Valley portion of the Planning Area. In fact, during the last 10+ years, more than 95% of all federal drilling has occurred in this area. Most of this would be within the established boundaries of producing fields in Kern County, and the vast majority would be on lands that are already leased (not on new leases issued subsequent to this RMP). (Appendix M. Reasonably Foreseeable Development Scenarios).
- The alternatives establish areas to be managed for wilderness characteristics and Visual Resource Management (VRM) designations changes to ACECs and other special designations such as Wild and Scenic River (WSR) suitability determinations. These designations would further maintain and perhaps enhance non-market values associated with natural amenities protected on these lands.

4.22.1 IMPACT OF ALTERNATIVE A (NO ACTION)

4.22.1.1 Economic

Alternative A is not expected to reduce economic diversity (the number of economic sectors) or increase economic dependency, which occurs when the local economy is dominated by a limited number of industries. Shifts in emphasis could occur, but these would not result as a consequence of planning actions under this alternative. While this alternative has the potential to affect local businesses and individuals, the relative contribution of BLM-related activities to the local economy would not be large enough to have any measurable effect on economic diversity or dependency. For example, the dependency of the local economy on the livestock industry, mining, and recreation activities would not be affected by BLM resource management under this alternative. Under this alternative, all BLM-related contributions, i.e. jobs and labor income, would continue to support less than 1 percent of totals within the impact area economy, but could be more important for smaller communities within the planning area.

Estimates of the levels of employment and labor income that would be supported under this alternative are based on projected resource outputs from BLM management actions (see Table 4.22-1), estimated payments to counties, BLM expenditures, and other externally funded activities on BLM lands. The projected outputs and activities are discussed for BLM resource areas in the following sections. Estimated average annual employment and labor income from outputs and activities are summarized in Table 4.22-3 and Table 4.22-4 below, respectively.

As a result of Alternative A, about 3,394 total jobs (direct, indirect and induced jobs) and $200.2 million in total labor income (direct, indirect and induced income) would be generated in the impact area economy on an average annual basis from recreation, livestock grazing, fluid minerals, solid minerals, BLM expenditures and externally funded projects on BLM. In addition, contributions resulting from payments to counties would accrue from PILT, grazing payments (grazing lease fees and possessory interest taxes) and minerals royalty payments. Payments to counties would vary under this alternative (from 518 to 803 total jobs and from $27.3 to $42.3 million in total labor income) based on energy market conditions, the resulting minerals production and royalties paid and are discussed below in the subsection on Impacts to Counties.. Employment and labor income contributions are slightly higher than current contributions evaluated in Chapter 3 due to the larger estimated potential opportunity for livestock grazing, solid minerals potential and recreation visits evaluated under this alternative than levels evaluated under the current actual use scenario. Estimates of livestock grazing contributions are based on the estimated potential grazing opportunity that would be available rather than actual grazing use evaluated under in Chapter 3. The largest employment and labor income effects would occur in the Mining, and Accommodation & Food Services sectors (IMPLAN 2009).

While employment and labor income contributions under this alternative would be the higher than alternatives B, C and D, less acreage would be designated under protected areas (ACECs, land to be managed for wilderness character, WSR suitable segments and VRM Class I and II acres) than the other alternatives (*Comparison of Alternatives Table*; Chapter 2). Therefore this alternative would provide less protection of non-market values and natural amenities than the other alternatives.

Recreation

The role of recreation in the local economy will continue to increase as OHV use, boating, biking and other forms of recreation continue to increase. Travel to the area from outside the area to enjoy these opportunities is not an unreasonable assumption.

Under this alternative recreation management would continue to sustain opportunities important to the area economy and well-being of area communities. As noted in Chapter 3, opportunities provided to local residents are important; however, their recreation expenditures do not represent new money introduced into the economy. If BLM related opportunities were not present, it is likely that residents would participate in other locally based recreation activities and this money would still be retained in the local economy. Recreation on BLM administered lands would sustain more jobs

and labor income than all other programs except fluid minerals under this alternative (see Table 4.22-3 and Table 4.22-4 below).

While OHV use would continue to be limited to designated routes, Alternative A would provide the most miles available for motorized uses than the other alternatives. As a result of continued current recreation management under the No Action Alternative visitors use would continue to increase by roughly 2 percent per year (based on rates of visitation observed in the past; RMIS 2010). Given this increase, contributions from recreation related visits to the Bakersfield FO are greater under Alternative A than experienced currently (Table 4.22-1). Expenditures of these visitors would support approximately 278 jobs and $7.8 million in labor income in the impact area economy on an average annual basis.

Livestock Grazing

The estimated potential grazing opportunity under Alternative A of 37,626 AUMs (Table 4.22-1) would support approximately 5 jobs and $125,000 in labor income (Table 4.22-3 and Table 4.22-4). While these contributions are higher than current actual contributions from billed livestock grazing presented in Chapter 3, it must be noted these are impacts from the estimated potential level of AUMs in the planning area. This is the total authorized number of AUMs that could be offered under average forage conditions which may not be an accurate portrayal of actual impacts. Factors such as drought or high production years, changing permit or lease holders, financial limitations on livestock operators, market conditions and implementation of grazing practices to improve range conditions are important to consider.

In addition to employment and income provide by BLM forage, the value of BLM forage to area lessees and permittees should also be considered. While dependency on BLM forage would remain low (the number of cattle that BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007), BLM forage would continue to provide a low cost and important complement to some livestock producers' other sources of forage. In addition, private property values can be considered to be connected to BLM grazing permits or leases and would be maintained under this alternative. Under this alternative, payments to counties associated with grazing fees and possessory interest taxes would continue to support area communities under this alternative, and are discussed below under the subsection on Impacts to Counties.

Fluid Minerals

Fluid mineral management under this alternative would continue to support levels of production depicted in Table 4.22-1. Under this Alternative historic production of 15 to 19 million barrels of oil and 5 million MCF of gas is anticipated to continue. Contributions to employment and income from these uses would provide 2,871 total jobs (direct, indirect and induced jobs) and $179.5 million in total labor income (direct, indirect and induced income) on an average annual basis (Table 4.22-3 and Table 4.22-4). Seven percent of employment and 6 percent of labor income would continue to

be supported in the planning area minerals sector under this alternative as a result of total contributions (direct, indirect and induced) from fluid minerals management.

Solid Minerals (Locatable, Saleable and Solid Leaseable)

Salable mineral material from the community pit (Kelso) and Gypsum (solid leasable) would continue to be made available (Holloway Gypsum) under this alternative. Areas with mineral potential would continue to be restricted or closed to development: less than one percent of the acres with solid leasable mineral potential, 16 percent of the acres with salable mineral potential, and 8 percent of the acres with locatable, mineral potential. While future development under this alternative is possible, the driving force behind development on available acreage is price and demand, such as nearby construction needs for salable minerals. If market conditions are favorable it is anticipated that up to 20 locatable projects, 310 saleable projects and 2 solid leasable projects would potentially be developed on BLM. If this projected development occurred, 49 jobs and $3.1 million in labor income would be supported under this alternative (Table 4.22-3 and Table 4.22-4).

Impacts to Counties

Under this alternative BLM land identified for retention or disposal does not change thus entitlement acreage used to calculate Payment in Lieu of Taxes (PILT) would not change (Table 4.22-2). Further site specific NEPA process not covered under this plan would evaluate the availability of this land for disposal if proposed. If this land is disposed, it would no longer count towards the entitlement acreage used in Payment in Lieu of Taxes (PILT) calculations which could slightly decrease the contribution to county payments from BLM land in the area. However, predicting county payments based on entitlement acreage alone is impractical due to other factors used to determine PILT payments such as changes in the population ceiling and congressionally approved annual appropriation acts. Nevertheless, if BLM land is disposed, it would be subject to property taxes whereas before disposal it was not. Payments under PILT are designed to help offset losses in property taxes due to the nontaxable status of Federal lands within state or county boundaries. Therefore, county property taxes could offset losses from the qualifying entitlement acreage for PILT.

Table 4.22-2
Payments to Counties (2010 dollars)

Resource	Alternative A No Action	Alternative B Preferred	Alternative C	Alternative D	Alternative E
PILT	$2,309,773	$2,309,773	$2,309,773	$2,309,773	$2,309,773
Grazing (portion of grazing fees and possessory interest taxes)	$15,857	$15,857	$15,857	$404	$15,857
Solid Minerals	1,500	1,500	1,500	1,500	1,500
Minerals min	$42,232,782	$42,232,782	$42,232,782	$42,232,782	$42,232,782
Minerals max	$66,783,313	$66,783,313	$66,783,313	$66,783,313	$66,783,313

Any changes under this alternative in livestock grazing revenues (lease fees and possessory interest taxes) would not be large enough to substantially affect the overall amount of payment made to counties since these payments make up a small portion of county payments under this alternative (Table 4.22-2).

Some of the sand and gravel removal by county and state governments is authorized under free use permits, such that no revenues or lease fees are received by BLM and consequently no payments to counties are made. Gypsum would continue to be removed under this alternative and is treated as a leasable since it is found on acquired lands. Thus royalties are collected in addition to those royalties received from oil and gas production. These royalties are distributed back to local governments under the 1902 Reclamation Act and the 1920 Mineral Leasing Act.

As discussed in Chapter 3 and in the Reasonably Foreseeable Development Scenarios developed for this plan (Appendix M) oil and gas are worldwide commodities and events that occur globally may have effects on production in the U.S. and in the planning area. In addition, the US and worldwide economic conditions have changed dramatically within the last couple of years, causing further uncertainty. Thus a range of oil and gas production and price is evaluated here to provide context within a range of possible scenarios. Costs to local governments would remain unchanged as a result of planning actions, consequent changes in population, or oil and gas development; i.e. demand for services and infrastructure would not change as a result of BLM planning actions, since the level of development is not anticipated to change under this alternative. Payments to counties would remain a small portion of local government revenue in all planning area counties (less than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

Payments to counties under Alternative A include PILT, grazing and mineral related payments and would range from approximately $44.56 to 69.11 million based on anticipated variation in oil and gas royalties. PILT payments that can be attributed to BLM entitlement acreage range from 5 to 3 percent of the min and max potential payment, respectively. Payments received from livestock grazing revenues include Section 3 and Section 15 payments in addition to possessory interest tax and range from .04 to .02 of the minimum and maximum potential payment. Payments associated with solid and fluid minerals would vary from 95 to 97 percent of the total payment to counties; however, impracticalities exist in predicting actual levels of production, market prices and the resulting royalties paid. These payments would support from 518 to 803 jobs and $27.3 to $42.3 million in labor income (Table 4.22-3 and Table 4.22-4). As discussed above this estimate is based on current prices and potential production. Actual production and market price cannot be projected thus, these estimates may not be an accurate portrayal of actual impacts. Regardless contributions from these payments are likely to remain a small but important portion of county revenue (less than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

Table 4.22-3
Average Annual Employment8 by Program by Alternative (Full and Part-time Jobs)

Resource	Alternative A No Action	Alternative B Preferred	Alternative C	Alternative D	Alternative E
Recreation[9]	278	278	269	269	287
Livestock Grazing	5	5	5	0.1	6
Solid Minerals	49	34	20	20	36
Fluid Minerals	2,871	2,871	2,871	2,871	2,871
Payments to Counties - Low	518	518	518	517	518
Payments to Counties - High	803	803	803	803	803
BLM Expenditures	177	177	177	177	177
Externally funded projects	15	19	19	19	19
Total BLM Management- low	3,912	3,901	3,878	3,873	3,913
Total BLM Management- high	4,197	4,186	4,163	4,158	4,198

Table 4.22-4
Average Annual Labor Income by Program by Alternative (thousands of 2011 dollars)

Resource	Alternative A No Action	Alternative B Preferred	Alternative C	Alternative D	Alternative E
Recreation[10]	$7,789	$7,789	$7,546	$7,546	$8,032
Livestock Grazing	$125	$133	$126	$3	$141
Solid Minerals	$3,121	$2,198	$1,220	$1,220	$2,359
Fluid Minerals	$179,539	$179,539	$179,539	$179,539	$179,539
Payments to Counties - Low	$27,253	$27,253	$27,253	$27,243	$27,253
Payments to Counties - High	$42,267	$42,267	$42,267	$42,258	$42,267
BLM Expenditures	$9,158	$9,158	$9,158	$9,158	$9,158
Externally funded projects	$458	$704	$706	$706	$702
Total BLM Management- low	$227,443	$226,774	$225,546	$225,414	$227,183
Total BLM Management- high	$242,458	$241,789	$240,561	$240,429	$242,198

BLM Expenditures and Employment

Levels of expenditures and employment at the Field Office are not expected to change as result of this alternative. Under this alternative, it is estimated that average annual BLM expenditures would continue to support around 177 total jobs and $9.2 million in total labor income (Table 4.22-3 and

[8] Average annual values are based on projected impacts over the 20-year analysis period. Source: Potential employment and labor income impacts are based on the estimated resource outputs summarized by alternative in Table 4.6.2-1. Potential impacts were estimated using the IMPLAN model and FEAST.

[9] As discussed in Chapter 3, these recreation estimates do not include visits from all local use since their expenditures do not represent new money into the economy. Within the CRVFO it was determined that 85 percent of non-wildlife recreation use would not occur in the impact area if the opportunity on BLM was not provided, as a result only 15 percent of the local use is not included in the CRVFO model.

[10] As discussed in Chapter 3, these recreation estimates do not include visits from all local use since their expenditures do not represent new money into the economy. Within the CRVFO it was determined that 85 percent of non-wildlife recreation use would not occur in the impact area if the opportunity on BLM was not provided, as a result only 15 percent of the local use is not included in the CRVFO model.

Table 4.22-4) in the BKFO planning area economy. In addition to direct job and income impacts from BLM employees and their salaries, these estimates include impacts to industries that provide factors of production to BLM, and other industries impacted by wage related spending.

Renewable Energy

There is currently no geothermal, wind or solar energy projects on BLM within the planning area; however, inquires, proposals, and ROW applications have occurred (Appendix N Reasonably Foreseeable Development Scenarios). Under this alternative opportunities for the Bakersfield FO to support renewable energy development will continue, limited only on areas that have non-discretionary closures (i.e., Wilderness Areas).

Externally Funded Projects

A portion of the management actions performed on BLM are carried out with funds not provided by BLM. Thus these expenditures are not accounted for under the category of BLM expenditures discussed above. Recent examples of such projects are discussed in Chapter 3. Under the No Action Alternative current projects would continue to be funded from external sources and are estimated to support about 15 total jobs and $458,000 in total labor income (see Table 4.22-3 and Table 4.22-4).

Role of Amenities, Migration and Non-market Values

The economic analysis assesses the economic effects of the direct use of resources in terms of jobs and income. This type of analysis does not include other types of economic value often referred to as non-market values. Non-market values are important to the well-being of visitors, area residents and others outside the planning area. These values include natural amenities, quality of life factors, recreational opportunities, ecosystem services and non-use values such as existence, option and bequest values. As noted above, non-market values are difficult to quantify and insufficient data exists to assess the effects of management actions. However, the fact that no monetary value is assigned to these values does not lessen their importance in the decision making process.

In addition, helpful inferences can be made. While there is a general consensus that non-use values exist, the methodologies for measuring these values are controversial and difficult to apply. Wilderness has been the subject of numerous non-use studies, usually conducted for specific natural areas, however no attempt has been made to directly elicit potential non-use values associated with the alternatives under this RMP. The alternatives establish areas to be managed for wilderness characteristics, changes to ACECs and other designations such as Wild and Scenic River (WSR) suitability and Visual Resource Management (VRM) designations. These designations would further maintain and perhaps enhance non-market values associated with natural amenities protected on these lands.

Additionally land to be managed for wilderness characteristics, WSR suitable segments and areas managed for VRM Class I and II may attract new residents and tourists to the area which would

then contribute to area economic activity. While in some cases land protection directly reduces recreation visitation or other resource uses, it has been shown that natural amenities can offset job losses due to population growth (Eichman et al. 2010). Natural amenities and quality of life have been increasingly recognized as important factors in the economic prospects of many rural communities in the West (Rudzitis and Johnson 2000). In addition, non-labor income is intimately tied to natural amenities as discussed in Chapter 3. Rural county population change, the development of rural recreation, and retirement-destination areas are all related to natural amenities (McGranahan 1999). Thus, designations that maintain and protect natural amenities may similarly contribute to area economic well-being.

Under Alternative A, less land would be managed under protected area designations than under the other alternatives. Therefore, this alternative would provide the least protection of non-market values and natural amenities amongst the alternatives (see *Comparison of Alternatives Table*; Chapter 2). Consequently well-being associated with non-market values and potential contributions from new residents and tourists attracted by natural amenities could be less than the other alternatives.

4.22.1.2 Social

Recreation and Access

Under this alternative wildlife and non-wildlife visits are expected to increase (Table 4.22-1). Employment and income related to recreational activities, many of which are dependent on access to public lands, will at minimum continue to support this community's quality of life. While localized changes in access could occur, recreation opportunities will be maintained and enhanced thus accommodating existing recreation uses and expected increases in recreation uses (Table 4.22-1).

Effects of increased visitation on the quality of the recreation experience will depend on the type and location of the recreation activity taking place as well as the behavior of the individual recreating. No information is currently available on the effects of increased visitation on quality of recreational experience or access to public land. Regardless changes in the quantity and quality of recreation experiences are discussed in the recreation section of this EIS.

Alternative A has the smallest acreage restricted from camping amongst the alternatives; however, the annual length of stay would be the shortest. While OHV use would be limited to designated routes, Alternative A would provide the more miles available for motorized uses than the other alternatives, apart from Alternative D. As a result of SRMA management and route designations under this alternative, visitors use would continue to increase by 2 percent per year (based on rates of visitation observed in the past; RMIS 2010). Given this increase, average annual recreation visits under Alternative A are greater than experienced currently (Table 4.22-1). In addition, current access for other commercial and non-commercial uses would be maintained under current transportation management. Thus Alternative A continues to support quality of life through continued access to public land.

Preservation of Rural Characteristics and Lifestyle Associated with Grazing

Individuals and communities interested in the preservation of rural characteristics and lifestyle noted the importance of continued livestock grazing use. Effects on rural character and the cultural value of livestock grazing are dependent on continued availability of forage and landscapes used for grazing. Under this alternative the estimated potential grazing opportunity would continue to provide the same level of forage as available for lessees and permittees in the past and thus accommodate current levels of billed use depicted in the first column of Table 4.22-1. Resulting employment and income generated from livestock grazing activities would continue to contribute to the quality of life for those depending on the industry and connected industries. In addition, the cultural value and rural character associated with BLM forage would be maintained under this alternative.

Oil and Gas Development

Under this alternative, oil and gas production and development is anticipated to continue within its historic range (Table 4.22-1) as discussed in Chapter 3. Oil and gas fields on BLM-managed mineral estate within the Bakersfield FO have been active for over a century and are well developed. While wells are projected to be drilled on federal mineral estate, most of this drilling would occur within existing developed oil fields and would be considered infill and disturbance of new areas would be minimal. Employment and income generated from oil and gas development activities contribute to the quality of life for those depending on the industry and connected industries. In addition, potential change in population that would result from changes in employment would be similar to levels and change experienced in the past. Effects associated with oil and gas employment-related population change on infrastructure, community demographics, and quality of life would thus not change for communities in the planning area. Public perceptions about greenhouse gas emissions and global warming associated with development in the Bakersfield FO would continue since production and development levels are not anticipated to change from historic levels.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Order further stipulates that agencies conduct their programs and activities in a manner that does not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color, or national origin.

This alternative could result in increases in employment and labor income relative to current conditions over the next decade (see Table 4.22-3 and Table 4.22-4), from which minority and low income populations may benefit. As noted above, access for recreation and other uses would be accommodated under all the alternatives. In addition, access for cultural uses, traditional materials and cultural sites will continue to provide valuable resources to communities in the area; sustaining

lifestyles, traditions, ceremonies and the heritage that remain an important part of community lifestyle, rural character and quality of life.

Additionally, public involvement efforts for this project have been inclusive and the agency has considered input from persons or groups regardless of race, color, national origin, income, or other social and economic characteristics.

4.22.2 IMPACT OF MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

4.22.2.1 Economic

The action alternatives are not expected to reduce economic diversity (the number of economic sectors) or increase economic dependency, which occurs when the local economy is dominated by a limited number of industries. Shifts in emphasis could occur, but these would not result as a consequence of planning actions under the action alternatives. While the action alternatives have the potential to affect local businesses and individuals, the relative contribution of BLM-related activities to the local economy (see Alternative A and Chapter 3) and the relative differences between the action alternatives would not be large enough to have any measurable effect on economic diversity or dependency. For example, the dependency of the local economy on the livestock industry, mining, and recreation activities would not be affected by BLM resource management under the action alternatives. Under the action alternatives, all BLM-related contributions, i.e. jobs and labor income, would continue to support less than 1 percent of totals within the impact area economy, but could be more important for smaller communities within the planning area.

Estimates of the levels of employment and labor income that would be supported under the action alternatives are based on projected resource outputs from BLM management actions (see Table 4.22-1), estimated payments to counties, BLM expenditures, and other externally funded activities on BLM lands. The projected outputs and activities are discussed by resource in the following sections. Estimated average annual employment and labor income from outputs and activities are summarized in Table 4.22-3 and Table 4.22-4 above, respectively.

Recreation

While change in recreation may occur as a result of planning actions under the action alternatives, the role of recreation in the local economy will continue to increase as OHV use, boating, biking and other forms of recreation continue to increase. Travel to the area from outside the area to enjoy these opportunities is not an unreasonable assumption.

Under the action alternatives recreation management would continue to sustain opportunities important to the area economy and well-being of area communities. As noted in Chapter 3, opportunities provided to local residents are important however; their recreation expenditures do not represent new money introduced into the economy. If BLM related opportunities were not present, it is likely that residents would participate in other locally based recreation activities and this money would still be retained in the local economy. Recreation on BLM administered lands would

sustain more jobs and labor income than all other programs except fluid minerals under the action alternatives (see Table 4.22-3 and Table 4.22-4 below).

Jobs and income associated with recreation management should not overshadow the value of experience held by recreation users within the planning area. For example, backcountry or motorized use in the planning area could change as management actions are implemented. The value of these recreation experiences could thus change as visitor use changes. Changes in the quantity and quality of these recreation experiences offered are discussed in the recreation section of this EIS.

Fluid Minerals

Fluid mineral management under the action alternatives would continue to support levels of production depicted in Table 4.22-1. Management under this RMP will determine the extent of mineral resource activity in the future. For example, restrictions on mineral entry will occur for portions of Areas of Critical Environmental Concern (ACECs) with mineral potential. Regardless of these changes, area dependency on BLM related employment provided to the oil, gas and other mining sectors would not change amongst the action alternatives.

Historic production of 15 to 19 million barrels of oil and 5 million MCF of gas are anticipated to continue under all the action alternatives. Contributions to impact area employment and income from these uses would provide 2,871 total jobs (direct, indirect and induced jobs) and $179.5 million in total labor income (direct, indirect and induced income) on an average annual basis (Table 4.22-3 and Table 4.22-4). Seven percent of employment and 6 percent of labor income would continue to be supported in the planning area minerals sector under this alternative as a result of total contributions (direct, indirect and induced) from fluid minerals management.

Under all the action alternatives the change in population that would result from changes in mineral sector employment would be within the historic range of population change depicted in Chapter 3. In addition, the housing vacancy rate within the impact areas would accommodate any changes in housing demand from population changes since required households would not exceed one percent of current vacancies under all the action alternatives. It should be noted that these effects are based on current and past observed conditions in both the housing and oil and gas markets. Actual oil and gas activity and housing markets cannot be projected, thus these estimates may not be an accurate portrayal of actual impacts; however, they do provide a frame of reference for discussion of housing and infrastructure effects. In addition, projected population increases, discussed in Chapter 3 and the cumulative effects section below, also temper potential effects on housing availability and affordability at the local level.

Solid Minerals

Solid minerals would continue to be provided by BLM in the planning area under all the action alternatives (Table 4.22-1 above). Management under this RMP will determine the extent of mineral resource activity in the future. For example, restrictions on mineral entry will occur for portions of

Areas of Critical Environmental Concern (ACECs) with mineral potential. Regardless of these changes, area dependency on BLM related employment provided to mining sectors would not change amongst the action alternatives.

Impacts to Counties

Under all alternatives BLM land identified for retention or disposal varies; however, the identification of this land for potential land tenure changes does not guarantee disposal would occur. Further site specific NEPA process not covered under this plan would evaluate the availability of this land for disposal if proposed. If this land is disposed, it would no longer count towards the entitlement acreage used in Payment in Lieu of Taxes (PILT) calculations which could slightly decrease the contribution to county payments from BLM land in the area. However, predicting county payments based on entitlement acreage alone is impractical due to other factors used to determine PILT payments such as changes in the population ceiling and congressionally approved annual appropriation acts. Nevertheless, if BLM land is disposed, it would be subject to property taxes whereas before disposal it was not. Payments under PILT are designed to help offset losses in property taxes due to the nontaxable status of Federal lands within state or county boundaries. Therefore, county property taxes could offset losses from the qualifying entitlement acreage for PILT.

Some of the sand and gravel removal by county and state governments is authorized under free use permits, such that no revenues or lease fees are received by BLM and consequently no payments to counties are made. Gypsum would continue to be removed under all the action alternatives and is treated as a leasable since it is found on acquired lands. Thus royalties are collected in addition to those royalties received from oil and gas production. These royalties are distributed back to local governments under the 1902 Reclamation Act and the 1920 Mineral Leasing Act.

As discussed in Chapter 3 and in the Reasonably Foreseeable Development Scenarios developed for this plan (Appendix M) oil and gas are worldwide commodities and events that occur globally may have effects on production in the U.S. and in the planning area. In addition, the US and worldwide economic conditions have changed dramatically within the last couple of years, causing further uncertainty. Thus a range of oil and gas production and price is evaluated here to provide context within a range of possible scenarios. Costs to local governments would remain unchanged as a result of planning actions, consequent changes in population, or oil and gas development; i.e. demand for services and infrastructure would not change as a result of BLM planning actions, since the level of development is not anticipated to change under all the action alternatives. Payments to counties would remain a small portion of local government revenue in all planning area counties (less than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

Payments to counties under the action alternatives include PILT, grazing and mineral related payments and range from approximately $44.56 to 69.11 million based on anticipated variation in oil and gas royalties. PILT payments that can be attributed to BLM entitlement acreage range from 5 to

3 percent of the min and max potential payment, respectively. Payments received from livestock grazing revenues include Section 3 and Section 15 payments in addition to possessory interest tax and range from .04 to .02 of the minimum and maximum potential payment (except under Alternative D, where no grazing would occur). Payments associated with solid and fluid minerals would vary from 95 to 97 percent of the total payment to counties; however, impracticalities exist in predicting actual levels of production, market prices and the resulting royalties paid. As discussed above this estimate is based on current prices and potential production. Actual production and market price cannot be projected, thus these estimates may not be an accurate portrayal of actual impacts. Regardless contributions from these payments are likely to remain a small but important portion of county revenue (less than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

BLM Expenditures and Employment

Levels of expenditures and employment at the Field Office are not expected to vary as result of the action alternatives. While different action alternatives may cost more or less to implement, speculating whether the budget will be available is impractical. However, this does not mean implementation is impractical, since management priorities are likely to determine how funds are allocated to actions outlined in the plan. Thus a constant budget over the life of the plan is a reasonable and practical assumption. Under all the alternatives, it is estimated that average annual BLM expenditures would continue to support around 177 total jobs and $9.2 million in total labor income (Table 4.22-3 and Table 4.22-4) in the BKFO planning area economy. In addition to direct job and income impacts from BLM employees and their salaries, these estimates include impacts to industries that provide factors of production to BLM, and other industries impacted by wage related spending.

Renewable Energy

On BLM within the planning area, there are currently no geothermal leases however areas of high potential exist and would continue to be made available under all the action alternatives despite surface restrictions in other areas. While the Bakersfield FO has never had any geothermal, wind or solar installation projects inquires, proposal and requests for ROW applications have occurred (Appendix N Reasonably Foreseeable Development Scenarios). Under all the alternatives opportunities for the Bakersfield FO to support renewable energy development will continue despite surface restrictions in some areas.

Externally Funded Projects

A portion of the management actions performed on BLM are funded by external partners and thus not accounted for under the effects from BLM Expenditures and Employment. Under the Action Alternatives it is anticipated that OHV route decommissioning and closure would be funded externally through California OHV Commission grants. These externally funded projects would be performed in addition, to those occurring currently and discussed in Chapter 3. These actions are

labor intensive and utilize industries and associated businesses contained within the impact area economy. As a result 19 jobs and approximately $700,000 in labor income would be supported annually in the planning area economy (see Table 4.22-3 and Table 4.22-4).

4.22.2.2 Social

Recreation and Access

Under all the action alternatives wildlife and non-wildlife visits are expected to increase (Table 4.22-1). Employment and income related to recreational activities, many of which are dependent on access to public lands, will at minimum continue to support this community's quality of life. While localized changes in access could occur, recreation opportunities will be maintained and enhanced thus accommodating existing recreation uses and expected increases in recreation uses (Table 4.22-1).

Effects of increased visitation on the quality of the recreation experience will depend on the type and location of the recreation activity taking place as well as the behavior of the individual recreating. No information is currently available on the effects of increased visitation on quality of recreational experience or access to public land. Regardless changes in the quantity and quality of recreation experiences are discussed in the recreation section of this EIS.

Across all alternatives, it is important to recognize that the difference in special management area designations (such as SRMAs and areas open, closed or limited to motorized uses) represents a change in management focus, and may not change the ability to access public land or the uses that occur on that land. Also, drawing conclusions about changes to access based on acreage or route designations may not be appropriate since substantive consideration depends on an accurate proxy for actual portrayal of effects to quality of life. Regardless, as discussed above, it is anticipated that recreation opportunities will be maintained and enhanced with these designations thus accommodating existing recreation uses and expected increases in recreation uses (Table 4.22-1). Therefore, no decrease in quality of life is anticipated from changes in recreation access under all the action alternatives.

Oil and Gas Development

Under the action alternatives, oil and gas production and development is anticipated to continue within its historic range (Table 4.22-1) as discussed in Chapter 3. Oil and gas fields on BLM-managed mineral estate within the Bakersfield FO have been active for over a century and are well developed. While wells are projected to be drilled on federal mineral estate, most of this drilling would occur within existing developed oil fields and would be considered infill and disturbance of new areas would be minimal. Employment and income generated from oil and gas development activities contribute to the quality of life for those depending on the industry and connected industries. In addition, potential change in population that would result from changes in employment would be similar to levels and change experienced in the past. Effects associated with oil and gas population change on infrastructure, community demographics, and quality of life would

thus not change for communities in the planning area. Public perceptions about greenhouse gas emissions and global warming associated with development in the Bakersfield FO would continue since production and development levels are not anticipated to change from historic levels.

Air quality, traffic congestion, noise and other concerns expressed by communities commonly in the presence of oil and gas development, could experience increases in quality of life with travel management planning that limits access to oil fields and other developments under the action alternatives.

Environmental Justice

The action alternatives could result in increases in employment and labor income relative to current conditions over the next decade (see table xx), from which minority and low income populations may benefit. As noted above, access for recreation and other uses would be accommodated under all the alternatives. In addition, access for cultural uses, traditional materials and cultural sites will continue to provide valuable resources to communities in the area; sustaining lifestyles, traditions, ceremonies and the heritage that remain an important part of community lifestyle, rural character and quality of life.

Additionally, public involvement efforts for this project have been inclusive and the agency has considered input from persons or groups regardless of race, color, national origin, income, or other social and economic characteristics.

Under the Action Alternatives, the implementation of fees for access to specific SRMA's has the potential to affect minority and low income populations who have historically recreated in these areas. However, effects to these communities cannot be considered disparate since all users would be assessed fees regardless of racial, ethnic or poverty status. In addition, it is anticipated that substitute opportunities would continue to be made available on other public land in the areas.

4.22.3 IMPACT OF ALTERNATIVE B

4.22.3.1 Economic

As a result of Alternative B, about 3,383 total jobs (direct, indirect and induced jobs) and $199.5 million in labor income (direct, indirect and induced income) would be generated in the impact area economy on an average annual basis from recreation, livestock grazing, fluid minerals, solid minerals, BLM expenditures and externally funded projects on BLM. In addition, contributions resulting from payments to counties would accrue from PILT, grazing payments (grazing lease fees and possessory interest taxes) and minerals royalty payments. Payments to counties would vary under this alternative (from 518 to 803 total jobs and from $27.3 to $42.3 million in total labor income) based on energy market conditions, the resulting minerals production and royalties paid and are discussed below in the subsection on Impacts to Counties. Employment and labor income contributions are higher than the other alternatives, apart from Alternatives A and E, due to larger recreation visits evaluated under this alternative and additional externally funded projects discussed

below. The largest employment and labor income effects would occur in the Mining and Accommodation & Food Services sectors (IMPLAN 2009).

While employment and labor income contributions under this alternative would be larger than the other alternatives, apart from Alternative E, less acreage would be designated under protected area designations than alternatives C or D (*Comparison of Alternatives Table*; Chapter 2). Therefore this alternative would provide less protection of non-market values and natural amenities than alternatives C or D but more than the other alternatives.

Recreation

Three SRMAs would receive a greater level of management, including direct funds, additional staff, and a higher level of recreation development under Alternative B: Keyesville, San Joaquin River Gorge, and Temblor. Alternative B would provide fewer miles available for motorized uses than alternatives A and E however, more than alternatives C and D. Regardless, increases in routes designated as authorized in areas like Temblor SRMA would provide access to wild, open, unconfined space and motorized recreation on designated trails. Thus, in spite of the increase in OHV Closed areas relative to Alternative A, it is anticipated that this alternative would accommodate recreation at levels similar to the expected rates of increase discussed under Alternative A. Given this increase, average annual recreation visits are the same as experienced under Alternative A (Table 4.22-1) and expenditures of these visitors would support the same contributions as under Alternative A (Table 4.22-3 and Table 4.22-4).

Job and income associated with this alternative should not overshadow the value of experience provided by recreation on BLM under this alternative. With the Special Recreation Management Areas and route designation under this alternative, BLM management would likely be more commensurate with desired recreational experiences, regardless of the increase in OHV Closed areas. For example certain motorized user segments would benefit from opportunities specifically catered to their interests. Additionally, as conflicts between non-motorized and motorized users are resolved, desired recreation experiences are likely to improve. Consequently, the value of the recreation experience on BLM could actually stay the same or slightly increase relative to Alternative A.

Livestock Grazing

Alternative B would have a slightly higher level of potential permitted grazing than Alternative A and Alternative C and substantially more than Alternative D and could thus support more average annual AUM contributions (Table 4.22-1). On an average annual basis this permitted use would support 5 jobs and $133,000 in labor income within planning area counties (Table 4.22-3 and Table 4.22-4). While reductions in use on several allotments yields a decrease in potential permitted use relative to Alternative E, current billed activity (25,200 AUMs) could still be accommodated across the entire planning area and potentially increase under this alternative since the estimated potential grazing opportunity is 40,056 AUMs. This potential use may be less likely to occur considering

current levels of actual billed use of AUMs (25,200 AUMs; See chapter 3 discussion), nonetheless if demand for AUMs existed along with favorable forage and market conditions; the contribution from BLM grazing could increase relative to current billed use under this alternative. Regardless, decreases in use for individual operators are likely to occur with reductions in use on several allotments. Thus, while the removal of livestock grazing from BLM in the planning area would not appear to impact the overall supply of forage to producers in the entire planning area (the number of cattle BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007), smaller communities and individual operators within the planning area could experience adverse impacts. Impacts of changes to individual allotments are discussed in *Chapter 4, Livestock Grazing* section of this DEIS.

Small changes in the levels of employment and income associated with Alternative B should not overshadow potential increases in other values as a result of grazing actions under this alternative. Reducing use on several allotments under this alternative could reduce conflict and increase value to other resources. For example, the creation of ACECs would provide for other community benefits despite the loss of livestock grazing opportunity. Thus despite the potential for a small decrease in employment, labor income, and the value of forage, other benefits would accrue to resources on BLM.

Solid Minerals (Locatable, Saleable and Solid Leaseable)

Salable mineral material from the community pit (Kelso) and Gypsum (solid leasable) would continue to be made available (Holloway Gypsum) under this alternative; however, acreage with mineral potential would be restricted or closed: 2 percent, 41 percent and 10 percent of acreage with locatable, saleable and solid leasable mineral potential would be restricted or closed, respectively. While future development under this alternative is possible, the driving force behind development on available acreage is price and demand, such as nearby construction needs for salable minerals. If market conditions are favorable it is anticipated that up to 18 locatable projects, 183 saleable projects and 2 solid leasable projects would potentially be developed on BLM. If this projected development occurred, 34 jobs and $2.2 million in labor income would be supported under this alternative (Table 4.22-3 and Table 4.22-4).

Impacts to Counties

Under Alternative B annual payments to counties in the planning area would be approximately the same as discussed under Alternative A. PILT payments are anticipated to continue at current levels as well as payments associated with minerals royalties (Table 4.22-2). In addition, current levels of billed grazing use could be supported across the entire planning area by the estimated potential grazing opportunity (discussed above) and thus support grazing fee payments and possessory interest taxes (Table 4.22-2). Consequently these payments would support the same levels of employment and income (from 518 to 803 jobs and $27.3 to $42.3 million in labor income; Table 4.22-3 and Table 4.22-4) and would remain a small but important portion of county revenue (less

than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

Role of Amenities, Migration and Non-market Values

Under this alternative more protected area designations would occur than Alternatives A and E but less than Alternative C and D. Therefore, this alternative would provide more protection of non-market values and natural amenities than currently and Alternative E, however less than alternatives C and D. Consequently well-being associated with non-market values and potential contributions from new residents and tourists attracted by natural amenities could be more than these alternatives but less than alternatives C and D.

4.22.3.2 Social

Recreation and Access

The acreage restricted to camping under Alternative B is more than alternatives C and D but less than alternatives A and E. However, the annual length of stay would be twice as long as under Alternative A. In spite of the increase in OHV Closed areas relative to Alternative A, it is anticipated that the increase in routes designated authorized would accommodate recreation at levels similar to the expected rates of increase discussed under Alternative A. Given this increase, average annual recreation visits are the same as experienced under Alternative A (Table 4.22-1). In addition, it is anticipated that the designation of routes and site specific travel management planning will continue to accommodate other commercial and non-commercial uses of public land. Consequently no change in quality of life is anticipated.

Preservation of Rural Characteristics and Lifestyle Associated with Grazing

Individuals and communities interested in the preservation of rural characteristics and lifestyle noted the importance of continued livestock grazing use. Effects on rural character and the cultural value of livestock grazing are dependent on continued availability of forage and landscapes used for grazing. Under this alternative the estimated potential grazing opportunity would be slightly less than available currently however would accommodate current levels of billed use depicted in the first column of Table 4.22-1. Resulting employment and income generated from livestock grazing activities would continue to contribute to the quality of life for those depending on the industry and connected industries. In addition, the cultural value and rural character associated with BLM forage would be maintained under this alternative.

Environmental Justice

The closure of individual active allotments under this alternative has the potential to disparately effect environmental justice populations if lessees are minorities or low income.

4.22.4 IMPACT OF ALTERNATIVE C

4.22.4.1 Economic

As a result of Alternative C, about 3,360 jobs and $198.3 million in labor income would be generated in the impact area economy on an average annual basis from recreation, livestock grazing, fluid minerals, solid minerals, BLM expenditures and externally funded projects on BLM. In addition, contributions resulting from payments to counties would accrue from PILT, grazing payments (grazing lease fees and possessory interest taxes) and minerals royalty payments. Payments to counties would vary under this alternative (from 518 to 803 total jobs and from $27.3 to $42.3 million in total labor income) based on energy market conditions, the resulting minerals production and royalties paid and are discussed below in the subsection on Impacts to Counties. These employment and labor income contributions are lower than under the other alternatives, apart from Alternative D, due to fewer recreation visits evaluated under this alternative and lower levels of anticipated solid minerals development. The largest employment and labor income effects would occur in the Mining and Accommodation & Food Services sectors (IMPLAN 2009).

While employment and labor income contributions under this alternative would be less than under the other alternatives, apart from Alternative D, more acreage would be designated under protected area designations than under the other alternatives (apart from Alternative D, where the same amount of protected areas would be designated; see the *Comparison of Alternatives Table* in Chapter 2). Therefore this alternative would provide more protection of non-market values and natural amenities than these alternatives. While the same amount of protected area designations would occur as under Alternative D, more employment and labor income would also be supported under this alternative than under Alternative D.

Recreation

Levels of recreation anticipated under Alternative C are less than the other alternatives (the same as Alternative D) due to restrictions on OHV access and decreases in areas open to the discharge of firearms, overnight camping and unrestricted equestrian uses. Expenditures of these visitors would support 269 jobs and $7.5 million in labor income on an average annual basis (Table 4.22-3 and Table 4.22-4).

While recreation visitation could decrease, opportunities on BLM may be more commensurate with desired recreational experiences. For example, conflicts between recreation users and oil and gas development would no longer occur with restrictions on access, thus desired recreation experiences are likely to improve. Consequently, the value of the recreation experience on BLM could actually stay the same or slightly increase relative to the other alternatives.

Livestock Grazing

Alternative C would have a slightly lower level of estimated potential grazing opportunity than alternatives B and E and could thus support fewer average annual AUM contributions (Table 4.22-1). On an average annual basis this permitted use would support 5 jobs and $126,000 in labor

income within planning area counties (Table 4.22-3 and Table 4.22-4). While reductions in use on several allotments yields a decrease in potential permitted use, current billed activity (25,200 AUMs) could still be accommodated across the entire planning area and potentially increase under this alternative since estimated potential grazing opportunity is 37,775 AUMs. This level of use may be less likely to occur considering current actual billed use of AUMs (25,200 AUMs; See chapter 3 discussion), nonetheless if demand for AUMs existed along with favorable forage and market conditions, the contribution from BLM livestock grazing could increase relative to current billed use under this alternative despite the reductions in use on several allotments. Regardless, decreases in use for individual operators are likely to occur with reductions in use on several allotments. Thus, while the removal of this level of livestock grazing from BLM in the planning area would not appear to impact the overall supply of forage to producers in the entire planning area (the number of cattle BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007), smaller communities and individual operators within the planning area could experience adverse impacts. Changes to individual allotments are discussed in the *Livestock Grazing* section in Chapter 4 of this DEIS. Small changes in the levels of employment and income associated with Alternative C should not overshadow potential increases in other values as a result of livestock grazing actions under this alternative. Reducing use on several allotments under this alternative could reduce conflict and increase value to other resources. For example, the creation of ACECs would provide for other community benefits despite the loss of livestock grazing. Thus despite the potential for a small decrease in employment, labor income, and the value of forage, other benefits would accrue to other resources on BLM.

Solid Minerals (Locatable, Saleable and Solid Leaseable)

Salable mineral material from the community pit (Kelso) and Gypsum (solid leasable) would continue to be made available (Holloway Gypsum) under this alternative however, acreage with mineral potential would be restricted or closed: 14 percent, 41 percent and 13 percent of acreage with locatable, saleable and solid leasable mineral potential would be restricted or closed. While future development under this alternative is possible, the driving force behind development on available acreage is price and demand, such as nearby construction needs for salable minerals. If market conditions are favorable it is anticipated that up to 7 locatable projects, 128 saleable projects and 2 solid leasable projects would potentially be developed on BLM. If this projected development occurred, 20 jobs and $1.2 million in labor income would be supported under this alternative (Table 4.22-3 and Table 4.22-4).

Impacts to Counties

Under Alternative C annual payments to counties in the planning area would be the same as discussed under Alternative B.

Role of Amenities, Migration and Non-market Values

Under this alternative more protected area designations would occur than Alternatives A, B and E and the same as Alternative D. Therefore, this alternative would provide more protection of non-market values and natural amenities than currently and alternatives B and E. Consequently well-being associated with non-market values and potential contributions from new residents and tourists attracted by natural amenities could be more than these alternatives and the same as Alternative D.

4.22.4.2 Social

Recreation and Access

Levels of recreation anticipated under Alternative C are less than the other alternatives (the same as Alternative D) due to restrictions on OHV access and decreases in areas open to the discharge of firearms, overnight camping and unrestricted equestrian uses. Alternative C would restrict the greatest amount of acreage from camping and would provide the shortest annual length of stay, which would be half as great as under Alternative A. While recreation visitation could decrease, opportunities on BLM may be more commensurate with desired recreational experiences. For example, conflicts between recreation users and oil and gas development would no longer occur with restrictions on access, thus desired recreation experiences are likely to improve. In addition, it is anticipated that the designation of routes and site specific travel management planning will continue to accommodate other commercial and non-commercial uses of public land. Consequently no change in quality of life is anticipated for the majority of BLM users. Some users could be displaced however substitute opportunities are supplied in the planning area. In addition the potential for improvements in quality of life could result for some visitors with reduced incidence of conflict.

Preservation of Rural Characteristics and Lifestyle Associated with Grazing

Effects to quality of life and area communities from grazing management are the same as those discussed above under Impact of Alternative B.

Environmental Justice

The closure of individual active allotments under this alternative has the potential to disparately effect environmental justice populations if lessees are minorities or low income.

4.22.5 IMPACT OF ALTERNATIVE D

As a result of Alternative D, about 3,355 jobs and $198.171 million in labor income would be generated in the impact area economy on an average annual basis from recreation, livestock grazing, fluid minerals, solid minerals, BLM expenditures and externally funded projects on BLM. In addition, contributions resulting from payments to counties would accrue from PILT, grazing payments (grazing lease fees and possessory interest taxes) and minerals royalty payments. Payments to counties would vary under this alternative (from 517 to 803 total jobs and from $27.2 to $42.3 million in total labor income) based on energy market conditions, the resulting minerals production and royalties paid and are discussed below in the subsection on Impacts to Counties. These

employment and labor income contributions are lower than under the other alternatives due to slightly smaller lower bound of potential payments to counties, fewer recreation visits and lower levels of estimated potential grazing opportunity. The largest employment and labor income effects would continue to occur in the Mining and Accommodation & Food Services sectors (IMPLAN 2009).

While employment and labor income contributions under this alternative would be less than under the other alternatives, more acreage would be designated under protected area designations than the other alternatives, apart from Alternative C, where the same amount of protected areas would be designated (*Comparison of Alternatives Table*; Chapter 2). Therefore this alternative would provide more protection of non-market values and natural amenities than the other alternatives, apart from Alternative C. While the same amount of protected area designations would occur as under Alternative C, less employment and labor income would also be supported under this alternative than under Alternative C.

4.22.5.1 Economic

Recreation

Effects to local economic conditions are expected to be the same as discussed above under Impact of Alternative C. Direct, indirect and induced effects from these contributions are displayed in Table 4.22-2 and Table 4.22-3.

Livestock Grazing

While a small amount of estimated potential grazing opportunity is depicted in Table 4.22-1 (livestock grazing managed by adjacent field offices not covered in this plan), no acres would be allocated to livestock grazing under this alternative (*Comparison of Alternatives Table*; Chapter 2). While planning area counties combined exhibit a low level of dependency on Bakersfield FO forage (the number of cattle BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007), BLM provides a low cost and important complement to some livestock producers' other sources of forage. It is likely that individual counties and livestock producers within the planning area depend on BLM for a larger portion of their forage. Thus, while the removal of livestock grazing from BLM in the planning area would not appear to impact the overall supply of forage to producers in the entire planning area, smaller communities and individual operators within the planning area could experience adverse impacts. Changes to individual allotments are discussed in the *Livestock Grazing* section of this Chapter.

In addition to the loss of employment and income associated with the loss of Bakersfield FO forage, the loss of value to area lessees and permittees should also be considered. As noted in Chapter 3 grazing on BLM often occurs on parcels intermingled with other ownerships. Grazing operations on lands adjacent to BLM would incur additional costs under this alternative to avoid livestock trespass on BLM. Costs would vary with method of control (herding, fencing) and terrain but can

be considered substantial. It is estimated that more than 1,000 miles of new fencing may be necessary to prevent livestock from entering the 402,800 acres of land allocated as Unavailable for livestock grazing (see the *Livestock Grazing* section of this chapter). In addition, the removal of grazing from BLM could further affect adjacent grazing operations if livestock movement to preferential grazing areas is interrupted (e.g., livestock watering sources, loafing and bedding areas). This would further increase costs to adjacent grazing operations and ultimately make some portions of private property unusable for grazing (see the *Livestock Grazing* section of this chapter).

As noted above and in Chapter 3, private property values can be considered to be connected to BLM grazing permits. Thus, in addition to the loss of a low cost and important source of forage, lessee or permittee property values could also decrease. Value associated with these permits would be lost under this alternative. Furthermore, the BLM might experience loss of resource value with the absence of livestock grazing if allotments are no longer maintained by lessees and permittees. For example, improvements in resource value from livestock grazing, such as creating suitable animal habitat, fuel reduction and road or water development maintenance, would no longer occur. Under this alternative, payments to counties associated with grazing fees and possessory interest taxes would no longer accrue to counties; these effects are discussed below under the subsection on Impacts to Counties.

Fluid Minerals

Under Alternative D the effects to communities from mineral resource management would be the same as discussed under Alternative C.

Solid Minerals (Locatable, Saleable and Solid Leaseable)

Under Alternative D the effects to communities from mineral resource management would be the same as discussed under Alternative C.

Impacts to Counties

Under Alternative D annual payments to counties in the planning area would range from approximately $44.5 to $69.1 million (Table 4.22-2) which includes a portion of PILT payments (from 5 to 3 percent) that can be attributed to BLM entitlement acreage and a portion of royalties received from the sale of mineral material (from 95 to 97 percent). Without forage for livestock grazing provided under this alternative, no grazing fee distributions or possessory interest tax payments would be made to local counties. In addition, private property values could be reduced which would reduce property taxes paid. Without grazing related payments these payments would support from 517 to 803 jobs and $27.2 to $42.3 million in labor income (Table 4.22-3 and Table 4.22-4). As discussed above this estimate is based on a range of potential prices and production. Actual production and market price cannot be projected; thus, these estimates may not be an accurate portrayal of actual impacts. Regardless, contributions from these payments are likely to remain a small but important portion of county revenue (less than one percent of total revenue in planning area counties and 3 percent or less of Kern County government revenue).

Role of Amenities, Migration and Non-market Values

Under this alternative the same acreage of protected area designations would occur as Alternative C (Table 4.22-4). Consequently well-being associated with non-market values and natural amenities would be the same as presented above for Alternative C.

4.22.5.2 Social

Recreation and Access

Effects to local communities and quality of life from recreation management under this alternative are expected to be the same as discussed above under Impact of Alternative C. In addition, it is anticipated that the designation of routes and site specific travel management planning will have similar effects on commercial and non-commercial uses as Alternative C.

Preservation of Rural Characteristics and Lifestyle Associated with Grazing

Individuals and communities interested in the preservation of rural characteristics and lifestyle noted the importance of continued livestock grazing use. No acres would be allocated to livestock grazing under this alternative (*Comparison of Alternatives Table*; Chapter 2). While planning area counties exhibit a low level of dependency on Bakersfield FO forage (the number of cattle BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007) the rural character and cultural value of livestock grazing associated with BLM forage would be lost. In addition, employment and income generated from Bakersfield FO livestock grazing activities would no longer contribute to the quality of life for those depending on the industry and connected industries.

Environmental Justice

The closure of active grazing allotments under this alternative has the potential to disparately effect environmental justice populations if a majority of lessees or permittees experiencing a closure are minorities or low income.

4.22.6 IMPACT OF ALTERNATIVE E

4.22.6.1 Economic

As a result of Alternative E, about 3,359 jobs and $199.9 million in labor income would be generated in the impact area economy on an average annual basis from recreation, livestock grazing, fluid minerals, solid minerals, BLM expenditures and externally funded projects on BLM. In addition, contributions resulting from payments to counties would accrue from PILT, grazing payments (grazing lease fees and possessory interest taxes) and minerals royalty payments. Payments to counties would vary under this alternative (from 518 to 803 total jobs and from $27.3 to $42.3 million in total labor income) based on energy market conditions, the resulting minerals production and royalties paid and are discussed below in the subsection on Impacts to Counties. These employment and labor income contributions are slightly higher than current contributions evaluated

in Chapter 3 due to larger recreation visits and larger estimated potential grazing opportunity than the other alternatives. This includes direct, indirect and induced effects as a result of BLM outputs (Table 4.22-1). The largest employment and labor income effects would continue to occur in the Mining and Accommodation & Food Services sectors (IMPLAN 2009).

While employment and labor income contributions under this alternative would be higher than the other alternatives, less acreage would be designated under protected areas (ACECs, land to be managed for wilderness character, WSR suitable segments and VRM Class I and II acres) than the other alternatives, apart from Alternative A (*Comparison of Alternatives Table*; Chapter 2). Therefore this alternative would provide less protection of non-market values and natural amenities than the other alternatives, but more than Alternative A.

Recreation

Four SRMAs would receive a greater level of management, including direct funds, additional staff, and a higher level of recreation development under Alternative E. In addition, Alternative E would provide more miles available for motorized uses than the other alternatives, open access to Temblor ERMA and the only OHV open area. Thus levels of recreation anticipated under Alternative E are more than the other alternatives due to anticipated increases in use with these changes in recreation management. It is anticipated that this management would support 287 jobs and $8 million in labor income on an average annual basis (Table 4.22-3 and Table 4.22-4). While employment and labor income contributions from recreation under this alternative would be higher than the other alternatives, incidence of conflict could remain. Thus the value of recreation experiences under this alternative could be less under this alternative than the other alternatives.

Livestock Grazing

Alternative E would have a higher level of estimated potential livestock grazing opportunity than the other alternatives (Table 4.22-1). On an average annual basis this potential livestock grazing opportunity could support the same level of employment and income as under Alternative A (Table 4.22-3 and Table 4.22-4). While reductions in use on individual allotments would occur, current billed activity (25,200 AUMs) could still be accommodated across the entire planning area and potentially increase under this alternative since the estimated potential grazing opportunity is 42,288 AUMs. This potential use may be less likely to occur considering current levels of actual billed use of AUMs (25,200 AUMs; See chapter 3 discussion), nonetheless if demand for AUMs existed along with favorable forage and market conditions, the contribution from BLM livestock grazing could increase relative to current billed use under this alternative. Regardless, decreases in use for individual operators are likely to occur with reductions in use on several allotments. Thus, while the removal of some livestock grazing from BLM in the planning area would not appear to impact the overall supply of forage to producers in the entire planning area (the number of cattle BLM forage could support under this alternative would constitute less than 1 percent of 2007 inventory in planning area counties; USDA 2007), smaller communities and individual operators within the

planning area could experience adverse impacts. Changes to individual allotments are discussed in the *Livestock Grazing* section of this chapter.

Small changes in the levels of employment and income associated with Alternative E should not overshadow potential increases in other values as a result of livestock grazing actions under this alternative. Reducing use on several allotments under this alternative could reduce conflict and increase value to other resources. For example, decrease in livestock grazing occurs to protect resource values and would provide suitable habitat for sensitive species. Thus despite the potential for a relatively small decrease in employment, labor income, and the value of forage, other benefits would accrue to resources on BLM.

Solid Minerals (Locatable, Saleable and Solid Leaseable)

Salable mineral material from the community pit (Kelso) and Gypsum (solid leasable) would continue to be made available (Holloway Gypsum) under this alternative; however, acreage with mineral potential would be restricted or closed: less than one percent, 34 percent and 8 percent of acreage with locatable, saleable and solid leasable mineral potential would be restricted or closed, respectively. While future development under this alternative is possible, the driving force behind development on available acreage is price and demand, such as nearby construction needs for salable minerals. If market conditions are favorable it is anticipated that up to 18 locatable projects, 204 saleable projects and 2 solid leasable projects would potentially be developed on BLM. If this projected development occurred, 36 jobs and $2.4 million in labor income would be supported under this alternative (Table 4.22-3 and Table 4.22-4).

Impacts to Counties

Under Alternative E annual payments to counties in the planning area would be the same as discussed under Alternative B.

Role of Amenities, Migration and Non-market Values

Under this alternative less protected area designations would occur than the other Action Alternatives; however, more than exist currently under Alternative A. Therefore, this alternative would provide more protection of non-market values and natural amenities than currently but less than the other Action Alternatives. Consequently well-being associated with non-market values and potential contributions from new residents and tourists attracted by natural amenities could be more than exist currently but less than the Action Alternatives.

4.22.6.2 Social

Recreation and Access

Levels of recreation anticipated under Alternative E are more than the other alternatives due to anticipated increases in use with open public access to the Temblor ERMA and the open OHV designation. Alternative E would have less area restricted to overnight camping than Alternatives C

and D but more than Alternative A. In addition, it is anticipated that the designation of routes and site specific travel management planning will continue to accommodate other commercial and non-commercial uses of public land. Consequently no change in quality of life is anticipated for the majority of BLM users. However, incidence of conflict could remain for some users as a result of unrestricted access and uses in some areas.

Preservation of Rural Characteristics and Lifestyle Associated with Grazing

Effects to quality of life and area communities from grazing management are the same as those discussed above under Impact of Alternative B.

4.23 PUBLIC SAFETY AND HEALTH

The BLM has a mandate to address known health and safety hazards occurring on public lands, including the presence of hazardous materials, abandoned mine lands, unexploded ordnance and naturally occurring hazards. In addition, the BLM is responsible for maintaining facilities and infrastructure; reducing health and safety risks to employees and the public; and protecting public lands from illegal dumping of wastes, theft, destruction of public property, and misuse of resources.

Generally public health and safety issues are addressed by policy and regulation. As such federal, state and local administrative codes, regulations, civil and criminal statutes will be recognized and enforced on public land. Where hazards are known and exposure of the public to these risks can be minimized or prevented, land use planning decisions can proactively aid in the protection of public health and safety.

METHODS OF ANALYSIS

The analysis focuses on publically accessible and intensively used lands within the Decision Area that hold elevated risks above that normally expected with visitation to public lands. These lands are generally easily accessible from the existing route network including state and county roads.

Direct impacts to public health and safety are considered to be those that reduce or eliminate risk. Indirect impacts are considered to be those that limit exposure to risk. Therefore the presence of, or accessibility to, hazards resulting from management action is used as an indicator of impacts to public health and safety.

The inherent dangers associated with visiting public lands such as trips and falls while hiking, use of OHV equipment, travel on primitive and unmaintained routes, presence of wildlife and poisonous plants, and heat and cold exposure are not addressed within this analysis.

Proposed management of the following resources, resource uses, or programs is anticipated to have an effect on Public Health and Safety: Cave and Karst, Comprehensive Trail and Travel Management, and Minerals Management. Those resources not listed are deemed to have negligible effects and, therefore, are not analyzed further.

ASSUMPTIONS

The public health and safety impact analysis is based on the following assumptions:

- Risks associated with general air quality in the San Joaquin Valley are inherent to living or recreating in this region and therefore considered outside the scope of this analysis.
- In consideration of fugitive dust regulations decisions and management actions that reduce soil disturbance or implement dust management would be expected to reduce the risk of exposure to naturally occurring soil hazards (e.g., naturally occurring asbestos and Coccidioides immitis) where present.
- Public health and safety associated with abandoned mine lands are adequately addressed through national policy and guidance implementation of which would continue in partnership with the California State Abandoned Mine Program.
- Increased public land use would result in increased exposure to a variety of hazards including: energy and mineral development, abandoned mines, hazardous materials, illegal dump sites and illegal drug production.
- Hazardous materials would be addressed through a variety of regulations such as, but not limited, to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) and the Resource Conservation and Recovery Act (RCRA) administered by various federal and state agencies.
- BLM's oil and gas inspection and enforcement program aids in reducing the risks associated with negligent release hazardous chemicals into the environment.
- BLM's law enforcement program aids in reducing the risks associated with clandestine drug labs, marijuana gardens, and illegal dumping on public lands.

4.23.1 IMPACT OF ALTERNATIVE A (NO ACTION)

Caves would generally remain accessible to cavers of all levels of skill and ability and cave location information would be freely available, with the exception of Granite Cave. Exposure to risk presented by caves to inexperienced or inadequately trained or equipped members of the public desiring to explore caves within the Decision Area would remain at current levels. The level of incident response to lost or injured cavers may increase if visitation increases over the long term.

Areas with intensively developed oil fields would remain open to public access continuing the exposure of the public to a hazardous industrial environment including the dangers associated with hydrogen sulfide gas and petroleum production.

Increased public access by designating routes as Motorized would increase the probability for exposure to hazards where they occur in close proximity to the route. Approximately six miles of routes occur on serpentine soils. While use of routes on serpentine soils could result in the release of asbestos fibers and create a public health and safety concern, based on the extremely low mileage of routes over these soils, impacts would be limited and localized.

4.23.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

There are no impacts considered common to all action alternatives to public health and safety beyond the assumptions made with regard to naturally occurring hazards, hazardous materials, and abandoned mine lands.

4.23.3 IMPACT OF ALTERNATIVE B

Overall, determination of significance and limitation on access to caves would reduce both the exposure to and risk presented by caves to inexperienced or inadequately trained or equipped members of the public desiring to explore caves within the Decision Area. Millerton Cave, which is considered to receive the highest visitation, would remain open to all public use therefore continuing the exposure to risk this cave presents from exploration by inexperienced cavers. The level of incident response to lost or injured cavers in Millerton Cave would be expected to continue at current levels.

Closure of approximately 10,000 acres of intensively developed oil fields to public access would reduce the exposure of the public to a hazardous industrial environment including the dangers associated with hydrogen sulfide gas and petroleum production. In addition restrictions to routes such as designation as authorized use only or closed also potentially reduce the risk of exposure to hazards where these routes are within close proximity and provide opportunity endanger oneself.

Approximately five miles of routes that occur on serpentine soils would be designated as Motorized. While use of routes on serpentine soils could result in the release of asbestos fibers and create a public health and safety concern, based on the extremely low mileage of routes over these soils, impacts would be limited and localized.

4.23.4 IMPACT OF ALTERNATIVE C

Overall, determination of significance and limitation on access to all caves would reduce both the exposure to and risk presented by caves to inexperienced or inadequately trained or equipped publics desiring to explore caves within the Decision Area. The level of incident response to lost or injured cavers would be expected to decrease.

Closure of approximately 10,000 acres of intensively developed oil fields to public access would reduce the exposure of the public to a hazardous industrial environment including the dangers associated with hydrogen sulfide gas and petroleum production. In addition restrictions to routes such as designation as authorized use only or closed also potentially reduce the risk of exposure to hazards where these routes are within close proximity and provide opportunity endanger oneself.

Approximately five miles of routes that occur on serpentine soils would be designated as Motorized. While use of routes on serpentine soils could result in the release of asbestos fibers and create a public health and safety concern, based on the extremely low mileage of routes over these soils, impacts would be limited and localized.

4.23.5 IMPACT OF ALTERNATIVE D

Overall, determination of significance and limitation on access to all caves would reduce both the exposure to and risk presented by caves to inexperienced or inadequately trained or equipped publics desiring to explore caves within the Decision Area. The level of incident response to lost or injured cavers would be expected to decrease.

Closure of approximately 10,000 acres of intensively developed oil fields to public access would reduce the exposure of the public to a hazardous industrial environment including the dangers associated with hydrogen sulfide gas and petroleum production. In addition restrictions to routes such as designation as authorized use only or closed also potentially reduce the risk of exposure to hazards where these routes are within close proximity and provide opportunity endanger oneself.

Approximately five miles of routes that occur on serpentine soils would be designated as Motorized. While use of routes on serpentine soils could result in the release of asbestos fibers and create a public health and safety concern, based on the extremely low mileage of routes over these soils, impacts would be limited and localized.

4.23.6 IMPACT OF ALTERNATIVE E

Overall, determination of significance and limitation on access to caves would reduce both the exposure to and risk presented by caves to inexperienced or inadequately trained or equipped publics desiring to explore caves within the Decision Area. Millerton Cave, which is considered to receive the highest visitation, would remain open to all public use therefore perpetuating the exposure to risk this cave presents from exploration by inexperienced cavers. The level of incident response to lost or injured cavers in Millerton Cave would be expected to continue at current levels.

Increased public access by designating routes as Motorized would increase the probability for exposure to hazards where they occur in close proximity to the route. Approximately six miles of routes occur on serpentine soils. While use of routes on serpentine soils could result in the release of asbestos fibers and create a public health and safety concern, based on the extremely low mileage of routes over these soils, impacts would be limited and localized.

Areas with intensively developed oil fields would remain open to public access continuing the exposure of the public to a hazardous industrial environment including the dangers associated with hydrogen sulfide gas and petroleum production.

CUMULATIVE IMPACTS

4.24 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) defines cumulative effects as:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).*

The CEQ suggests cumulative impact analyses should focus on meaningful impacts, and not exhaustively analyze all possible cumulative impacts (CEQ 1997b). Therefore, the analysis in this RMP and EIS focuses on past, present, and future actions anticipated to have environmental impacts similar to the incremental impacts identified for implementing the alternatives including those resulting in meaningful impacts to historically important resources, those with a potential for violating legal standards or laws, or other identified projects or actions in the geographic area of analysis (i.e., the Cumulative Impact Assessment Area [CIAA]) that relate to the identified issues.

In order to fully understand the cumulative impacts of actions associated with this RMP each alternative must be addressed in its entirety (management common to all action alternatives and the alternative itself), rather than by individual program elements. To aid in understanding, however, programs can be grouped by the issues addressed in this plan and described in *Chapter 1, Scoping and Planning Issues* (e.g., grouping biological, cultural, and paleontological resources addresses the cumulative impacts as they relate to Issue 3 – ensure protection of natural and cultural resources in a multiple-use environment).

METHODS OF ANALYSIS

To focus the scope of cumulative impact analysis, cumulative issues were considered in the context of baseline conditions (*Chapter 3 – Affected Environment*), the incremental impacts on individual resources described in this chapter, the actions and decisions described in the reasonable foreseeable future projects, and the following factors as modified from the CEQ's *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ 1997b):

- Does the affected resource have substantial value relative to legal protection and/or ecological, cultural, economic, or social importance?
- Are reasonable foreseeable future actions anticipated to have environmental impacts similar to the incremental impacts identified for RMP alternatives?
- Have any recent or ongoing NEPA analyses of similar actions in the geographic area identified important adverse or beneficial cumulative impact issues?
- Has the impact to the resource been historically important, such that the importance of the resource is defined by past loss, past gain, or investments to restore resources?

The cumulative impact analysis was further bound by considering the following factors:

- *Timeframe* – Timeframes are based on the duration of the direct and indirect effects of the proposed action and alternatives (the life of the RMP for most issues).
- *Geographic area* – The geographic area of analysis, or the CIAA, covers different geographic areas depending on the specific resource being evaluated. For the most part, the CIAA is the Planning Area except for (1) issues involving recreation, for which the CIAA includes the Planning Area and adjacent key recreation opportunities; (2) issues involving energy development and other land use authorizations considers the entire State of California; and (3) issues involving air quality, for which the CIAA will be the affected air basins: San Joaquin Valley, the South Central Coast, and the Mojave Desert Air Basins (eastern Kern portion).
- *Analytical assumptions* – see the Assumptions for Analysis below.

To address the reasonably foreseeable actions or projects the following have been considered:

- Travel management planning by other federal land management agencies (e.g., Sequoia National Forest Travel Management Plan, and the forth coming Piute Mountains Travel Management Project);
- Programmatic renewable energy EISs and the reasonably foreseeable actions anticipated by these documents (e.g., Programmatic Wind Energy EIS, Programmatic Geothermal Leasing EIS) occurring on public lands and other renewable energy development occurring within the CIAA;
- Leasing, exploration, and development of oil and gas resources both as described in the Reasonably Foreseeable Development Scenario (Appendix M) for federal mineral estate addressed in this RMP and that occurring on private mineral estate in the CIAA;
- Recovery Plans and/or Habitat Conservation Plans (California Fish and Game and USFWS)
- USACE Isabella Lake Dam Safety Modification Project
- BOR Temperance Flat Dam Proposal
- Implementation of BLM and USFS Land Use Plans for areas within the CIAA (e.g., CPNM RMP, Clear Creek Management Area RMP, and the USFS Giant Sequoia National Monument Management Plan)
- Continued issuance and renewal of land use authorizations including rights-of-way.
- Plans associated with management of recreation within the CIAA (e.g., San Joaquin River Gorge Business Plan, USFS Recreation Facility Analysis).

ASSUMPTIONS

The cumulative impact analysis is based on the following assumptions:

Generally, the context and intensity of non-BLM activities are not anticipated to vary by alternative because these activities do not directly depend on BLM management actions and allowable uses set

forth in the RMP alternatives. However, oil and gas and renewable energy development will somewhat depend upon BLM management.

The predictions in the reasonably foreseeable development scenarios remain unchanged across the alternatives, and the rates of development on non-BLM lands would continue at a similar rate to those currently occurring.

4.24.1 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 1

Adequately address the need for access to and continued availability of, public lands for multiple recreational uses and open spaces.

This issue exemplifies the need for appropriate management of recreation opportunities on public lands therefore addressing the cumulative effects on this issue serves to provide the context for the incremental direct and indirect impacts anticipated on Recreation and Visitor Services under each alternative. To adequately address this issue, those reasonably foreseeable actions (described above) occurring within the Planning Area and to adjacent key recreational opportunities (e.g., Jawbone Canyon OHV Area, Clear Creek Management Area) is used for analysis; therefore, these areas comprise the cumulative impact analysis area (CIAA).

Public lands in the Planning Area are fragmented with limited legal public access. Access to these lands has further been diminished through development of adjacent private property and increased awareness of and litigation fears by private property owners. In addition, trends on federal and state lands available for recreation has been to restrict activities to only those desired and/or compatible with land management objectives or require remuneration to continue support of recreational programs. Examples of these include increased fees for service at Forest Service facilities and National Parks, restrictions and prohibitions on specific recreation activities (e.g., loss of camping opportunities), and reductions in services due to budget constraints.

Of all federal lands, those administered by the BLM historically have provided opportunities with the least restrictions. However, increased concerns over public safety and environmental resources have led to the closure of some areas to recreational use (e.g., Clear Creek Management Area). In addition, increased demands for public lands uses that exclude, or are incompatible with, recreation uses (e.g., utility scale renewable energy) could further reduce public access and recreational opportunities.

Overall the effect is a decline in access to public lands by the general public and loss of some recreation opportunities. It is reasonably foreseeable that these restrictions of OHV activities, shooting sports, etc. will escalate with increased environmental awareness and incompatibility with increased visitation to popular areas.

Alternative A

Management would result in the least restrictions to specific recreational opportunities and the maintenance of existing access opportunities. Furthermore, the travel network would incorporate all

routes (1,895 miles) whether previously designated or newly created, although many of these routes are not legally accessible (i.e., occur within public lands surrounded by private property) and would therefore not increase access opportunity. Identification of a significant portion of public lands (216,000 acres of the lands in the Decision Area) as potentially available for disposal or repositioning to new managers (which may impose access and recreation restrictions), however, would ultimately result in a net loss of public land and the recreational opportunities provided on these lands. Furthermore, the diversity of recreation opportunities would remain limited in designated Wilderness areas. These BLM management decisions and actions, when put in context of the analysis area (a high level of restrictions on 1,030,400 acres of National Parks, a moderate level of restrictions on 4,080,000 acres of National Forests, and potential for closure of 100,000 acres of state lands due to budget issues and 31,000 acres in the Clear Creek Management Area), could contribute up to 6% of the cumulative reduction in public access and reduce recreation opportunities provided by federal and state lands in the CIAA.

Management Common to All Action Alternatives

Management would result in restrictions to both dispersed (e.g., OHV, equestrian, camping, and shooting sports) and resource-dependent recreation opportunities (e.g., caving, specialized vehicle recreation) and prohibition of public access to both sensitive (ACECs) and dangerous (industrialized) areas. Route designations would reduce the extent of the travel network in terms of both modes of transport and allowable users (i.e., authorized users only), therefore further limiting public access. Management would, however, provide for the retention and potential acquisition of lands for recreational purposes and access easements. Furthermore, delineation and identification of specific management for intensively visited and opportunity rich areas would ensure continued access and maintenance of some recreational opportunities over the life of the plan.

These BLM management decisions and actions would shift public lands from the historic perspective as places of unrestricted, limitless recreation opportunity to a more managed and controlled environment similar to the other opportunities provided within the analysis area (National Parks and Forests). This would cumulatively accelerate loss of the diversity and increase the division (i.e., not all opportunities available at the same location) of recreational opportunities across the analysis area.

The magnitude of these cumulative impacts from BLM management decisions and actions varies marginally between action alternatives although none would be considered to be significant.

Alternative B

Alternative B would continue public access through route designations albeit with reduced miles available for all forms of transport (by approximately 42% from Alternatives A and E). The level of limitations on specific recreation activities would be reduced by 9% from those imposed under Alternatives C and D; however, the majority of intensively visited areas would have management controls applied through SRMA or ERMA designation. It is anticipated Alternative B would

contribute up to 4% of the cumulative reduction in public access and recreation provided by federal and state lands in the CIAA.

Alternatives C and D

Alternatives C and D (with identical impacts) would be most restrictive on both access and opportunity through the closure of the largest area (23,000 acres) to public access and implementation of the most restrictive special and prescriptive management in ACECs and other areas of importance (236,100 acres). It is anticipated Alternatives C and D would contribute up to 4% (0.6% more than Alternative B) of the cumulative reduction in public access and recreation provided by federal and state lands in the CIAA.

Alternative E

Alternative E would be least restrictive to public access and specific recreation opportunities and provides the second largest publically available travel network (1,759 miles). It would, however, identify the largest area for specific recreation management (SRMAs and ERMAs) and would apply management controls to these areas. This alternative would also allow the largest area available for mineral and energy development that could, over the life of the plan, increase the areas of public closure, therefore reducing access and opportunities on an additional 18,000 acres as these areas become developed. It is anticipated Alternative E would contribute up to 3% (0.4% less than Alternative B) of the cumulative reduction in public access and recreation provided by federal and state lands in the CIAA.

4.24.2 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 2

Establish a balance between the extent of the travel network and the protection of natural and cultural resources including an appropriate allocation of routes to the various modes of transport.

This issue brings together the conflict between travel and the travel network with the protection of natural and cultural resources. Addressing the cumulative impacts on this issue serves to describe the contribution of direct and indirect impacts resulting from implementing alternatives within this plan on Comprehensive Trail and Travel Management and its relationship to Biological and Cultural Resources. In consideration of cumulative impacts on these resources, the cumulative impact analysis area (CIAA) includes reasonably foreseeable actions and projects within the Planning Area as this encompasses travel management related actions within adjacent National Forests and gives consideration to the interspersed nature of public lands with private property.

Routes are essentially linear surface disturbance that denudes areas of vegetation, interrupt wildlife movement linkages, accelerate natural soil processes, contrast with the natural visual landscape, and have the potential to damage or diminish cultural resource values. Therefore, the greater the extent of travel networks the greater the potential effect on these natural and cultural resources. In addition to surface disturbance, use of the travel network by specific modes of transport increases

the ease of access to sensitive resources, causes disruption to wildlife behaviors, and contributes to diminished air quality.

Routes often start, end, or cross other agency jurisdictions and/ or private property. The routes on public lands provide both non-recreational and recreational travel utility. The recreational utility includes routes for all modes of transport (motorized through pedestrian) that either connect people across or to opportunities within public land, or provide technical challenge and travel experiences themselves. Non-recreational utility is principally motorized and associated with developments, operations, and rights-of-way; as these are authorized uses of public lands, the BLM is compelled to allow appropriate access (i.e., routes). While there would be no direct or indirect adverse impact to the extent of the route network these routes would still contribute to impacts on natural and cultural resources.

Historically, travel management has transitioned from open (cross-country) opportunities to identifying specific routes of travel. As a result of this transition, and failure of people to abide by it, is the proliferation or unintentional creation of routes that persist on the landscape through repetitive use. In an effort to quell this problem, land management agencies currently designate routes with additional limitations such as seasons of use, mode of transport restrictions, types of user limitations; most of these restrictions affect wheeled and/or motorized vehicles. This is most notably the purview of the USFS and the BLM, including route designations complete for the Giant Sequoia and Carrizo Plain National Monuments (both reducing the extent of the motorized travel network). With a key and connected role any management decision or action affecting the travel network would cumulatively affect travel opportunities within the Planning Area (e.g., closing recreational routes on public lands may shift use to National Forests). Consequently, travel management plans that ultimately close, restrict, or otherwise reduce the extent of the travel network to the various modes of transport are concurrently and will continue to be implemented over the life of this plan.

Alternative A

Management would result in a doubling of the current travel management network with no restriction to the allowable modes of transport or users except for a few specific routes (i.e., the PCNST). Cumulatively, there would be no adverse from these BLM management actions to the travel management network across the CIAA; however, unrestrained access to all existing routes would conflict with concurrent travel management plans developed by the USFS. Furthermore, acceptance of a large number of unplanned routes into the route network without consideration of the juxtaposition of these routes to natural and cultural resources and their safety, quality, and purpose would result in an unsustainable travel network over the life of the plan and unacceptable adverse impacts to natural and cultural resources.

Alternatives B, C, and D

Management would result in a 15% reduction in the extent of the current BLM travel network giving consideration to other natural and cultural resources along with the purpose and utility of individual routes. The loss to the travel network of publically available motorized routes when considered with similar losses on adjacent National Forest System lands from implementation of their travel management plans would cumulatively represent a reduction in the extent of and opportunity provided by the travel network.

The consideration given to minimizing impacts on natural and cultural resources and ensuring routes are engineered and purposeful by these and similar decisions in like planning efforts, although decreasing the extent of the network, increases its utility and sustainability in the long term.

When considered with similar travel management plans within the CIAA, Alternatives B, C, and D would have the most cumulative impact on the travel network, but would result in diminished impacts to natural and cultural resources whilst overall achieving a sustainable route network. The minor magnitude shift between Alternative B and Alternatives C and D becomes negligible when considered cumulatively with other jurisdictional actions.

Alternative E

Management would result in a near doubling of the current travel management network with few restrictions to the allowable modes of transport or users. Cumulatively, there would be negligible adverse impacts from these BLM management actions to the travel management network across the CIAA; however, unrestrained access to most of the existing routes would conflict with concurrent travel management plans developed by the USFS. Furthermore, acceptance of a large number of unplanned routes into the route network without consideration of the juxtaposition of these routes to natural and cultural resources and their safety, quality, and purpose would result in an unsustainable travel network over the life of the plan and unacceptable adverse impacts to natural and cultural resources.

4.24.3 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 3

Ensure appropriate protection for Threatened and Endangered species, critical habitat, other biological resources, and cultural and paleontological resources in a multiple-use environment.

This issue encompasses many of the physical, cultural, and natural resources within the Planning Area. As such, addressing cumulative impacts as they relate to this issue discloses the incremental direct and indirect adverse impacts from the alternatives when considered with other reasonably foreseeable actions and projects on Biological (including Special Status Species), Cultural, and Paleontological Resources. The CIAA for these resources includes the entire Planning Area in order to give consideration to the interspersed nature of public lands and the complex geospatial diversity of these resources.

Biological, cultural, and paleontological resources are primarily subject to degradation from human activities including surface disturbance. Historically the CIAA has been subject to human disturbances that have resulted from urban, commercial, and industrial development, and recreational use. Surface disturbing activities have primarily resulted from the large scale conversion of native habitats to agriculture, the development of oil and gas fields, and urbanization including the increasing numbers of dispersed rural residences. These trends in disturbance are expected to continue accumulating a net loss of these resources.

Cumulatively these historic trends of adverse impact result from private, local, state, and federal actions within the CIAA. To counter these adverse impacts, however, agencies with a preservation or protection mandate plan for and implement actions to mitigate these trends (e.g., habitat conservation plans, species recovery plans, or programmatic agreements with the State Historic Preservation Officer). The actions provided for by the BLM through this RMP add to the protections of these key resources through the support, compliance with, and enhancement of these efforts. The contribution of BLM management, however, is negligible due to the area over which the RMP could take direct action being 2% of the Planning Area.

Alternative A

Although the direct and indirect adverse impacts resulting from this alternative would be confined to only 2% of the CIAA and would be anticipated to be minimal (approximately 18,000 acres of disturbance over the life of the plan) cumulatively, some localized areas with sensitive resources would be adversely affected to a greater extent when combined with reasonably foreseeable projects and actions over the life of the plan. Due to the nature of these resources, the extent and exact locations of these impacts are impossible to determine; however, the following examples (below) utilize the ACEC designations for biological and cultural relevance and importance values to typify these effects.

The BLM's contribution to cumulative impacts on special status species (e.g., California condor or Kelso Creek monkeyflower) would be greater as these relevant values would not receive protection as an ACEC in some areas and no controls would be prescribed to public visitation and recreation activities to prevent these disturbances to condors and monkeyflower habitat. This, when combined with projects and actions on adjacent lands with these habitats (e.g., oil and gas development within the Hopper Mountain area; property subdivision and development in monkeyflower habitat) would cumulatively reduce their productivity and viability for use by special status species. Similarly, the lack of prescriptive management restricting locatable mineral development and casual collection to protect cultural and paleontological resources in the Horse Canyon area in combination with potential and continued development on adjacent private lands would cumulatively diminish these values and exacerbate impacts to traditional cultural values of the area to contemporary Native Americans.

Much of the management in this alternative is designed to protect and preserve these resources (e.g., recommendation of ACECs, identification of areas of ecological importance with prescriptive

management) in concert with other land managers within the CIAA. All things considered, however, the BLM contribution is so small, the cumulative benefits resulting from these discretionary protection actions (e.g., designation of ACECs, application of fluid mineral leasing stipulations, implementation of the SOPs, implementation of conservation strategies, application of Central California Standards for Rangeland Health) would not be sufficient to prevent the significant loss (e.g., preclude species recovery or loss of eligible cultural resource) of these natural and cultural resources (including many special status species such as California condor and San Joaquin kit fox) over time, throughout the Planning Area.

Alternatives B, C, and D

These alternatives provide for the compliance with legal preservation and protection mandates; however, they also continue to allow human activities contributing to the overall trends resulting in loss of natural and cultural resources. This cumulative contribution is minimal (anticipated at or about 18,000 acres of surface disturbance over the life of the plan) and confined in its extent (2% of the CIAA) and negligible by comparison to impacts occurring across the Planning Area.

Much of the management in these alternatives is designed to protect and preserve these resources (e.g., recommendation of ACECs, identification of areas of ecological importance with prescriptive management) in concert with other land managers within the CIAA. All things considered, however, the BLM contribution is so small, the cumulative benefits resulting from these discretionary protection actions (e.g., designation of ACECs, application of fluid mineral leasing stipulations, implementation of the SOPs, implementation of conservation strategies, application of Central California Standards for Rangeland Health) would not be sufficient to prevent the significant loss (e.g., preclude species recovery or loss of eligible cultural resource) of these natural and cultural resources (including many special status species such as California condor and San Joaquin kit fox) over time, throughout the Planning Area.

Alternative E

This alternative provides for the compliance with legal preservation and protection mandates; however, it also continues to allow human activities contributing to the overall trends resulting in loss of natural and cultural resources. For example, the lack of prescriptive management restricting locatable mineral development and casual collection to protect cultural and paleontological resources in the Horse Canyon area in combination with potential and continued development on adjacent private lands would cumulatively diminish these values and exacerbate impacts to traditional cultural values of the area to contemporary Native Americans. This cumulative contribution is minimal (anticipated at or about 18,000 acres of surface disturbance over the life of the plan) and confined in its extent (2% of the CIAA) and negligible by comparison to impacts occurring across the Planning Area.

Much of the management in these alternatives is designed to protect and preserve these resources (e.g., recommendation of ACECs, identification of areas of ecological importance with prescriptive

management) in concert with other land managers within the CIAA. All things considered, however, the BLM contribution is so small, the cumulative benefits resulting from these discretionary protection actions (e.g., designation of ACECs, application of fluid mineral leasing stipulations, implementation of the SOPs, implementation of conservation strategies, application of Central California Standards for Rangeland Health) would not be sufficient to prevent the significant loss (e.g., preclude species recovery or loss of eligible cultural resource) of these natural and cultural resources (including many special status species such as California condor and San Joaquin kit fox) over time, throughout the Planning Area.

4.24.4 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 4

Continue to appropriately manage livestock grazing to provide for economic benefit, rural lifestyles and vegetation management while protecting other resources.

This issue focuses on the management of Livestock Grazing. Since livestock grazing occurs on private lands intermingled with public lands and across agency jurisdictions, the Planning Area provides the appropriate context and CIAA in which to analyze the contribution of the incremental direct and indirect adverse impacts in combination with the reasonably foreseeable projects and actions on Livestock Grazing.

Livestock grazing is a historic use of the majority of the CIAA which has resulted in an irretrievable change to the native plant communities and natural landscapes. As environmental awareness has increased and the economic viability of small scale livestock operations decreased the overall trend has been restriction and loss of this use. Nonetheless, these operations continue to be an important local economic activity in the region and are expected to continue to be into the foreseeable future.

Within the CIAA, livestock grazing occurs on both federally managed (USFS and BLM) and privately owned lands. Of the federally managed lands potentially available for livestock grazing in the CIAA, approximately 68% are managed by the USFS. The vast majority of public lands grazing allotments are utilized in conjunction with intermingled private lands which act as the base for the livestock operations. In many cases, the use of public lands is an integral part of these operations; that are made viable, less complicated, or enlarged through the opportunities provided on public lands.

Alternatives A, B, C, and E

Management would result in a general increase in public lands available for livestock grazing with no cumulative loss in livestock grazing opportunity. The individual livestock operations would be able continue to their operations with some expansion opportunities where newly acquired lands are allocated as Available for livestock grazing. This increase, however, while important on a local scale, would have little effect on the overall downward trend seen in the CIAA.

Alternative D

Although substantial to the individual livestock operations, the elimination of livestock grazing on the public lands in the Decision Area would directly result in only a 2% loss of grazing opportunity within the CIAA. Livestock grazing on the public lands within the Carrizo Plain National Monument would continue at the levels specified in that RMP. National Forests in the CIAA would also remain available for livestock grazing based on their land management plans. While the loss of public lands to livestock grazing would be minor, it would cumulatively continue the reduction in acreage available for grazing throughout the CIAA.

Of greater concern would be the far reaching implications to livestock operations from the potential fencing or other method necessary to prevent livestock from entering the public lands. This would have repercussions beyond public lands impacting the continued function of adjacent private lands as a grazing unit including the feasibility of continued ranching on their base property. The cumulative effect of the loss of these livestock operations to the CIAA is impossible to predict.

4.24.5 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 5

Balance the demand for energy development (including oil and gas, wind, and solar energy) and other land use authorizations (such as road and transmission corridor rights-of-way) with other resource values.

The demand for energy development expressed in this issue acts as an indicator for both fluid mineral and renewable energy resources and, therefore, provides a mechanism to analyze the incremental direct and indirect adverse effects of the alternatives when considered with other reasonably foreseeable projects and actions on Minerals Management and the Lands and Realty program. The varying potential for these sources of energy (i.e., high potential for oil and gas and low potential for renewable energy) on public lands within the Planning Area requires the analysis to look beyond the Planning Area boundary and give consideration to reasonably foreseeable projects and actions occurring at a larger scale. As such the CIAA of the State of California serves to frame the cumulative impacts.

Energy development within the Planning Area has generally been focused on oil and gas. Although steadily over the last decade concerns about the use of non-renewable resources and climate change have led to increased interest in renewable energy developments including wind and solar. Further strengthening this push toward renewable energy, technological advancements, economic incentives, and governmental initiatives have enabled a more serious consideration of these options.

While the rest of the State has seen increases in expressions of interest and on the ground development for renewable energy, the Planning Area as a whole (reported as having low potential for most renewable sources) has seen little activity. On the contrary, advancements in the oil and gas industry (e.g., horizontal wells) have led to higher than anticipated development of these energy sources.

The areas of highest mineral potential for oil and gas occur in the southern San Joaquin Valley, primarily in Kern County. This area has been explored and developed since the 1870's and is one of the oldest and most prolific oil/gas basins in the United States. The pattern of development in the

Decision Area is different from that of the rest of the country with the vast majority (98%) of wells being drilled on leases that were more than 30 years old, and in most cases, on leases that are nearly 100 years old. The trend of drilling an average of nearly 200 wells per year is reasonably foreseeable and expected to continue within the Decision Area.

The areas with the highest potential wind energy occur in the San Emigdio, Tehachapi, and Temblor mountain ranges. While utility scale wind farm developments are widespread in the Tehachapi Mountains, there are no developments on public lands in the other locations.

Alternative A

Management would result in negligible changes in the ability to explore and develop oil and gas reserves and develop renewable energy resources. There would be no cumulative effect on the oil and gas, and renewable energy industries from management decisions within this RMP.

Alternatives B, C, and D

Management would result in negligible changes in the ability to explore and develop oil and gas reserves. There would be no cumulative effect on the oil and gas industry from management decisions within this RMP.

Management would result in restrictions to the development of utility scale wind energy projects on up to 60% of public lands with high potential for wind energy within the Planning Area by giving consideration to other natural and cultural resources. In addition, these alternatives would increase the areas with ROW restrictions by over 50%. The combination of these two management allocations, however, would minimal contribution to the development of renewable energy throughout the State since areas of high potential remain on public lands in other areas.

Alternative E

Management would result in negligible changes in the ability to explore and develop oil and gas reserves and develop renewable energy resources. There would be no cumulative effect on the oil and gas, and renewable energy industries from management decisions within this RMP.

4.24.6 CUMULATIVE IMPACTS ON RESOURCES RELATED TO ISSUE 6

Address the impacts of Climate Change on the management of public lands including strategies that will reduce impacts and incorporate appropriate monitoring.

The cumulative impact analysis area for air resources occurs in EPA Region IX and consists of the San Joaquin Valley, the South Central Coast, and the Mojave Desert Air Basins (eastern Kern portion). This area also includes the San Joaquin Valley, CA – PM10 Maintenance area and the following areas designated nonattainment: the San Joaquin Valley, CA – Extreme 8-hour ozone area, the San Joaquin Valley, CA – PM2.5 area, the Eastern Kern County, CA – Serious 8-hour ozone area, and the Ventura County, CA – Serious 8-hour ozone area.

As opposed to other environmental impacts, emissions into the air are very short term. The air is constantly moving causing dilution and dispersal. For this reason, single small short term releases of pollutants have very little to do with overall regional pollution levels. Small scale projects that have minimal impacts that are of short-duration would not likely contribute significantly to cumulative impacts (EPA 315-R-99-002; May 1999). Regional pollution levels are the combined result of all pollutant sources in a region and those transported into the region; these pollutant concentrations represent the cumulative impact on air within the region. As indicated in emission inventories, existing emissions sources that contribute to cumulative air impacts include vehicle and equipment use, construction (residential, non-residential, and industrial), energy and mineral development, fuels management, road maintenance, recreation, pesticide use, and agriculture, including confined animal husbandry.

Based on the California ARB Almanac of Emissions and Air Quality (2009), air quality in the San Joaquin Valley and South Coast Air Basins shows dramatic improvement. Since 1990, ozone levels have decreased approximately 10% in the San Joaquin Valley and nearly 35% in the South Coast air basin, which includes the Ventura County ozone nonattainment area (CARB 2009). According to the SJVAPCD Annual Report to the Community (2010), the San Joaquin Valley experienced the best air quality on record continuing a 20 year trend. All nonattainment pollutant levels are nearly half or less of what they were four years ago. Expected emissions from the oil and gas RFD scenario are low in relation to the overall activity in the region and statewide. The expected emission levels are within attainment demonstration levels in the SIPs and are not likely to result in or contribute to exceedances of the National Ambient Air Quality Standards. Furthermore, existing and new stationary and mobile source emissions are permitted by the appropriate APCD and the California ARB, respectively.

There is no generally accepted guidance for determining significance of project specific GHG impacts (SJVAPCD, 2009a). Emissions from oil and gas development in the Planning Area would be expected to be lower than the national average because of vapor recovery systems and other pollution controls (Best Performance Standards) mandated by the local air pollution control districts. Values for GHG emissions are expected to follow a similar pattern. Thus, direct GHG emissions from the proposed alternatives would be undetectable on a nationwide basis and would be expected to have a very minor influence on global climate change. This is consistent with the SJVAPCD conclusion that existing science is inadequate to support quantification of impacts that project level GHG emissions would have on global climate change (SJVAPCD 2009b).

However, the effects of project specific GHG emissions are cumulative, and without mitigation their incremental contribution to global climatic change could be considered cumulatively considerable (SJVAPCD 2009a). The SJVAPCD's best approach in addressing cumulative impacts would be to require all projects to reduce their GHG emissions, through project design elements or mitigation. The District policy for addressing GHG emissions impacts for stationary source projects indicates that the need to quantify project specific impacts is negated if emissions reductions are achieved by implementing BPS.

4.25 IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA section 102(2)(C) and section 1502.16 of the CEQ NEPA implementing regulations require that the discussion of environmental consequences include a description of "…any irreversible or irretrievable commitment of resources which would be involved in the proposal should it be implemented."

An irreversible impact is an adverse effect for which there is no reasonable remedy or mitigation given biological, physical, socioeconomic constraints (e.g., extinction of a species or destruction of cultural resources). Similarly an irretrievable impact is a commitment of a resource that results in its loss and/or the loss of its use (e.g., the extraction of oil and gas from underground reservoirs results in the removal from the Decision Area, or the commitment of forage to areas allocated as Unavailable to livestock grazing results in the loss of its use to livestock operations). Irretrievable commitments are viewed as those in effects over the life of the plan.

Implementing any of the management plan alternatives would result in some impacts that could be characterized as irreversible or irretrievable commitments as follows:

Surface disturbing activities, including mineral, energy, rights-of-way, and route development, could result in an irreversible loss of vegetation resources, wildlife habitat, and livestock forage. This may irreversibly alter soils, concurrently increases in sediment, salinity, and nonpoint source pollution from these activities which also may result in an irretrievable degradation of water quality.

Cultural resources are by their nature irreplaceable, so altering or eliminating any such resource, be it National Register eligible or not, represents an irreversible impact.

Disposal of lands (predominately under Alternative A) would result in the irretrievable commitment of any resource present on those lands (e.g., loss of biological and cultural resource values that may be present).

The allocation of lands suitable for livestock grazing as Unavailable (predominantly under Alternative D) would represent the irretrievable commitment of forage production to other uses, and therefore, loss of livestock grazing opportunity on public lands.

The closure and withdrawal of areas from leasable, locatable, and salable mineral entry would cause an irretrievable loss of mineral extraction during the life of the plan. Conversely, the identification of lands available for all types of mineral extraction would signify the irretrievable commitment of mineral resources and their removal from the Decision Area. Furthermore, lands occupied by mineral extraction developments would permanently lose habitat values and, therefore, would have reduced carrying capacity for wildlife resources. In addition, these developments may pose substantial risk to public safety requiring their closure and subsequent irretrievable loss of public access and recreation opportunity.

Decisions to close areas to public access (predominately Alternatives C and D) would result irretrievable loss of public access and recreation opportunity in these areas over the life of the plan.

The exact nature and extent of any irreversible and irretrievable commitment of resources cannot be defined due to uncertainties about location, scale, timing, and rate of implementation, as well as the relationship to other actions and the effectiveness of mitigation measures throughout the life of the plan.

4.26 UNAVOIDABLE ADVERSE IMPACTS

NEPA section 102(C) also mandates disclosure of "any adverse environmental effects which cannot be avoided should the proposal be implemented." These are impacts for which there are no mitigation measures or impacts that remain even after the implementation of mitigation measures. Implementation of the RMP and subsequent activity- or project-specific plan implementation would result in unavoidable adverse impacts to some resources. Chapter 4 describes the potential impacts of implementing the RMP, summarized here. Many of these unavoidable impacts are also considered to be irreversible and/or irretrievable as discussed under the preceding section. These unavoidable, and potentially irreversible and irretrievable, adverse impacts include soil compaction and erosion, loss of vegetative cover, spread of invasive nonnative species, disturbance to and displacement of wildlife, visual intrusions on the landscape, and potential loss of cultural or paleontological resources from mineral extraction, energy development, vegetative treatments, OHV use, recreation use, and the extent of the travel network.

Conversely, proposed restrictions on some activities such as OHV use, energy development, and livestock grazing intended to protect sensitive resources and resource values would result in unavoidable adverse impacts to some users, operators, and permittees by limiting their ability to use public lands and potentially increasing their operating costs. These impacts, however, are not irreversible as new direction for these activities can be provided through new guidance or an updated RMP.

Truly unavoidable adverse impacts are considered to be those which no management guidance or level of implementation can avoid. These impacts may be reversible depending on the extent and severity. Examples of which are the continued dumping of household or industrial waste on public lands or the devastation caused by severe wildland fires. These unavoidable adverse impacts can be broadly defined by three categories: natural, unintentional, and illegal.

Stand-replacing wildland fires are largely unavoidable and may cause a loss of some key ecosystem components including the loss of soils following wildfires or from erosion during restoration treatments, which would be irretrievable. The effect of a high intensity wildfire or one covering many acres may only be reversible after several decades. Changes in wildlife habitat from wildfire, invasive plants, or restoration treatments may be are considered unavoidable adverse impacts resulting from a naturally occurring event.

Unintentional unavoidable impacts are those where lack of knowledge leads to an unforeseen impact to a resource. Undiscovered cultural and paleontological resources could be unintentionally affected by general use of public lands such as dispersed camping on an unmarked cultural site. These impacts could be avoided through the identification of such resources, however, identification may promote the third category of unavoidable impacts, illegal activity (e.g., looting).

Although illegal activities can be prosecuted and restitution received for some of the damages done, often the impacts far exceed any restitution paid assuming the perpetrator is caught. As such, the

illegal activities on public lands are considered unavoidable. These activities range from the "looting" or vandalism of sensitive cultural resources to the conversion of natural habitats to marijuana plantations and dumping of hazardous materials or household/industrial waste.