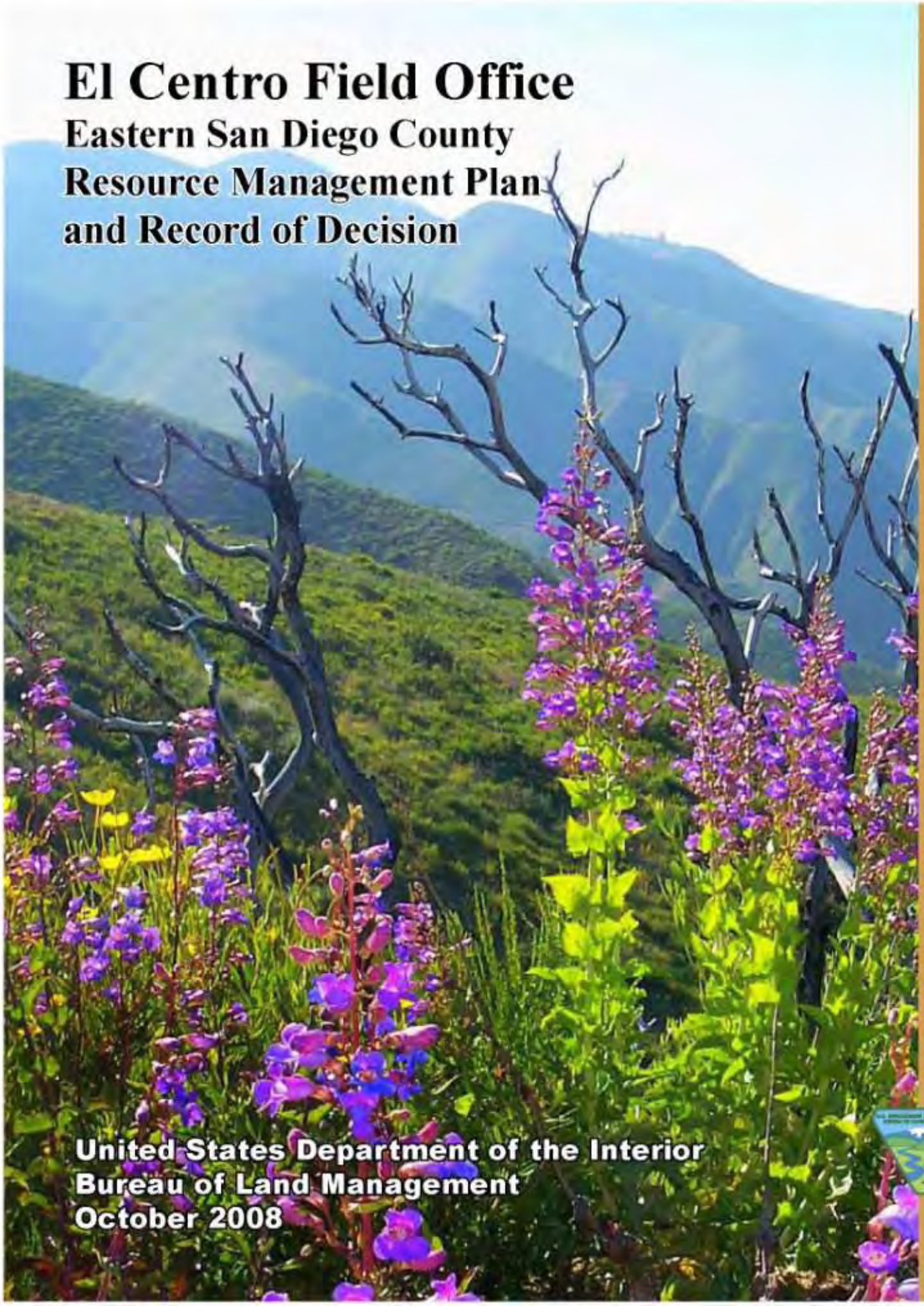
El Centro Field Office

Eastern San Diego County Resource Management Plan and Record of Decision



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Eastern San Diego County Resource Management Plan and Record of Decision

Prepared by
U.S. Department of the Interior
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El Centro Field Office
California

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Vicki L. Wood
Field Manager, El Centro

Steve J. Borchard
District Manager, California Desert

Mike Pool
State Director

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 S. 4th Street
El Centro, CA 92243
www.ca.blm.gov/elcentro

Dear Reader:

The Bureau of Land Management (BLM) is pleased to present the Eastern San Diego County Resource Management Plan (RMP) and Record of Decision (ROD). This RMP documents where and how BLM plans to administer the public lands under its jurisdiction within the Eastern San Diego County Planning Area.

This document is the result of a collaborative effort with state, local, and other federal government agencies, organizations and members of the public. Two scoping meetings were held in September 2004 to identify public concerns in the issue identification process. The Draft RMP and Draft Environmental Impact Statement (EIS) were published in February 2007 and followed by a 90-day public comment period. Changes based on public comments and agency review were incorporated into the Proposed RMP and Final EIS. The Proposed RMP and Final EIS were published in December 2007 and followed by a 30-day protest period. On July 28, 2008, BLM published a Notice to Provide Opportunity to Comment on Changes to the Eastern San Diego County Proposed Resource Management Plan; the comment period ended on August 27, 2008. This document incorporates changes based on agency review. This Eastern San Diego County RMP/ROD constitutes BLM's commitment to the public for managing the public lands. Any substantial changes to this approved RMP/ROD can only be made via a plan amendment process with public involvement in accordance with BLM regulation 43 CFR 1610.5-5.

The decisions designating routes of travel for motorized vehicles are implementation-level decisions and appealable in accordance with 43 CFR Part 4, as described in Section 1.8.2 of this document. These implementation-level decisions for routes of travel, as described in Section 30 of this document, are effective upon issuance of this RMP/ROD, unless a stay of the decision is granted.

We look forward to working with all interested agencies, organizations, and members of the public in implementing this challenging prescription for the future. If you would like more information, please contact the El Centro Field Office, 1661 S. 4th Street, El Centro, CA 92243, or telephone at (760) 337-4400.

Sincerely,

Vicki L. Wood
Field Manager

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1.0 Record of Decision

The Record of Decision (ROD) documents the Bureau of Land Management's (BLM) decision to adopt the Eastern San Diego County Resource Management Plan (RMP). This RMP is within the spectrum of alternatives analyzed in the Proposed RMP and Final Environmental Impact Statement (PRMP/FEIS) published in November 2007. In its entirety, the PRMP/FEIS provides all of the detailed background information and analysis in support of this RMP/ROD. An errata for the PRMP/FEIS has been developed and is included as Appendix A of this document.

RMP decisions (including management activities, mitigations, and project design features) for BLM-administered lands within the Planning Area are presented in Section 2.0 of this document. This RMP/ROD considers public comments, the best available scientific and technical information, and results of applicable consultations and coordination with federal and state agencies, local governments, Native American tribes, a variety of non-governmental organizations (NGOs), and numerous individuals. This RMP/ROD and its associated PRMP/FEIS, dated November 2007, were prepared in accordance with the Federal Land Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and BLM regulations (NEPA Handbook [H1790-1] and Land Use Planning Handbook [H-1601-1]).

The Eastern San Diego County Planning Area spans a portion of the eastern escarpment of southern California's Peninsular Ranges. Scattered in a north–south band along the mountain front are 102,869 acres of public land under the administration of the Bureau of Land Management. Most of the higher land to the west is a part of the Cleveland National Forest, while the low desert country to the east is included in the Anza–Borrego Desert State Park. Cuyamaca Rancho State Park and a number of small Indian reservations are interspersed with national forest lands. Riverside County and the Mexican border mark the northern and southern boundaries of the Planning Area, while Imperial County borders it to the east and western San Diego County to the west (Map 1).

1.1 Changes from the Proposed RMP to the Approved RMP

In response to protests raised on the Eastern San Diego County PRMP/FEIS and based on additional policy discussions, the BLM has clarified and made changes to the

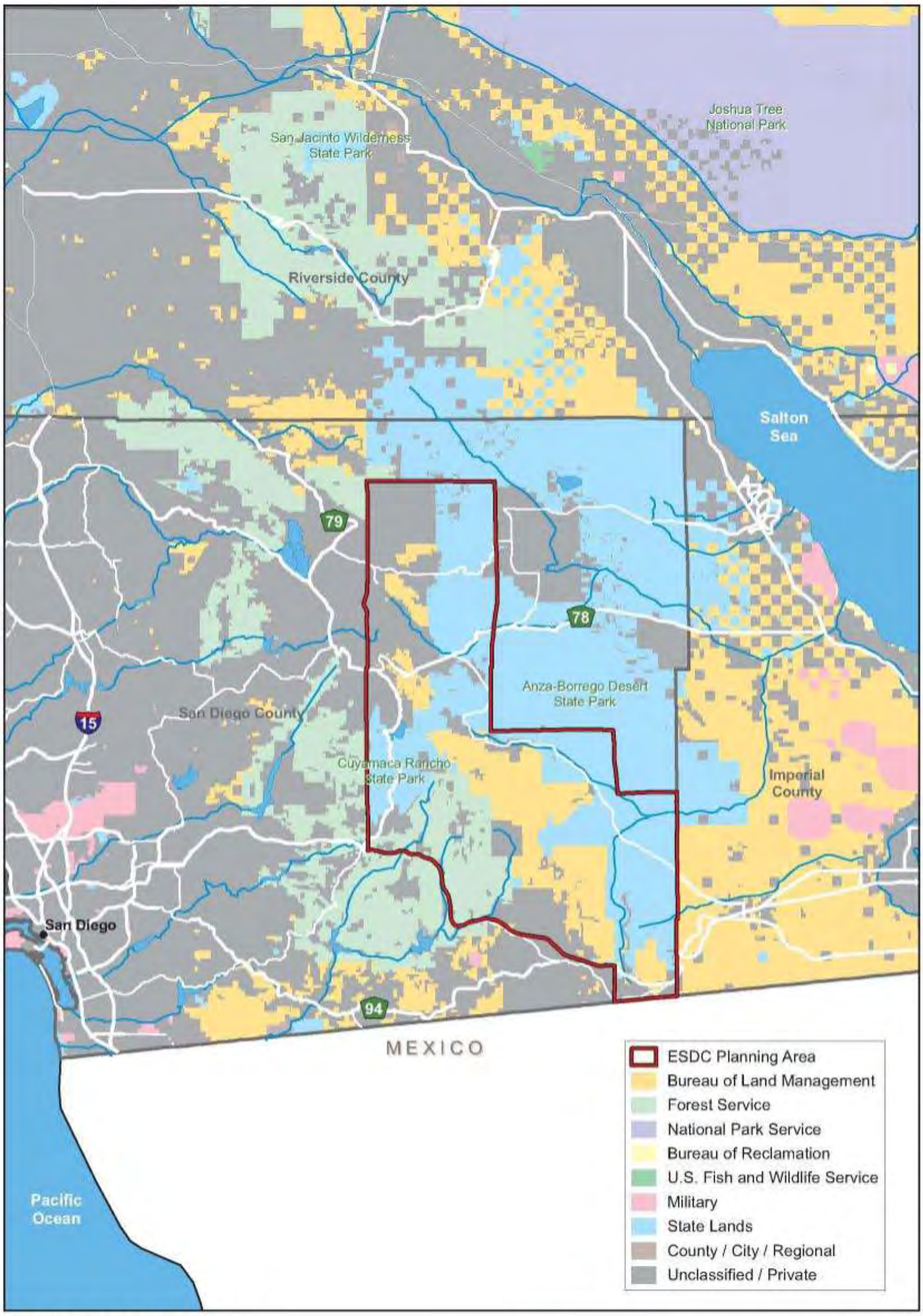
Proposed Plan as set forth in the PRMP/FEIS. The clarification and changes include: 1) modifying renewable energy (e.g., wind) and geothermal-related proposals and 2) clarifying and modifying Visual Resource Management (VRM) proposals and classifications.

Concerns were raised by the public that the PRMP/FEIS was overly restrictive regarding wind energy development and was not adequately responsive to national goals and directives regarding renewable energy development on public lands. The BLM changed the Proposed Plan, as it was set forth in the PRMP, to allow for additional lands in the Planning Area to be available for wind energy and geothermal development.

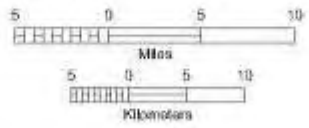
On May 18, 2001, the President issued Executive Order (EO) 13212, *Actions to Expedite Energy-Related Projects*, establishing a policy that federal agencies should take appropriate actions, to the extent consistent with applicable law, to expedite projects to increase the production, transmission, or conservation of energy. Also in 2001, the President's National Energy Policy Development Group (NEPDG) recommended to the President, as part of the *National Energy Policy Report*, that the Departments of the Interior, Energy, Agriculture, and Defense work together to increase renewable energy production (NEPDG 2001). The Energy Policy Act of 2005 states that "the Secretary of the Interior should, before the end of the 10-year period beginning on the date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity" (§211 Energy Policy Act (2005), Public Law 109-58).

Based on a broad-scale assessment of wind energy potential in the western United States, the Department of Energy determined that the Eastern San Diego County Planning Area has approximately 33,100 acres of land with high-quality wind resources. From that total, BLM excludes designated Wilderness Areas (WAs), Wilderness Study Areas (WSAs), and Areas of Critical Environmental Concern (ACECs) from wind energy development. These exclusions are consistent with the *Record of Decision* for the *Final Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States*, which was published in December 2005.

BLM also has the discretion to exclude other areas from wind energy development where significant resource impacts or conflicts cannot be mitigated. Other areas that were excluded from wind energy development in the original PRMP included, but were



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION



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October 2008

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MAP 1: Planning Area

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not limited to, designated critical habitat, recreation areas, and an existing utility corridor. In applying all of these restrictions, the acres of high-quality wind resources available for renewable energy development in the Planning Area were reduced to 16,078 acres. Under the original PRMP, many of these remaining lands were designated as VRM Class II where wind energy development would likely not comply with the objectives of that management class.

In recognition of concerns raised by the public and in an effort to meet its goals to support renewable energy development on public lands, the BLM changed the PRMP regarding wind energy in the vicinity of McCain Valley consistent with Alternative D. Specifically, the BLM designated McCain Valley East (3,635 acres outside of ACECs and WSAs) and McCain Valley West (8,560 acres) as VRM Class IV These areas were designated as VRM Class II and III, respectively, in the original PRMP.

Table 1 illustrates the changes made to the PRMP/FEIS VRM Classes. The BLM also made recreation areas in McCain Valley available for renewable energy development consistent with Alternative D, including Lark Canyon Off-Highway Vehicle Area and the Lark Canyon Campground/Staging Area (1,300 acres) and Cottonwood Campground (16 acres).

TABLE 1
CHANGES IN VRM CLASS FROM PRMP/FEIS TO RMP/ROD

Classification of Lands	Original[1] PRMP/FEIS acres	RMP/ROD acres
VRM Class I	61,908	61,908
VRM Class II	31,623	28,033
VRM Class III	9,288	693
VRM Class IV	51	12,236
Total	*102,869*	*102,869*

[1]Acreages calculated for use in the *Federal Register* notice, as summarized in this table, were obtained using GIS data solely, whereas the figures in the PRMP/FEIS also used published acreages.

High-quality wind resources in McCain Valley and its proximity to the existing utility corridor made it a logical area to focus wind energy development in the Planning Area. Furthermore, wind energy development currently exists in McCain Valley and is visible in the area. Wind energy development and recreation can effectively coexist in McCain Valley. This decision is consistent with the *Record of Decision* for the *Final*

Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States (United States Department of the Interior [DOI] BLM 2005f). Appropriate mitigation will be required for all future development on or adjacent to recreation areas to minimize user conflicts and degradation of the recreational experience.

As part of its protest analysis, the BLM found that it needed to clarify its description of land use restrictions in VRM Classes. BLM is required to manage all uses and activities consistent with an area's VRM Class as established in the RMP. It is not BLM policy to determine, at the RMP level, which land uses or activities to restrict based on VRM Class. Rather, BLM must consider, at the site-specific activity level, all uses proposed for an area with a given VRM Class and determine if those uses would be consistent with the objectives for that Class.

Therefore, the RMP has been clarified by removing the following restrictions (this will not impact RMP decisions related to designated critical habitat, WSAs, or ACECs):

- VRM Class II areas are closed to leasable mineral entry under the Proposed Plan. Removal of this restriction resulted in an additional 27,387 acres open to leasable mineral entry in the Planning Area for a total of 34,993 acres.

- VRM Class II areas are exclusion areas for renewable energy under the Proposed Plan. Removal of this restriction resulted in an additional 27,327 acres available for renewable energy in the Planning Area for a total of 34,259 acres.

- VRM Class II areas are avoidance areas for all land use authorizations under the Proposed Plan (other than renewable energy which is described above). Removal of this restriction allows BLM to consider issuing land use authorizations on approximately 31,600 acres of land designated as VRM Class II in the Planning Area, outside of designated critical habitat, WSAs, and ACECs.

All future development in the Planning Area will adhere to the VRM Class objectives established in the RMP. For example, VRM Class II objectives require that the existing character of the landscape be retained and that the level of change remains low. In order to meet these objectives, BLM expects that the level of development in VRM Class II

would be minimal. BLM will utilize visual resource design techniques and best management practices (BMPs) to mitigate the potential visual impacts. Visual contrast ratings will be required for all major projects proposed for VRM Class I, II, and III areas which have high sensitivity levels. In areas where VRM Class objectives cannot be met through design techniques and/orBMPs, BLM has the authority to deny the project.

Additional minor modifications, corrections, and clarifications that were made in the RMP/ROD are described in the errata in Appendix A.

On July 28, 2008, BLM published a *Notice to Provide Opportunity to Comment on Changes to the Eastern San Diego County Proposed Resource Management Plan* Based on the changes described above.

The comment period ended on August 27, 2008. During the 30-day comment period, the BLM received approximately 50 written comments. Concerns included, but were not limited to: supplementation of the EIS, visual impacts associated with renewable energy development, loss of recreational opportunities due to renewable energy development, increased fire danger due to renewable energy development, impacts to threatened and endangered species associated with renewable energy development, and impacts on groundwater associated with geothermal development. Responses to these comments are summarized below.

Based on a review of the changes being proposed and the analysis in the EIS, the BLM determined that supplementation was not necessary. The proposed changes are within the spectrum of alternatives analyzed in the Draft EIS (DEIS) and will not result in effects outside the range of effects analyzed in the DEIS and carried forward in the FEIS.

In accordance with BLM's *Land Use Planning Handbook* (H-1601-1), BLM is required to designate VRM Classes for all areas of BLM land, based on an inventory of visual resources and management considerations for other land uses. The BLM has determined that the high-quality wind resources in McCain Valley and its proximity to the existing utility corridor make it a logical area to focus wind energy development, and therefore a change in the VRM Class in that location is warranted. Furthermore, wind energy development currently exists in McCain Valley and is visible in the area.

The BLM has determined that wind energy development and recreation can effectively coexist in McCain Valley. This decision is consistent with the *Record of Decision* for the *Final Programmatic EIS for Wind Energy Development on BLM-Administered Lands in the Western United States* (DOI BLM 2005f). Appropriate mitigation would be required for all future development on or adjacent to recreation areas to minimize user conflicts and degradation of the recreational experience, as well as to address any economic loss that may result.

Future site-specific activities in the Planning Area, including renewable energy development projects, are implementation-level decisions. Upon receipt of an application for these types of projects, the BLM would require a site-specific National Environmental Policy Act (NEPA) analysis before actions could be approved (FEIS Section 2.5.2, p. 2-137). Specific impacts of such actions would be analyzed at that time, along with the identification of possible mitigation measures. Site-specific NEPA analysis would include the opportunity for additional public participation and coordination with county and state land and resource managers. Proposed site-specific activities would also be required to comply with other laws and regulations, including but not limited to the Endangered Species Act (ESA) and National Historic Preservation Act (NHPA). In addition, all future wind proposals in the Planning Area must comply with the policies and BMPs set forth in the *Record of Decision for Implementation of a Wind Energy Development Program and Associated Land Use Plan Amendments*, dated December 2005 (http://windeis.anl.gov/documents/index.cfm) that are designed to avoid or minimize impacts to natural resources and that were incorporated by reference into the PRMP/FEIS (FEIS Section 1.6, p. 1-17).

Proposed site-specific activities would be required to meet the VRM objectives established in the land use plan (PRMP/FEIS p. 2-57). BLM will utilize visual resource design techniques and BMPs to mitigate the potential visual impacts. Visual contrast ratings will be required for all major projects proposed for VRM Class I, II, and III areas which have high sensitivity levels. In areas where VRM Class objectives cannot be met through design techniques and/or BMPs, BLM has the authority to deny the project (PRMP/FEIS pp.2-57 and 2-58).

When/if a request for a Right-of-Way (ROW) for a renewable energy development project is submitted to BLM, the evaluation of wildfire potential from the proposed action and completion of a plan of development, appropriate mitigation, and emergency response plan are required as part of the subsequent site-specific NEPA analysis prior to approval. Further, BLM's *Final Programmatic EIS for Wind Energy Development on*

BLM-Administered Lands in the Western United States (June 2005) incorporated by reference in the PRMP/FEIS (Section 1.6, p. 1-17) sets forth policies and BMPs that apply to all future wind proposals on BLM-administered lands in the Eastern San Diego County Planning Area. These policies and BMPs include measures to minimize human health and safety impacts, including wildfire.

General impacts on groundwater from activities that rely on well water such as geothermal development are adequately discussed in Section 4.4.2 of the PRMP/FEIS (p. 4-13). Specific geothermal development projects are implementation-level decisions rather than RMP-level decisions. Upon receipt of an application for a geothermal project, the BLM would require a site-specific NEPA analysis before actions could be approved (FEIS Section 2.5.2, p. 2-137). Project-specific impacts would be analyzed at that time, along with the identification of possible alternatives and mitigation measures. Subsequent site-specific NEPA analysis would include the opportunity for additional public participation and coordination with county and state land and resource managers. Proposed site-specific activities would also be required to comply with other laws and regulations, including but not limited to the ESA and NHPA.

In addition, as stated in Section 3.4.2 (p. 3-17) of the PRMP/FEIS, the County of San Diego's Department of Environmental Health Land Use Program regulates the design, construction, maintenance, and destruction of water wells throughout San Diego County to protect San Diego County's groundwater resources. As stated in Section 2.3.4 (p. 2-10), the BLM has no direct authority over the groundwater. Rather, the groundwater resource is managed by the California State Water Resources Control Board (SWRCB) and California Department of Water Resources (DWR). The BLM works in cooperation with SWRCB and DWR.

Section 3.16.3.2 of the PRMP/FEIS (p. 3-152) discusses the potential of future geothermal use in the Planning Area and concludes that there is limited potential for only "direct use" such as aquaculture, greenhouse, and spas. However, the initial cost for developing residential geothermal resources and operating costs for pumping water to heat exchange units are high, which could result in this type of development being economically unviable on BLM-administered lands within the Planning Area.

The PRMP/FEIS provides an adequate analysis of impacts from renewable energy development on Special Status Species, including threatened and endangered species

(Section 4.7, pp. 4-31 to 4-49). Further, consultation with the United States Fish and Wildlife Service (USFWS) has been completed in accordance with the ESA and its regulations, in addition to BLM policy (16 USC §1531 et seq.; 50 CFR §402 et seq.). As described in Section 5.1.1 of the PRMP/FEIS (p. 5-1), in 2001 the BLM and the USFWS finalized a consultation agreement (the Agreement) to establish an effective and cooperative ESA Section 7 consultation process. The 2001 Agreement defines the process, products, actions, schedule, and expectations of the BLM and the USFWS on project consultation.

As required by the applicable laws and regulations, and the Agreement, formal consultation with the USFWS for the Eastern San Diego County RMP was initiated on November 20, 2007. A Biological Assessment (BA) was prepared to determine the effects of the Preferred Alternative on all relevant listed, proposed, and candidate species, and associated critical habitat. The BA identified all anticipated environmental effects, conservation actions, mitigation, and monitoring including analysis of all direct and indirect effects of plan decisions and any interrelated and interdependent actions. In response to the BA, the USFWS prepared a Biological Opinion (BO) for the Eastern San Diego County RMP on September 30, 2008 (Appendix B). Conservation recommendations specified in the BO are incorporated into this ROD as appropriate. Also, as described above, all future site-specific activities would be required to comply with the ESA through individual Section 7 consultation.

1.2 Alternatives

The goal of developing a reasonable range of alternatives is to find an optimally balanced alternative that provides guidance in the management of the lands and resources administered by the El Centro Field Office (ECFO) in eastern San Diego County that will achieve the following: 1) address conflicts between motorized, mechanized, and non-motorized/non-mechanized recreationists; 2) protect sensitive natural and cultural resources from impacts due to recreational use, livestock grazing, and other land uses; 3) provide guidance for renewable energy development; and 4) address other planning issues raised during the scoping process. The five alternatives developed for detailed analysis in the Draft RMP/Draft EIS (DRMP/DEIS) and PRMP/FEIS are summarized below.

- **Alternative A (No Action)** described the continuation of the present management of the Planning Area as described in the 1981 Eastern San Diego County Management

Framework Plan (DOI BLM 1981a). Alternative A provided an opportunity to compare the current management with various strategies that were analyzed for future management (Alternatives B, C, D, and E). Alternative A served as a baseline for most resources and land use allocations.

- **Alternative B***,* the Mixed Alternative, provided for visitation with opportunities to experience natural and cultural resource values and for development within the Planning Area. It provided access through a transportation network while ensuring that resource protection was not compromised. It proposed a combination of natural processes and active management techniques for resource and use management.

- **Alternative C***,* the Conservation Alternative, generally placed emphasis on preservation of the Planning Area's natural and cultural resources through limited public use and discontinuation of grazing. It focused on natural processes and other unobtrusive methods for natural resource use and management. It proposed fewer motorized and developed recreation opportunities.

- **Alternative D***,* the Development Alternative, generally provided more opportunities for development such as renewable energy, transportation and utility ROWs, and enhanced recreational opportunities (including motorized use).

- **Alternative E (Proposed Plan)** represented BLM's preferred alternative for management of each resource and resource use. Alternative E provided for a balance between authorized resource use and the protection and long-term sustainability of sensitive resources. It allowed visitation and development within the Planning Area, while ensuring that resource protection was not compromised in accordance with the principles of multiple use and sustained yield as mandated by FLPMA.

Implementing regulations for NEPA 40 CFR Part 1505.2(b) require an agency to specify the alternative or alternatives that are considered to be environmentally preferable in the process of reaching its decision The Environmentally Preferred Alternative is Alternative E in the PRMP/FEIS. When taking into consideration both the human (social and economic) and natural environment, this alternative provides the best mix of protecting the physical and biological environment; protecting, preserving and enhancing historic,

cultural, and natural resources; and considering social and economic factors. The RMP/ROD was modified from the Proposed Plan in the PRMP/FEIS (Alternative E) within the spectrum of the analyzed alternatives, and meets the intents of FLPMA and NEPA.

1.3 Management Considerations and Rationale

The approved RMP was designed and selected based on input from other federal agencies, state and local governments, interested groups, Native American tribes, neighboring land owners, and other interested citizens. BLM considers the approved RMP as the best approach to meeting the purpose and need of this project, addressing the planning issues, and providing the optimal balance in managing resources and uses of the lands in the Planning Area. Factors considered during this process include: environmental impacts; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations.

FLPMA requires that BLM manage public lands to:

- Protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values;
- Preserve and protect certain public lands in their natural condition;
- Provide food and habitat for fish and wildlife and domestic animals; and
- Regulate the use, occupancy, and development of public lands.

The RMP as described in Section 2.0 of this document provides the best mix of decisions to protect the physical and biological environment; to protect, preserve and enhance historic, cultural, and natural resources; and that consider social and economic factors. The RMP meets the intent of FLPMA, NEPA, and other applicable laws, regulations, and BLM policies. The RMP balances a wide variety of diverse community and stakeholder values and uses of the public land. More specifically, the RMP provides for a range of recreational opportunities (hunting, hiking, recreational driving, etc.) and consumptive uses (minerals, renewable energy, etc.) in the areas of highest demand while protecting sensitive resources (sensitive species, cultural resources, etc.) through

closures, use limitations, monitoring and the ability to adapt management to future conditions.

1.4 Related Plans and Programmatic Records of Decision

The RMP/ROD incorporates the following BLM programmatic RODs and environmental analyses:

- *ROD for the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands* in *17 Western States Programmatic Environmental Impact Statement* (PEIS) (Department of Interior, Bureau of Land Management, 2007a);
- *Wind Energy Development on BLM-Administered Lands in the Western United States Final Programmatic Environmental Impact Statement* (Department of Interior, Bureau of Land Management, 2005); and
- *National Rangeland Management Final EIS* (FEIS) (Department of Interior, Bureau of Land Management, 2005).

Other related plans (BLM and non-BLM), with which the RMP/ROD is consistent to the extent possible, are:

- *BLM South Coast RMP* (Department of Interior, Bureau of Land Management, Palm Springs South Coast Field Office, 1994, currently under revision);
- *BLM California Desert Conservation Area Plan* (Department of Interior, Bureau of Land Management, California Desert District, 1980), as amended;
- *Anza–Borrego State Park General Plan and Final Environmental Impact Report* (FEIR; California State Parks, 2005); and
- Collaboration with the County of San Diego in development of the *East County Multi-Species Conservation Program* (ECMSCP) Plan (County of San Diego, 2007).

1.5 Mitigation

Mitigation has been incorporated into the management actions outlined in Section 2.0 to avoid or minimize environmental harm while still meeting the purpose and need of the

RMP/ROD. As cited in 40 CFR 1508.20: “Mitigation includes avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments”.

1.6 Plan Monitoring

Monitoring is an essential component of natural resource management, because it provides information on changes in resource use, condition, processes, and trends. This information allows managers to gauge the effectiveness of BLM activities and strategies. The RMP will be monitored annually or at other appropriate intervals to ensure that management actions follow prescribed management direction (implementation monitoring), meet desired objectives (effectiveness monitoring), and are based on accurate assumptions (validation monitoring). It is not necessary or desirable to monitor every management action or direction. Unnecessary detail and cost can be avoided by focused monitoring of key questions and issues using appropriate sampling methods. The level and intensity of monitoring will vary depending on the sensitivity of the resource and the scope of the management activity (BLM *Land Use Planning Handbook* Section V, pp. 32-33).

A monitoring and enforcement program has been adopted and is summarized for all applicable mitigation in Section 4.0 of this RMP/ROD.

1.7 Public Involvement and Interagency Coordination and Consultation

1.7.1 Public Involvement

A notice of intent (NOI) to prepare a Resource Management Plan and Environmental Impact Statement (RMP/EIS) for the Eastern San Diego County Planning Area was published in the *Federal Register* on July 14, 2004. A press release announcing the time

and location of the two initial public scoping meetings was sent out on August 10, 2004. The formal public scoping period began July 14, 2004 and closed October 12, 2004.

Public scoping meetings were held in El Centro and San Diego, California, on September 8 and 9, 2004, respectively. The meetings began with the public being able to look at maps depicting an area of interest and discuss their concerns with a subject matter expert from the ECFO. The public was then given the opportunity to state for the record their preferences for management priorities of public lands under the *Eastern San Diego County RMP/EIS*. At the end of the meeting, information was passed out on how to submit additional comments.

In addition to the two public scoping meetings, ECFO staff met with Anza–Borrego Desert State Park on February 28, 2005 and the County of San Diego, California State Parks, United States Forest Service (USFS), and two water districts on May 3, 2005 to gather information for the RMP/EIS process. In June 2006, a Social and Economic Workshop was also conducted in the Planning Area.

During the scoping period, BLM received 17 comment letters. Public comments addressed a variety of issues and concerns regarding resources and resource uses, as well as management considerations.

Three formal public meetings were held during the public comment period on the DRMP/DEIS. These meetings were held April 2–4, 2007 in San Diego, Julian, and Boulevard, California. The meetings provided an opportunity for interested members of the public to learn more about the analysis contained in the DRMP/DEIS, as well as provide an opportunity for attendees to provide written comments on the document.

During the 90-day public comment period for the DRMP/DEIS, BLM received 201 comment letters resulting in 241 individual comments. Several themes were noted in the comment letters: nine letters expressed a preference for Alternative A; 117 letters expressed a preference for Alternative C, including a set of 99 form postcards; three letters expressed a preference for Alternative D; two letters expressed a preference for Alternative E; 18 letters expressed a preference for higher VRM ratings in certain areas of the Planning Area or restrictions on the consideration of wind energy ROWs; and seven letters expressed a preference for the consideration of wind energy ROWs. See

Section 5.2.4 of the PRMP/FEIS for the response to public comments on the DRMP/DEIS.

During the 30-day protest period for the PRMP/FEIS, nine letters of protest were received. Eight of the letters were deemed to contain valid protest issues, and the BLM Director responded to these protests on July 28, 2008. One was deemed not a valid protest, because it simply expressed support for two of the other letters of protest submitted during the protest period.

On July 28, 2008, BLM published a *Notice to Provide Opportunity to Comment on Changes to the Eastern San Diego County Proposed Resource Management Plan*, as detailed in Section 1.1 of this RMP. The comment period ended on August 27, 2008. During the 30-day comment period, the BLM received approximately 50 written comments. Concerns included, but were not limited to: supplementing the EIS; visual impacts, loss of recreational opportunities, increased fire danger, and impacts to threatened and endangered species associated with renewable energy development; and impacts to groundwater associated with geothermal development. Responses to these comments are summarized in Section 1.1 of this RMP.

Copies of this RMP/ROD (electronic version, hard copy or compact disc) are available at BLM's internet site: (http://www.BLM.gov/CA/st/en/fo/elcentro.html) or the El Centro Field Office (1661 South 4th Street, El Centro, California 92243) or by calling 760-337-4400.

1.7.2 Interagency Coordination and Consultation

The scattered nature of BLM-administered land in the Planning Area makes it essential for BLM to collaborate, cooperate, and coordinate with adjacent and intermingled land owners and managers in the development and implementation of this land use plan.

In the development of this RMP/ROD, BLM coordinated and consulted with other federal agencies; state, county and local government agencies as detailed in Sections 5.1.1 and 5.1.2 of the PRMP/FEIS.

In 2001, BLM and USFWS finalized a consultation agreement to establish an effective and cooperative Endangered Species Act (ESA) Section 7 consultation process. As a result of this consultation, a BO was prepared by the USFWS on September 30, 2008 (USFWS 2008) to determine the effects of the RMP on all relevant listed, proposed, and candidate species, and associated critical habitat (see Appendix B). The BO identifies all expected environmental effects, including analysis of all direct and indirect effects of plan decisions and any interrelated and interdependent actions, and specifies additional conservation measures. These conservation measures are incorporated in Section 2.7.1 of this RMP/ROD.

BLM consulted with Native Americans in compliance with EOs regarding government-to-government relations with Native Americans and other federal laws and regulations, and formal and informal consultation and contacts were made with interested tribal entities at several points in the planning process. BLM contacted 20 tribal entities to initiate government-to-government consultation or solicit information about issues of concern for the *Eastern San Diego County Resource Management Plan* as detailed in Section 5.1.3 of the PRMP/FEIS. Native American tribal governments and organizations contacted are listed below.

- Campo Band of Mission Indians
- La Posta Band of Mission Indians
- Manzanita Band of Mission Indians
- Ewiiaapaayp Band of Mission Indians
- Inaja-Cosmit Band of Mission Indians
- Santa Ysabel Band of Mission Indians
- Mesa Grande Band of Mission Indians
- Los Coyotes Indian Reservation
- Barona Band of Mission Indians
- Jamul Indian Village
- Sycuan Band of Mission Indians
- Viejas Band of Mission Indians

- San Pasqual Band of Mission Indians
- Kwaaymii Laguna Band of Mission Indians
- Fort Yuma Indian Reservation
- Torres-Martinez Desert Cahuilla Indians
- Morongo Band of Mission Indians
- Rincon Band of Mission Indians
- Cocopah Indian Tribe
- Fort Yuma Quechan Tribe
- Kumeyaay Cultural Historic Committee
- Kumeyaay Cultural Repatriation Committee

BLM initiated formal consultation with the California State Historic Preservation Officer (SHPO) by letter in December 2004. BLM initiated consultation in accordance with the *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers regarding the Manner in which BLM Will Meet Its Responsibilities under the National Historic Preservation Act* (NHPA; 1997) and the Protocol Agreement between the California State Director of the BLM and the California SHPO (1998). Consultation regarding historic properties that might be affected by this plan was completed on September 8, 2008. A letter of concurrence of no adverse effect dated June 19, 2008 was sent from the SHPO on August 6, 2008 (Appendix C). No further statement was issued from the SHPO based on the revisions outlined in the July 28, 2008 Federal Register notice.

The Governor had 60 days in which to identify inconsistencies and provide recommendations in writing regarding the PRMP/FEIS to the State Director. BLM received a letter dated September 9, 2008 from Governor Arnold Schwarzenegger that stated support for the proposed changes set forth in the *Notice of Opportunity to Comment on Changes* and encouraged renewable energy development on public lands.

1.8 Administrative Remedies

The RMP/ROD includes two levels of decisions: land use planning and implementation-level decisions. Land use planning decisions were protestable during the 30-day protest period that began December 7, 2007 in accordance with BLM regulations 43 CFR 1610.5-2. Nine protest letters were received and resolved by the Director of the BLM. These protest resolutions constitute the BLM's final decision on the concerns raised in the protest letters.

Making implementation-level decisions as part of the land use planning process and analyzing them concurrently with land use plan decisions does not change the administrative remedies for implementation-level decisions or the timing of those remedies. Implementation-level decisions are appealable in accordance with 43 CFR Part 4.

1.8.1 Land Use Planning Decision Protest Resolution

During the 30-day protest period for the PRMP/FEIS, nine letters of protest were received. One was deemed not a valid protest because it only expressed support for two of the other letters of protest submitted during the protest period. Eight of the letters were deemed to contain valid protest issues. The Director of the BLM reviewed the protests and responded to them on July 28, 2008. The Director concluded that the BLM California State Director, the California Desert District Manager, and the El Centro Field Office Manager followed the applicable planning procedures, laws, regulations, and policies and considered all relevant resource information and public input in developing the Eastern San Diego County PRMP/FEIS. However, in response to protests and based on additional policy discussions the BLM clarified and made changes to the Proposed Plan as set forth in the PRMP/FEIS. A description of the clarification and changes made to the PRMP/FEIS as a result of protest resolution can be found in Section 1.1.

1.8.2 Implementation-Level Decisions Appeal Procedures

The Interior Board of Land Appeals (IBLA) does not review appeals from a decision of the Director of the BLM on protests concerning resource management plans. Those who believe they may be adversely affected by a decision of a BLM official to implement the

Eastern San Diego County RMP/ROD may appeal such action to the IBLA at the time the action is implemented. The decisions designating routes of travel for motorized vehicles are implementation-level decisions and are appealable in accordance with 43 CFR Part 4. These implementation-level decisions for routes of travel, as described in Section 3.0 of this document, are effective upon issuance of this RMP/ROD, unless a stay of the decision is granted.

Any party adversely affected by Transportation and Public Access route designations may appeal within 30 days of the date of publication or date of service in accordance with the provisions of 43 CFR Part 4.4. The publication of the Notice of Availability of this ROD and approved RMP will be considered the date the decision is noticed. The Notice of Appeal should state the specific route(s), as identified in Section 3.2 of the RMP/ROD, on which the decision is being appealed. Copies of the map detailing the labeled routes of travel (electronic version, hard copy or compact disc) are available at BLM's internet site (http://www.BLM.gov/CA/st/en/fo/elcentro.html) or the El Centro Field Office (1661 South 4th Street, El Centro, California 92243) or by calling 760-337-4400.

2.0 Eastern San Diego County Resource Management Plan

2.1 Rangeland Health Standards Management

The following regional standards for rangeland health are adopted with this plan:

RHS-01 **Standard #1—Soils:** Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed, as indicated by:

- Canopy and ground cover are appropriate for the site;
- There is diversity of plant species with a variety of root depths;
- Litter and soil organic matter are present at suitable sites;
- Microbiotic soil crusts are maintained and in place;
- Evidence of wind or water erosion does not exceed natural rates for the site; and
- Soil permeability, nutrient cycling, and water infiltration are appropriate for the soil type.

RHS-02 **Standard #2—Riparian/Wetland and Stream Function:** Wetland systems associated with subsurface, running, and standing water function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained as indicated by:

- Vegetative cover adequately protects banks and dissipates energy during peak water flows;
- Dominant vegetation is an appropriate mixture of vigorous riparian species;

- Recruitment of preferred species is adequate to sustain the plant community;
- Stable soils store and release water slowly;
- Plant species present indicate that soil moisture characteristics are being maintained;
- There is minimal cover of shallow-rooted invader species, and they are not displacing deep-rooted native species;
- Shading of stream courses and water sources is sufficient to support riparian vertebrates and invertebrates;
- Stream is in balance with water, and sediment is being supplied by the watershed, where appropriate;
- Stream channel size and meander is appropriate for soils, geology, and landscape; and
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

RHS-03 **Standard #3—Native Species:** Healthy, productive, and diverse habitats for native species, including special status species, are maintained in places of natural occurrences, as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;
- Plant vigor, nutrient cycles, and energy flows are maintaining desirable plants and ensuring reproduction and recruitment;
- Plant communities are producing litter within acceptable limits;
- Age class distributions of plants and animals are sufficient to overcome mortality fluctuations;
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;

- Alien and noxious plants and wildlife do not exceed acceptable levels or require action to prevent the spread and introduction of noxious/invasive weeds;
- Appropriate natural disturbances are evident; and
- Populations and their habitats are sufficiently distributed to prevent the need for new listings of special status species.

RHS-04 **Standard #4—Water Quality:** Water quality meets state and federal standards including exemptions allowable by law, as indicated by:

- Dissolved oxygen levels, aquatic organisms, and aquatic plants (e.g., macroinvertebrates, fish, and algae) indicate support of beneficial uses;
- Chemical constituents, water temperatures, nutrient loads, fecal coliform, and turbidity are appropriate for the site or source; and
- Implementation of best management practices (BMPs).

2.2 Air Resources Management

2.2.1 Goals and Objectives

ARM-01 Maintain or improve air quality as established by the National Ambient Air Quality Standards and California Ambient Air Quality Standards through cooperative management of emissions with industry, the State of California, and federal agencies.

ARM-02 BLM will strive to minimize, within the scope of its authority, any emissions that may cause violations of air quality standards, add to acid rain, or degrade visibility.

2.2.2 Management Actions

ARM-03 Comply with the State of California for all proposed actions that would contribute to particulate matter emissions in the air as a result of actions taken in this RMP/ROD.

2.3 Soil Resource Management

2.3.1 Goals and Objectives

SRM-01 Manage soils to maintain productivity and minimize erosion.

SRM-02 Maintain or improve ecological condition to proper functioning condition in riparian areas to minimize soil erosion.

SRM-03 Meet Rangeland Health Standard #1, as related to soils in accordance with Standards of Rangeland Health (see Section 2.1, RHS-01).

2.3.2 Management Actions

SRM-04 Take steps to control erosion on authorized vehicle routes, burned areas, riparian areas, and grazed areas by allowing plant growth to resume in these areas after catastrophic events such as fires and floods, which are common in the Planning Area. BLM will employ BMPs, revegetation, and strategic placement of rocks to control erosion.

SRM-05 Minimize surface disturbance from authorized activities. Post-activity disturbed surfaces will be restored to a pre-disturbance or stable condition.

SRM-06 Restrict construction activities when soils are susceptible to a heightened risk of erosion. Limit ground-disturbing activities when soils are wet in order to avoid compaction of soils.

SRM-07 Incorporate erosion control measures into projects on a case-by-case basis.

SRM-08 Manage biological resources to minimize erosion including the restoration of damaged riparian areas and promotion of healthy native plant groundcover.

SRM-09 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.4 Water Resources Management

2.4.1 Goals and Objectives

2.4.1.1 General

WRM-01 Ensure the physical presence and legal availability of surface water and groundwater on public lands.

WRM-02 Ensure that those waters meet or exceed federal and California water quality standards for specific uses.

WRM-03 Ensure that water quality achieves or is making significant progress toward achieving established BLM management objectives such as meeting wildlife and recreational needs.

WRM-04 Meet Rangeland Health Standard #4, as related to water quality in accordance with Standards of Rangeland Health (see Section 2.1, RHS-04).

2.4.1.2 Surface Water

WRM-05 Identify and protect surface waters from the standpoint of human health concerns, aquatic ecosystem health, or other public uses.

WRM-06 Preserve and enhance stream bank and channel condition.

WRM-07 Identify area-wide use restrictions or other protective measures to meet federal, tribal, state, and local water quality requirements.

2.4.1.3 Groundwater

WRM-08 Make groundwater, where present, available for beneficial use on public lands.

2.4.2 Management Actions

WRM-09 Maintain existing proper functioning conditions of watersheds by applying BMPs.

WRM-10 Prevent or reduce water quality degradation through implementation of applicable BMPs or other specific mitigation measures, when applicable.

WRM-11 Continue to maintain or improve water quality in accordance with state and federal standards. Consult with the appropriate state agencies on proposed projects that may significantly affect water quality.

WRM-12 Apply BMPs on public land within municipal watersheds to protect water quality and quantity.

WRM-13 Control erosion on authorized vehicle routes, burned areas, riparian areas, and grazed areas to protect water quality through application of BMPs.

WRM-14 Proposed activities (e.g. surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.5 Vegetation Resource Management

2.5.1 Plant Communities

2.5.1.1 Goals and Objectives

Planning Area-wide

VEG-01 Promote biological diversity through conservation of native plant communities and special status species with consideration for multiple use of the land and sustained ecological function.

VEG-02 Maintain and enhance a mosaic of native plant communities in upland and riparian areas.

VEG-03 Restore unproductive or non-functioning upland and riparian sites to desired plant communities that are functioning properly, based upon ecological site potential.

VEG-04 Promote wildlife forage and habitat values and maintain and/or restore intrinsic biological integrity and value for all native plant communities.

VEG-05 Ensure that riparian areas achieve or maintain properly functioning condition. Riparian areas enhance water quality, improve water storage, increase groundwater recharge, and provide quality wildlife habitat values.

VEG-06 Protect or restore native species in upland and riparian communities through an integrated weed management approach emphasizing prevention, early detection, and eradication of invasive non-native plants.

VEG-07 Ensure that forage on rangelands continues to support wildlife in a manner consistent with other resource management practices or uses.

VEG-08 Ensure that desired plant communities are protected from ground-disturbing activities, including recreation uses.

VEG-09 Maintain plant communities that secure soil resources and protect against erosion and air quality degradation.

VEG-10 Meet Rangeland Health Standards #3 and #4, as related to vegetative resources in accordance with Standards of Rangeland Health (see Section 2.1, RHS-03 and RHS-04).

Desired Plant Communities

Mixed Riparian Woodlands

VEG-11 Promote riparian woodlands that contain a diversity of native trees adapted to periodic flooding.

VEG-12 Promote bank vegetation composed of native species capable of withstanding flood events to prevent soil loss and bank erosion.

VEG-13 Promote riparian-associated habitat to enhance wildlife habitat.

Oak Woodlands

VEG-14 Promote oak woodland communities with oak recruitment that contain trees of various size and age classes, with an understory of native perennial grass and forb species.

VEG-15 Ensure that oak woodland communities are stable or expanding with no net loss and minimal habitat fragmentation.

Desert Wash

VEG-16 Promote multi-layered desert wash communities that are dominated by perennial vegetation, which provide for watershed connectivity, sediment capture and storage, energy dissipation, and bank stability.

VEG-17 Promote diverse vegetative composition and structure that include such species as blue palo verde (*Cercidium floridum* ssp. *floridum)*, desert willow (*Chilopsis linearis* ssp. *arcuata*), ironwood (*Olneya tesota*), mesquite (*Prosopis glandulosa* var. *torreyana)*, smoke tree (*Psorothamnus spinosus)*, and catclaw acacia (*Acacia greggii*). Size and growth form, such as overhanging branches, mid-story and under-story vegetation, are represented by naturally occurring species of moderate density.

VEG-18 Ensure sufficient bank vegetation that provides landscape habitat connectivity and physical stability, which in turn support ground-dwelling species.

Semi-Desert Chaparral

VEG-19 Promote semi-desert chaparral communities for Native American vegetation collection.

VEG-20 Promote a natural fire regime to allow natural succession and minimize the likelihood of catastrophic wildfires.

VEG-21 Maintain unfragmented semi-desert chaparral habitats that function as a landscape connectivity matrix (i.e., movement corridors and foraging areas) between adjacent plant communities.

Desert Fan Palm Oasis

VEG-22 Promote desert fan palm oasis communities for Native American cultural values.

VEG-23 Maintain desert fan palm oasis communities as an indicator of water resources.

Mixed Conifer Woodland

VEG-24 Promote conifer woodland communities that contain trees of various size and age classes with an understory of native perennial grass and forb species.

Enriched Desert Scrub

VEG-25 Maintain cactus communities that have diverse vegetative composition and structure from small shrubs to large trees (such as ironwood, agave [*Agave* spp.], palo verde, and mesquite) interspersed with a variety of cacti (such as fish-hook cactus [*Mammillaria* spp.], prickly pear, beavertail, and cholla [*Opuntia* spp.], California barrel cactus [(*Ferocactus cylidreaceus*)], and hedgehog [*Echinocereus engelmannii*]).

VEG-26 Promote enriched desert scrub communities for Native American cultural values.

2.5.1.2 Management Actions

VEG-27 Avoid adverse impacts to special status species, priority species, and plants protected by the California Native Plant Protection Act and associated habitats by developing, modifying, redesigning, mitigating, or abandoning specific projects.

VEG-28 Restore degraded native plant communities through restoration activities that could include but are not limited to exclusion of disturbance activity, invasive plant removal, site preparation, and revegetation.

VEG-29 Restore surface disturbance impacts resulting from discretionary activities, such as ROW construction, with rehabilitation measures including imprinting, contouring, debris and brush replacement, native plant seeding (where appropriate), and invasive plant treatment.

VEG-30 Restore surface disturbance impacts resulting from illegal trespass activities with rehabilitation measures including imprinting, contouring, debris and brush replacement, native planting or seeding (where appropriate), and invasive plant treatment.

VEG-31 Require minimum impact approaches such as trimming trees instead of removal, using existing routes and ROWs instead of creating new ones, and

using previously disturbed sites and crushed vegetation instead of blading new routes, where appropriate.

VEG-32 For surface-disturbing activities where avoidance is not possible, encourage transplanting of plant species directly on-site or onto neighboring public lands where feasible, using approved protocol.

VEG-33 Surface-disturbing activities will be designed to avoid impacts to riparian areas, desert fan palm oases, oak woodlands, and desert wash to the greatest extent possible. Where avoidance is not possible, these areas will be restored to their previously undisturbed or native condition. Restoration will follow approved protocol and include watering and maintenance until establishment.

VEG-34 Remove tamarisk and other non-native invasive plant species using mechanical and herbicide applications in accordance with BLM policy on minimum tools in wilderness and the *Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Final Programmatic Environmental Impact Statement* (DOI BLM 2007a and 2007b).

VEG-35 When practicable, salvage useable native plants and parts of plants where plants would normally be lost due to development, disposal, or disturbance on public lands. Plants and parts of plants may be replanted on public lands or salvaged for public purposes. Plants and parts of plants will only be removed from public lands pursuant to applicable federal and state laws and regulations governing the sale, disposal, and transportation of plants.

VEG-36 Use native plant materials for landscaping at developed recreation sites within public lands.

VEG-37 Treat non-native invasive species, where appropriate, to meet management objectives.

VEG-38 Protect desired plant communities through construction of fire breaks or hazard fuels reduction, where appropriate.

VEG-39 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

VEG-40 Allow prescribed burning on a case-by-case basis.

VEG-41 Prohibit removal of native standing trees, alive or dead, with the exception of fire management, health and human safety, or disease control.

VEG-42 Limit the introduction of non-native plants through an education program partnered with equestrian recreational users, off-highway vehicle (OHV) users, and other recreational users.

VEG-43 Riparian areas will be avoidance areas for all commercial and non-commercial surface disturbance activities. Avoidance area is defined as an area only available for discretionary land use authorizations when there are no other reasonable alternatives for the authorization.

VEG-44 Perform revegetation projects that promote riparian area proper functioning condition and recruitment of oaks in uplands adjacent to riparian areas.

VEG-45 Develop partnerships with adjacent landowners, local agencies, state agencies, and federal agencies to manage habitat, conduct restoration activities, develop educational material, and provide interpretation of vegetation.

VEG-46 Rehabilitation priority will be given to riparian areas, desert fan palm oases, oak woodlands, and desert wash, habitats that support special status species and ACECs.

2.5.2 Priority Plant Species

2.5.2.1 Goals and Objectives

PPS-01 Ensure that plant species populations are stable or increasing, with adequate recruitment given the ecological conditions and dynamics associated with the Planning Area.

PPS-02 Promote landscape-scale conservation of the priority plant species to protect or restore botanical resources of concern and to ensure consistent management across jurisdictional boundaries.

2.5.2.2 Management Actions

PPS-03 Minimize or mitigate loss of habitat or fragmentation of priority plant species populations.

PPS-04 To mitigate for surface-disturbing activities, avoid priority plant species where possible. Where avoidance is not possible, these populations will be restored

to their previously undisturbed or native condition after completion of the activity. Restoration will follow approved protocol and include watering and maintenance until establishment.

PPS-05 Implement protection and restoration measures such as fencing, invasive weeds treatment, and native plants seed collection for the priority plant species.

PPS-06 Treat non-native invasive species where appropriate to protect priority plant species.

PPS-07 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.5.3 Invasive Non-native Plants

2.5.3.1 Goals and Objectives

INP-01 Prevent the introduction or spread of non-native, invasive and state and federally listed noxious weed species and promote the reduction of existing invasive species populations.

2.5.3.2 Management Actions

INP-02 Use an integrated pest management (IPM) approach to ensure that the best methods available are implemented to prevent the introduction and control the spread of non-native plants, invasive plants, and noxious weeds.

INP-03 Enhance non-native invasive species management through a collaborative approach with fire management.

INP-04 Treat non-native invasive species that constitute significant fuel load and fire threat directly by using IPM or management through fire breaks and other tactics.

INP-05 Treat fire breaks as needed to control the introduction and spread of non-native invasive species.

INP-06 Treat tamarisk (*Tamarix spp.*) and other riparian invasive, non-native species on BLM-administered lands within the Planning Area.

INP-07 Require BLM contractors and employees to clean vehicles after traveling in areas of highly noxious or invasive weeds infestation.

INP-08 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.5.4 Vegetative Use Authorization

2.5.4.1 Goals and Objectives

VUA-01 Promote appropriate levels of dead and downed wood on the ground, outside of the campground areas, to provide wildlife habitat and reduce soil erosion.

VUA-02 Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

2.5.4.2 Management Actions

VUA-03 Wood cutting for commercial purposes is not allowed on BLM-administered lands within the Planning Area.

VUA-04 Wood collection is not allowed within ACECs.

VUA-05 Prohibit removal of native standing trees alive or dead unless needed for fire management, health and human safety, or disease control.

VUA-06 Allow gathering of dead, downed wood for personal campfire use in the campgrounds only. This wood must be hand carried to the campsite, in accordance with 43 CFR 8365.1-5(b).

VUA-07 Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans, in accordance with the interagency Traditional Gathering Policy developed by the BLM and the USFS. All other vegetation collecting will be on a case-by-case basis by permit. Restrict collection of plant materials to those allowable under the

California Native Plant Protection Act. Consideration for collection by educational facilities, botanical gardens, and public institutions will be given priority.

Allowable Uses Requiring Permits

VUA-08 To manage vegetation resources, the BLM will administer a permit program for specific commercial and non-commercial uses. Vegetative use authorization will be considered on a case-by-case basis, and permits will include standard guidelines and stipulations for collection. Permits may also include stipulation developed during a site-specific NEPA analysis. Priority plant species will be protected, and collections will be permitted on a case-by-case basis.

VUA-09 **Plant and Seed Collection.** Scientific collection of vegetative materials, including seeds, will be permitted where appropriate through an annual letter of permission by the ECFO. Commercial seed collection will require a permit on BLM lands and will follow approved protocol. Seed collection for BLM administrative use will follow approved protocol.

VUA-10 **Salvage Plant Collection.** Plant salvage will be allowed on BLM-administered lands within the Planning Area on a case-by-case basis. Plant salvage will require prior written authorization from BLM as well as a permit from the United States Department of Agriculture (USDA) as required by the California Native Plant Protection Act.

Allowable Uses Not Requiring Permits

VUA-11 The public does not need written authorization or a permit for the following uses:

- Collection of dead, downed, and detached wood for personal campfire use is permissible while camping on BLM-administered land, in campgrounds only. Any wood collected for this purpose must be hand carried to the campsite.

- In accordance with 43 CFR 8365.1-5(b), reasonable amounts (as defined below) of the following may be collected from the Public Lands for non-commercial purposes:

  (1) Small quantities (no more than 20 percent of available resource from any individual plant and from total collecting area) of flowers for personal use;

(2) Small quantities (no more than 20 percent of available resource from any individual plant and from total collecting area) of dry vegetation, nuts, or berries;

(3) Five or fewer pieces (i.e., cuttings) of a live native plant (California Native Plant Protection Act)—no whole plants may be collected;

(4) Firewood that is a) dead and down, and b) can be hand carried to a campsite (in campgrounds only); and

(5) Tamarisk in any quantities.

VUA-12 Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans, in accordance with the interagency Traditional Gathering Policy developed by the BLM and the USFS.

VUA-13 If monitoring indicates potential resource degradation, closure to firewood collection will be implemented using adaptive management. The collection and possession of ironwood at any time are prohibited.

Prohibited Uses (Collection Not Allowed)

VUA-14 The public is prohibited from collecting:

(1) Live cacti or agave (e.g., century plant, nolina, yucca) of any kind;

(2) Whole, live native plants;

(3) California fan palm (*Washingtonia filifera*);

(4) Fuel wood for home heating purposes; and

(5) All species in the family Fouquieriaceae (ocotillo, candlewood); the genus *Prosopis* (mesquites); the genus *Cercidium* (palo verdes); *Acacia greggii* (catclaw acacia); *Dalea spinosa* (smoketree); and *Olneya testota* (ironwood), including both dead and live specimens.

2.6 Wildlife Resource Management

2.6.1 Planning Area-wide

2.6.1.1 Goals and Objectives

WLD-01 Promote and maintain healthy key habitats (i.e., riparian areas, desert washes, oak woodlands, abandoned mines) and associated wildlife assemblages.

WLD-02 Promote wildlife resources that will meet conservation, socio-economic (e.g., hunting, watchable wildlife), and tribal needs.

WLD-03 Provide well-distributed habitat and connectivity corridors capable of supporting self-sustaining populations of interacting groups of priority species for biodiversity and genetic viability.

WLD-04 Provide suitable habitat capable of maintaining stable or increasing trends in abundance to help keep species from becoming federally listed.

WLD-05 Ensure that livestock waters provide safe, usable water for wildlife.

WLD-06 Maintain natural and man-made wildlife waters for ecological integrity and to promote biological diversity.

WLD-07 Reduce human-caused disturbance to habitats that result in animal mortalities or undesirable effects to populations of priority species during critical times, such as breeding or drought.

WLD-08 Maintain or restore appropriate amount, distribution, and characteristics of life-stage habitats for general wildlife species. Populations of non-native plants will be reduced or eradicated in areas where their presence threatens the integrity of general wildlife populations.

2.6.1.2 Management Actions

WLD-09 Restore native species habitat distribution and occurrence (especially for priority species), conserve biological diversity, maintain genetic integrity and exchange, and improve availability of suitable habitats and habitat linkages. Initiate restoration activities in priority habitats—such as invasive weed removal or native seeding—to move toward desired habitat conditions, and provide functional landscapes to sustain the fish and wildlife species-

populations. Wildlife habitat improvement projects for the Planning Area will be implemented in coordination with the California Department of Fish and Game (CDFG), pursuant to Section 103(f) of the California Desert Protection Act of 1994, and/or USFWS, as necessary.

WLD-10 Authorize reintroductions, transplants, and supplemental stockings (augmentations) of native wildlife populations (as defined in BLM Manual 1745) in current or historic ranges in cooperation with CDFG and/or the USFWS to: 1) maintain populations, distributions, and genetic diversity, 2) conserve or recover threatened or endangered species, 3) restore or enhance native wildlife diversity and distribution; and 4) maintain isolated populations.

WLD-11 Manage invasive and pest species or species identified as pests in accordance with applicable BLM or CDFG management policies depending on administrative area.

WLD-12 Prohibit livestock grazing when native wildlife forage (defined as food sources for animals, especially when taken by browsing or grazing) or water sources will be adversely affected.

WLD-13 Design and implement vegetation, fire and fuels, and watershed resource management-related projects that will promote enhancement of existing habitat conditions or restoration of degraded habitat conditions for native wildlife species. Vegetation and fuels management for wildlife habitat improvement will consider the following habitat conditions or features: (1) amount, quality, and distribution of suitable habitats; (2) juxtaposition and connectivity to other habitat areas; (3) influence of roads-related degradation; and (4) ecosystem disturbance processes that develop and modify habitats.

WLD-14 Pursue land acquisition options (i.e., purchase, exchange, donation, and easement) to consolidate important wildlife habitats.

WLD-15 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

WLD-16 Maintain current wildlife waters through CDFG and volunteer contributions. Consider construction of new wildlife waters on a case-by-case basis, in coordination with CDFG.

WLD-17 Conduct prescribed burns to benefit wildlife habitat.

Please also see Lands and Realty, Vegetation Resources, and Livestock Grazing sections for additional habitat conservation actions that would affect wildlife resources.

2.6.2 Priority Wildlife Species

Priority wildlife species on BLM-administered lands within the Planning Area include raptors, non-game migratory birds, bats, and game animals.

2.6.2.1 Raptors

Goals and Objectives

RAP-01 Maintain, restore, or enhance nesting and foraging habitat for raptors.

RAP-02 Provide for safe passage of migrating raptors.

Management Actions

RAP-03 Provide natural or man-made nesting or perching structures in suitable areas to enhance foraging and breeding habitat for raptors as the need arises.

RAP-04 Require all new structures to be raptor-safe in accordance with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (the Avian Power Line Interaction Committee 2006) or the current version of this document.

RAP-05 Apply the BLM wind energy program policies and BMPs from Appendix A in the Wind Energy Development Program ROD (DOI BLM 2005f).

RAP-06 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.6.2.2 Non-game Migratory Birds

Goals and Objectives

BRD-01 Maintain, restore, or enhance nesting, foraging, and migratory stopover habitat consistent with non-game migratory birds' habitat management objectives, emphasizing the natural biological diversity.

BRD-02 Provide for safe passage of non-game migratory birds.

BRD-03 Minimize habitat fragmentation and provide for migratory corridors.

BRD-04 Promote socio-economic and recreational values of birds, such as eco-tourism.

Management Actions

BRD-05 Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable, through the application of mitigation measures for authorized activities.

BRD-06 Management actions will be guided by recommendations of comprehensive migratory bird planning efforts such as those completed by California Partners in Flight, including *The Oak Woodland Bird Conservation Plan* (California Partners in Flight [CalPIF] 2002), *The Riparian Bird Conservation Plan* (Riparian Habitat Joint Venture 2005), *The Coastal Scrub and Chaparral Plan* (CalPIF 2004), and other plans as available.

BRD-07 Require all new structures to be bird-safe in accordance with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee 2006) or the current version of this document.

BRD-08 Apply the BLM wind energy program policies and BMPs from Appendix A in the *Wind Energy Development Program ROD* (DOI BLM 2005f).

BRD-09 Provide recreational opportunities for bird watching and photography.

BRD-10 Monitor new energy development including power lines and wind turbines or other structures to better understand risks to non-game migratory birds.

BRD-11 Require a non-game migratory bird inventory for new utility or energy projects.

BRD-12 Conduct control measures for brown-headed cowbird (*Molothrus ater*) and European starling (*Sturnus vulgaris*) in riparian habitats and oak woodlands, as necessary and feasible.

BRD-13 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.6.2.3 Bats

Goals and Objectives

BAT-01 Maintain, enhance and protect bat roost sites and foraging habitat while providing for public safety.

Management Actions

BAT-02 Install bat gates or cable nets at abandoned mine sites that could support bat roosts.

BAT-03 Reclaim mines to promote bat habitat, as practicable.

BAT-04 Apply the BLM wind energy program policies and BMPs from Appendix A in the *Wind Energy Development Program ROD* (DOI BLM 2005f).

BAT-05 Require a bat inventory for new wind energy projects.

BAT-06 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.6.2.4 Game Animals (Birds and Mammals)

Goals and Objectives

GME-01 Maintain, enhance, and protect habitat for native game animal populations.

Management Actions

GME-02 Prohibit livestock grazing when native wildlife forage (defined as food sources for animals, especially when taken by browsing or grazing) or water sources will be adversely affected.

GME-03 Maintain, restore, or enhance wildlife waters for native game animal populations. Water developments will include design features to ensure safety and accessibility to water by desirable wildlife. Where practical, water troughs and tanks will be kept full year-round to provide a continuous water supply for native game animals. Provide reasonable administrative use-related vehicular access by CDFG personnel to game animal water facilities for operation and maintenance activities, which could include cross-country travel along a pre-approved route. Enhancement projects will not be undertaken for non-native birds and mammals.

GME-04 Apply the BLM wind energy program policies and BMPs from Appendix A in the *Wind Energy Development Program ROD* (DOI BLM 2005f).

GME-05 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

GME-06 Construction of new wildlife waters will be authorized on a case-by-case basis.

2.7 Special Status Species Management

2.7.1 Planning Area-wide

2.7.1.1 Goals and Objectives

SSS-01 Maintain, enhance, and restore terrestrial and riparian habitats for the survival and recovery of species listed under the ESA and to prevent proposed or candidate species from becoming listed as endangered or threatened under the ESA. Perform management actions that contribute to recovery and delisting of species listed under the ESA.

SSS-02 Avoid or minimize activities that result in the following situations for special status species and associated habitat on BLM-administered public lands: (1) species becoming endangered or extirpated from public lands in the Planning Area; (2) species undergoing significant current or predicted downward trend in habitat capability that would reduce a species' existing distribution; and (3) species undergoing significant current or predicted downward trend in population or density.

SSS-03 Provide habitat capable of maintaining stable or increasing population trends of special status species to ensure persistence. Provide suitable ecological conditions that constitute well-distributed habitats and connective corridors to support reproductive needs and free-flow movements of special status species for population persistence.

SSS-04 Minimize or avoid human-caused habitat destruction, degradation, and fragmentation to protect special status species. Habitat modifications from land and resource uses will be at levels that do not threaten the persistence of threatened, endangered, proposed, or candidate species populations.

SSS-05 Achieve stable or increasing populations of special status plant species over time with adequate pollination, nurse plants, recruitment, and survivorship. Maintain desired habitat conditions or restore degraded habitats to promote pollinator success and survival.

2.7.1.2 Management Actions

SSS-06 Implement species- or habitat-specific goals, objectives, prescriptions, and actions, as applicable, addressed in the approved recovery plans for federally listed species.

SSS-07 No activities or projects will be permitted on BLM-administered lands that jeopardize the continued existence of federally listed plant and wildlife species, or species proposed for listing.

SSS-08 Authorize reintroductions, transplants, and supplemental stockings (augmentations) of special status species populations (as defined in BLM Manual 1745) in current or historic ranges in cooperation with CDFG and/or the USFWS.

SSS-09 Maintain or restore appropriate amount, distribution, and characteristics of life-stage habitats for special status plant species. Populations of non-native plants will be reduced or eradicated in occupied and potential special status plant habitat.

SSS-10 Apply the BLM wind energy program policies and BMPs from Appendix A in the *Wind Energy Development Program ROD* (DOI BLM 2005f).

SSS-11 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

SSS-12 Require that any surface disturbance activities avoid or minimize impacts and mitigate for residual impacts to all special status species habitat. Mitigation will be in the form of habitat restoration or acquisition.

SSS-13 Do not allow commercial or personal collection of special status species. Allow research collection by permit only.

SSS-14 Limit motorized use through incorporation of seasonal closure of designated access routes, as appropriate, in sensitive areas, such as critical habitat or recovery areas.

SSS-15 Follow prescriptions in recovery plans for federally listed species.

SSS-16 Critical habitat lands are exclusion areas for all types of Land Use Authorizations including renewable energy (geothermal development is regulated by the land use decisions for leasable mineral resources).

SSS-17 For locatable minerals, require mining plans of operation in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat. Any activity located within critical habitat will require a Section 7 consultation with USFWS.

SSS-18 Critical habitat is closed to leasable mineral entry.

SSS-19 Critical habitat is closed to salable mineral entry.

SSS-20 Incorporate the additional conservation measures that are recommended in the BO prepared by the USFWS for the RMP (Appendix B), as follows:

1. Site-specific habitat evaluations and species-specific biological surveys shall be conducted by qualified individuals [section 10(a)(1)(A) permit holders when necessary, and equivalent credentials when not necessary] to determine the status of listed species for project proposals that may require consultation with the USFWS.

2. To offset unavoidable impacts to suitable/unoccupied and occupied Quino checkerspot butterfly (Quino) habitat by proposed projects, BLM or the applicant shall restore degraded habitat at no less than a 2:1 ratio (restored:developed). Suitable/unoccupied habitat is defined as areas containing the primary constituent elements (PCEs) as outlined in the January 17, 2008 proposed revision to critical habitat (73 FR 3328) (see the "Status of the Species/Critical Habitat" section [*sic, in Appendix B*] for a discussion of the PCEs for Quino). Occupied Quino habitat is defined as contiguous suitable habitat containing the PCEs within 2 kilometers of a known Quino occurrence (habitat-based population distribution) (73 FR 3328).

   Impacts to Quino habitat will be determined by the amount of suitable/unoccupied habitat and/or occupied habitat that is proposed to be impacted indirectly and directly. Restoration of impacted habitat will be conducted in areas with appropriate topographical and biological features to be determined by the USFWS and BLM. The details of the restoration shall be based on Appendix II of the *Recovery Plan for the Quino Checkerspot Butterfly* (USFWS 2003) and described in a plan to be reviewed and approved by the USFWS. The restoration plan shall include, but not be limited to: (1) larval host plants (local stock, if possible) to be planted, (2) nectar resources, (3) irrigation needs and/or other establishment procedures, (4) timeline for implementation, (5) success criteria, (6) contingency measures for success criteria that are not met, (7) weed control measures, (8) monitoring program, and (9) implementation schedule. The restoration plan will be prepared and submitted to the USFWS prior to commencement of ground disturbance associated with the proposed project. The proposed project will not commence until the restoration begins. The restoration plan actions will be completed no later than completion of project construction. Success criteria will be modeled on undisturbed native plant communities in the vicinity of the proposed project and sites within the area known to be occupied by Quino.

3. BLM will continue to cooperate with the County of San Diego to develop the San Diego ECMSCP in accordance with the Memorandum of Understanding between the BLM and the County of San Diego (signed by BLM on April 23, 2007). If public lands identified as available for disposal in the RMP are also identified in the MSCP as important components of a reserve system, disposal of those lands shall only be in a manner consistent with the conservation goals and objectives of the MSCP.

4. To minimize effects to the least Bell's vireo, activities proposed (i.e., vegetation management) within riparian areas that may affect the species shall avoid the breeding season. The breeding season extends from mid-March to mid- or late-September.

5. Vegetation management plans to control tamarisk infestations shall be staggered and configured to allow for passerine nesting to continue in the same area, while native vegetation is given the opportunity to replace the tamarisk.

6. To avoid disease transmission, domestic sheep and/or goat grazing will be allowed as a vegetation management prescription to reduce fuel levels only in areas greater than 9 miles from Peninsular bighorn sheep critical habitat.

7. The Fire Management Plan will include all known locations of listed species and suitable habitat within the Planning Area. The Fire Management Plan and any resulting Burned Area Emergency Response (BAER) Plans after wildfire will incorporate measures to avoid and minimize impacts to listed species to the extent feasible, and include offsetting measures to restore habitat conditions adversely affected by wildfire, suppression, and BAER activities. Restoration will only include the use of local native plants. The Fire Management and BAER Plans will be prepared in consultation with the USFWS.

2.7.2 Federally Listed Species and Designated Critical Habitat

Critical habitat for Peninsular bighorn sheep, Quino checkerspot butterfly, Laguna Mountains skipper, and southwestern willow flycatcher are depicted on Map 2.

2.7.2.1 Peninsular Bighorn Sheep (Endangered and State Threatened; *Ovis canadensis cremnobates*)

The overall recovery objective for the Peninsular bighorn sheep identified in the *Recovery Plan for the Bighorn Sheep in the Peninsular Ranges, California* (USFWS 2000) is to secure and manage habitat in order to alleviate threats so that population levels will increase to the point that this species may be reclassified to threatened status, and ultimately delisted. BLM will implement applicable recovery objectives consistent with the recovery plan and any future revisions.

The following goals and objectives and management actions are specific to Peninsular bighorn sheep. The itemized list in Section 2.7.1 for all special status species Planning Areawide also applies and should be implemented for this species as well.

Goals and Objectives

PBS-01 Promote population increase and protect habitat.

PBS-02 Provide for habitat connectivity between BLM-administered lands in the Planning Area and adjacent federal and state-administered lands.

PBS-03 Ensure no adverse modification of critical habitat.

Management Actions

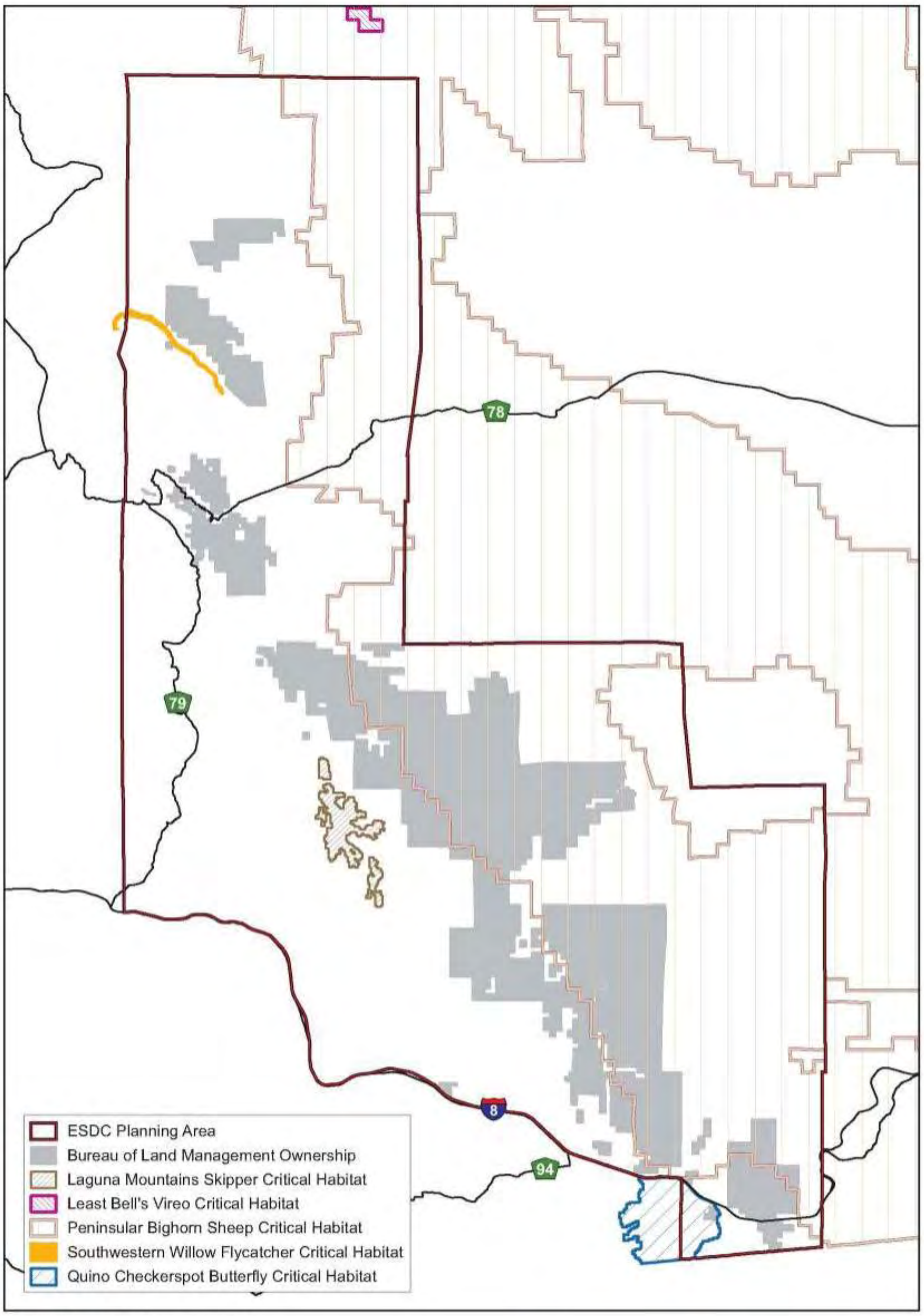
PBS-04 Minimize effects resulting from human-caused disturbances.

PBS-05 Maintain existing water sources.

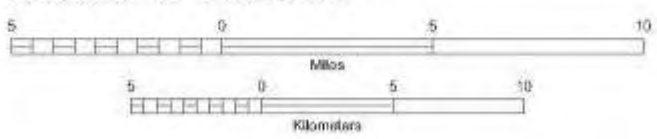
PBS-06 Remove tamarisk from the springs and seeps within the Peninsular bighorn sheep habitat, to the extent practicable, using a variety of methods.

PBS-07 Prohibit domestic sheep and goat grazing within nine miles from Peninsular bighorn sheep-occupied habitat to avoid disease transmission.

PBS-08 Require the use of local native plants for all restoration and landscaping projects to prevent sickness or death of bighorn sheep from toxic landscape plants.



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION



U.S. DEPARTMENT OF THE INTERIOR
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El Centro Field Office
October 2008

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MAP 2: Critical Habitat

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PBS-09 For locatable minerals, require mining plans of operation in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat. Any activity located within critical habitat will require Section 7 consultation with USFWS.

PBS-10 Any surface disturbance associated with locatable mineral casual use activity in designated critical habitat causing more than negligible disturbance will require a notice for review or a plan of operations for approval.

PBS-11 Critical habitat is closed to leasable mineral entry.

PBS-12 Critical habitat is closed to salable mineral entry.

PBS-13 Critical habitat lands are exclusion areas for all types of Land Use Authorizations including renewable energy (geothermal development is regulated by the land use decisions for leasable mineral resources).

2.7.2.2 Least Bell's Vireo (Endangered, State Endangered; *Vireo bellii pusillus*)

The least Bell's vireo is known to occur within the Carrizo Gorge Wilderness Area, and this species does breed within and migrate through the BLM-administered lands within the Planning Area (Wells and Kus 2001).

The following goals and objectives and management actions are specific to least Bell's vireo. The itemized list in Section 2.7.1 for all special status species Planning Area-wide also applies and should be implemented for this species as well.

Goals and Objectives

LBV-01 Protect and maintain existing populations.

LBV-02 Ensure that riparian areas are maintained as suitable for least Bell's vireo.

Management Actions

LBV-03 Remove tamarisk from riparian areas outside of the breeding season (April 10–August 31). Refer to the vegetation management section above for discussion of removal method alternatives.

LBV-04 Authorize brown-headed cowbird trapping by adjacent land managers or other agencies on a case-by-case basis.

LBV-05 For locatable minerals, require mining plans of operation in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat.

2.7.2.3 Southwestern Willow Flycatcher (Endangered, State Endangered; *Empidonax trailii extimus*)

The overall recovery objective for the southwestern willow flycatcher identified in the *Southwestern Willow Flycatcher Final Recovery Plan* (USFWS 2002a) is to attain a population level and an amount and distribution of habitat sufficient to provide for the long-term persistence of several populations throughout the species' range that are able to continue to reproduce and disperse, even in the face of local losses (e.g., extirpation). BLM would implement applicable recovery objectives consistent with the recovery plan and any future revisions.

The Planning Area is within the Coastal California and Basin & Mojave Recovery Units and the San Diego and Salton Management Units (MU), as identified in the recovery plan. Specific river reaches within the Management Unit where recovery efforts should be focused are identified in the recovery plan. Substantial recovery value exists in areas of currently or potentially suitable habitat. Currently, the only known site within the Planning Area that supports a nesting population of this species is the San Felipe Creek area which is also designated critical habitat; however, this portion of San Felipe Creek is not located on any BLM-administered public lands.

The following goals and objectives and management actions are specific to southwestern willow flycatcher. The itemized list in Section 2.7.1 for all special status species Planning Areawide also applies and should be implemented for this species as well.

Goals and Objectives

SWF-01 Manage riparian areas for a suite of habitat features that may support the transitory use by this species.

Management Actions

SWF-02 Protect known occupied sites or potential southwestern willow flycatcher habitat through acquisition, easements, partnerships, and other means.

SWF-03 Manage areas adjacent to critical habitat in a way that is compatible with the conservation goals identified in both the recovery plan and the critical habitat designation.

SWF-04 Avoid, minimize, and/or mitigate to the extent possible disturbance in potential habitat during the spring (May 1–June 21) and fall (August 15–October 7) migration seasons.

SWF-05 For locatable minerals, require mining plans of operation in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat.

2.7.2.4 Arroyo Toad (Endangered; *Bufo californicus*)

The overall recovery objective for the arroyo toad identified in the *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan* (USFWS 1999) is to “downlist to threatened status, then delist.”

Critical habitat has been designated and does not occur on any BLM-administered public lands within the Planning Area (USFWS 2005b). The nearest known location is in Pine Valley, which is eight miles from BLM-administered lands in the Planning Area. The species has not been identified in surveys conducted within the Planning Area to date, and there is little to no habitat present.

The following goals and objectives and management actions are specific to arroyo toad. The itemized list in Section 2.7.1 for all special status species Planning Area-wide also apply and should be implemented for this species as well.

Goals and Objectives

ART-01 Manage riparian areas for a suite of habitat features that may support use by this species, if it were to occur within the Planning Area.

Management Actions

ART-02 Protect potential arroyo toad habitat through acquisition, easements, partnerships, and other means.

2.7.2.5 Quino Checkerspot Butterfly (Endangered; *Euphydryas editha quino*)

The overall recovery objective for the quino checkerspot butterfly identified in the *Recovery Plan for the Quino Checkerspot Butterfly* (USFWS 2003) is to reclassify the species from *endangered* to *threatened* and to ensure the species' long term conservation. A portion of the critical habitat identified occurs within the southern portion of the Planning Area; however, this area overlaps only one small parcel of BLM-administered public land on Round Mountain. An historic 1944 sighting of this species occurs in the Table Mountain area and several sightings have been made in 2006 within the critical habitat area in the Planning Area (State of California 2006a). Four quino checkerspot butterfly studies have been conducted on BLM-administered lands within the Planning Area in the last two years, including a habitat assessment of BLM lands within the quino recovery area and two adult flight season surveys (Osbourne 2005 and 2006; DOI BLM 2005d, Tierra Environmental Services 2006). Suitable habitat was identified but no quino checkerspot butterflies were detected.

The following goals and objectives and management actions are specific to quino checkerspot butterfly. The itemized list in Section 2.7.1 for all special status species Planning Area-wide also applies and should be implemented for this species as well.

Goals and Objectives

QCB-01 Protect and maintain habitat suitable to support quino checkerspot butterfly within the critical habitat and quino checkerspot butterfly recovery area.

Management Actions

QCB-02 Prevent non-native invasive species infestations following fire events. See the Wildland Fire Management section for more details.

QCB-03 Designate BLM-administered lands within the Planning Area as limited or closed to OHV use. Provide appropriate signage to keep OHV and other public access on assigned routes. See the transportation/recreation sections for more details.

QCB-04 For locatable minerals, require mining plans of operation in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat. Any activity located within critical habitat will require Section 7 consultation with USFWS.

QCB-05 Any surface disturbance associated with locatable mineral casual use activity in designated critical habitat causing more than negligible disturbance will require a notice for review or a plan of operations for approval.

QCB-06 Critical habitat is closed to leasable mineral entry.

QCB-07 Critical habitat is closed to salable mineral entry.

QCB-08 Critical habitat lands are exclusion areas for all types of Land Use Authorizations including renewable energy (geothermal development is regulated by the land use decisions for leasable mineral resources).

2.7.2.6 Laguna Mountains Skipper (Endangered; *Pyrgus ruralis laguna*)

The Laguna Mountains skipper occurs within the Cleveland National Forest in the vicinity of the BLM-administered public lands in the Planning Area. USFWS has designated critical habitat that includes areas within USFS land in the vicinity of Sunrise Highway, but does not encompass any BLM-administered lands within the Planning Area (USFWS 2006). A recovery plan for this species has not yet been prepared. This species is not currently known from BLM-administered lands within the Planning Area, and the BLM lands are not known to support the larval host plants (*Horkelia clevelandii*) or the preferred montane meadow habitat. A habitat ranking model performed by USFWS (2007), however, does indicate that there is some potential for this species to occur on BLM-administered lands within the Planning Area, along the western fringe of the Sawtooth Wilderness, Sawtooth Wilderness Study Area (WSA) A, and lands within the Oriflamme Canyon region. One isolated BLM parcel of land, approximately 42 acres just

west of the Oriflamme area, is ranked much higher in the model and appears to be more topographically connected to the complex that currently supports the species. This isolated parcel appears to have the highest probability of supporting this species of all BLM-administered lands within the Planning Area.

The following goals and objectives and management actions are specific to the Laguna Mountains skipper. The itemized list in Section 2.7.1 for all special status species Planning Area-wide also applies and should be implemented for this species as well.

Goals and Objectives

LMS-01 Manage areas of suitable habitat for a suite of habitat features that may support future use by this species.

Management Actions

LMS-02 Protect potential habitat through acquisition, easements, partnerships, and other means.

LMS-03 Maintain management of areas adjacent to critical habitat (once finalized) compatible with the conservation goals of those areas.

LMS-04 For locatable minerals, require mining plans of operation in lands or waters known to contain federally threatened or endangered species or proposed or designated critical habitat. Any activity located within critical habitat will require Section 7 consultation with USFWS.

2.7.3 State-Listed Species

2.7.3.1 Barefoot Gecko (Threatened; *Coleonyx switaki*)

Barefoot gecko was listed as threatened in 1980 (CDFG 2005). Barefoot geckos are rare nocturnal animals that spend the majority of their lives wedged under the cracks of boulders and rocks; thus little is known about the status, range, or abundance of this species. The BLM would adopt and implement, as practicable, any conservation strategies outlined by the CDFG for this species. Overall, the conservation objective is to

provide habitat capable of maintaining stable or increasing trends in abundance of barefoot gecko.

The following goals and objectives and management actions are specific to barefoot gecko. The itemized list in Section 2.7.1 for all special status species Planning Area-wide should also be implemented, where it applies to this species.

Goals and Objectives

BFG-01 Maintain suitable habitat of sufficient quality and quantity with adequate patch sizes that may support geckos.

Management Actions

BFG-02 Analyze impacts to the barefoot gecko for all projects occurring within occupied barefoot gecko habitat and require that projects mitigate the impacts accordingly.

2.7.3.2 Swainson's Hawk (Threatened; *Buteo swainsoni*)

Swainson's hawk was listed as threatened in 1983 (CDFG 2005). This species generally breeds in the Central Valley of California and winters in Mexico. This species primarily occurs within the Planning Area as migrants during the fall and spring.

The following goals and objectives and management actions are specific to Swainson's hawk. The itemized list in Section 2.7.1 for all special status species Planning Area-wide should also be implemented, where it applies to this species.

Goals and Objectives

SWH-01 Maintain migratory corridors and stopover habitat of sufficient quality and quantity to facilitate use by Swainson's hawks.

Management Actions

SWH-02 Analyze project impacts to this species and require that projects mitigate the impacts accordingly.

2.7.3.3 Laguna Mountains Aster (State Rare; *Machaeranthera asteroids* var. *lagunensis*)

The Laguna Mountains aster was listed as state rare in 1979. The overall recovery objective for the Laguna Mountains aster is to protect sufficient habitat in the Planning Area in order to preserve lands capable of supporting populations of this plant. BLM would implement applicable recovery objectives consistent with an applicable California State recovery plan or strategy and any future revisions of that plan or strategy.

The following goals and objectives and management actions are specific to Laguna Mountains aster. The itemized list in Section 2.7.1 for all special status species Planning Area-wide should also be implemented, where they apply for this species.

Goals and Objectives

LMA-01 Protect known populations of the species.

Management Actions

LMA-02 Prohibit personal or commercial collection of the species (except for Native American collection).

LMA-03 Require permits for research collection.

2.7.4 BLM Sensitive Species

The following goals and objectives and management actions are specific to BLM sensitive species. The itemized list in Section 2.7.1 for all special status species Planning Area-wide should also be implemented, where they apply.

Goals and Objectives

BSS-01 Protect habitats of sensitive plant and wildlife species on BLM-administered lands in order to keep the species from becoming listed under the ESA.

Management Actions

BSS-02 Allow collection of seeds of native plants to be used in rehabilitation and restoration activities. Seeds must be collected in accordance with seed zones or breeding zones for native plants.

2.8 Wildland Fire Management

2.8.1 Goals and Objectives

WFM-01 Protect human life (both firefighters and public) and communities, property, and the natural resources on which they depend. Firefighter and public safety are the highest priority in all fire management activities.

WFM-02 Reduce hazardous fuels around communities at risk within the Wildland Urban Interface (WUI) using mechanical, manual, biological, and prescribed fire treatments, where applicable.

WFM-03 Appropriate management response (AMR) for resource benefits will range from full suppression to the appropriate strategy to safely contain and control wildland fires in the Planning Area.

WFM-04 Maintain natural biological processes through the use of fire as a natural disturbance.

2.8.2 Management Actions

WFM-05 Implement fuels reduction programs where needed, with wildland fuels decreased and maintained at a manageable level, creating conditions conducive to safe, efficient, and effective firefighting. Fire and fuels management treatments may include fire suppression, prescribed fire, and non-fire treatments (manual, chemical, mechanical, or biological treatments).

WFM-06 Identify, prioritize, and plan fuels reduction projects using a uniform system for determining wildland fire risk in WUI (e.g., Risk Assessment and Mitigation Strategy).

WFM-07 Use prescribed fire to protect values-at-risk (life and property) and to maintain or enhance the ecosystem health.

WFM-08 Identify AMR-related goals, objectives, and constraints for each fire management unit.

WFM-09 Identify areas where prescribed fire use is appropriate to maintain or restore desirable plant communities. Prescribed fire activities will comply with federal and state standards for smoke and air quality management.

WFM-10 Identify, prioritize, and implement an estimated annual average of 1,000 acres per year of fuel management over the life of the plan. Fuel treatments to reduce wildland fire risk will focus on areas in which altered fire regimes and fire return intervals have resulted in increased risk to natural resources and those WUI areas and shrublands characterized as Fire Regime Condition Class II and III.

WFM-11 Identify and implement post-fire stabilization and rehabilitation actions in burned areas to restore a functional landscape to meet the natural resource management objectives.

WFM-12 Include wildfire hazard mitigation strategies in the Fire Management Plan for the Planning Area by identifying appropriate areas for fire use (prescribed and/or wildland) and mechanical, biological, or chemical treatments to reduce hazardous fuels to minimize the adverse effects of uncharacteristic wildland fires and meet resource objectives. The Fire Management Plan will also identify areas for exclusion from fire (through fire suppression), chemical, mechanical, and/or biological treatments.

WFM-13 In WAs and WSAs, when wildland fire suppression is required, minimum impact suppression tactics identified in the Interagency Standards for Fire and Aviation Operations will be applied.

WFM-14 Conduct fire management activities along the Pacific Crest National Scenic Trail (NST) in a manner that will avoid or minimize adverse impacts to existing resources and values identified in the legislative designation of the trails. For ACECs, the desired conditions and management prescriptions will be considered in implementing fire management activities (see ACEC section of this chapter, 2.12.4).

WFM-15 Wildland fire suppression activities will utilize methods with lesser ground disturbance to minimize potential adverse impacts on special status species, critical habitat, desired plant communities, and cultural resources. Provide an on-site resource advisor to consult with the wildland fire responders on the location of sensitive resources and provide input to minimize impacts to those resources. When feasible, use of fire suppression techniques that minimize ground-disturbing impacts is desirable, however, reduction of total acreage lost to fire, especially in critical habitat, through the use of mobile attack with engines, fireline construction with bulldozers, aerial fire retardant, or other necessary techniques is appropriate and requested.

WFM-16 Currently under the Operating Plan, use of mechanized equipment is allowable in Special Designations (e.g., WAs, WSAs, ACECs) subject to the following: 1) dozer use in WAs and WSAs require the approval of the BLM State Director, and 2) dozer use in ACECs is subject to approval by the BLM Field Manager.

WFM-17 Use of fire retardants or chemicals adjacent to waterways will be in accordance with the *Environmental Guidelines for Delivery of Retardant or Foam near Waterways* (Interagency Standards for Fire and Aviation Operations).

WFM-18 Fuels treatment will be conducted around campgrounds, administrative sites, and other areas of public interest, providing for public safety and reducing the risk of improvement loss.

WFM-19 The entire Planning Area will be identified as non-wildland fire use land. This is based on the desired future condition of vegetation communities, ecological conditions, and ecological risks. The identification of lands where wildland fire use is not appropriate is determined by contrasting current and historical conditions and ecological risks associated with any changes. The condition class concept helps describe alterations in key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. Non-wildland fire use land areas are those where mitigation and suppression are required to prevent direct threats to life or property. It includes areas where fire historically never played a large role in the development and maintenance of the ecosystem and some areas where fire return intervals were very long. It also includes areas (including some WUI areas) where an unplanned ignition could have negative effects to life and property, unless some form of mitigation takes place. Mitigation may include mechanical, biological, chemical, or prescribed fire means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires, and meet resource objectives.

WFM-20 Proposed activities related to prescribed fire projects will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.9 Cultural Resource Management

2.9.1 Goals and Objectives

CRM-01 Identify, preserve, and protect significant cultural resources, districts and landscapes and ensure that they are available for appropriate uses by present and future generations.

CRM-02 Identify priority geographic areas for new field inventory, based upon a probability of unrecorded significant resources.

CRM-03 Enhance public understanding of and appreciation for cultural resources through educational outreach and heritage tourism opportunities.

CRM-04 Maintain viewsheds of important cultural resources whose settings contribute significantly to their scientific, public, traditional, or conservation values.

CRM-05 Provide and encourage research opportunities on cultural resources that will contribute to the understanding of the ways humans have used and influenced natural systems and processes.

CRM-06 Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses.

CRM-07 Reduce or eliminate indirect impacts from land uses on cultural resources.

2.9.2 Management Actions

CRM-08 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

CRM-09 Manage cultural resources in accordance with existing laws, regulations, EOs, and SHPO protocol agreements (as amended). Management actions on public lands—and private land projects that are federally funded, permitted or assisted—must comply with Sections 106 and 110 of the NHPA, which include consultation with Native American representatives and the SHPO, when appropriate.

CRM-10 Conform to the NHPA, Federal Regulations, and the California State Protocol Amendment for identifying and treating properties affected by grazing.

CRM-11 Reduce hazardous fuels or provide effective mitigation around archaeological and cultural sites that are vulnerable to wildland or prescribed fire. Conform to the California State Protocol Amendment for identification and protection of cultural resources from prescribed fire effects.

CRM-12 Maintain current cultural resource data in a geographic information system (GIS) format. The inventory will include a prioritized list (high/medium/low sensitivity) of areas for future inventory—based on sensitivity and the likelihood of significant, unrecorded sites. Inventory strategies for un-surveyed areas will be continually refined.

CRM-13 Work cooperatively with the California SHPO on data sharing and information management, and the promotion and enhancement of public education, including Archaeological Awareness Week/Historic Preservation Month, outreach, and stewardship programs.

CRM-14 Provide interpretive (and/or other educational opportunities) at selected cultural sites. Work with communities, groups, interested individuals, and other agencies to enhance public understanding, appreciation, and enjoyment of cultural resources. Maintain, stabilize, or reconstruct selected sites where necessary to preserve site integrity.

CRM-15 Implement protection measures to stop, limit, or repair damage to sites. A variety of protection measures, described in BLM *Manual 8140*, may be used to protect the integrity of sites at risk such as signing, fencing or barriers, trash removal, target shooting closures, erosion control, backfilling, repairing, shoring up, or stabilizing structures, restricting uses and access, and closures. Structural and material stabilization techniques may use chemical, mechanical, or structural elements to retard deterioration to cultural resources.

CRM-16 Where feasible, acquire properties adjacent to public lands that contain significant cultural resources including, but not limited to, those properties eligible for inclusion on the National Register of Historic Places (NRHP).

CRM-17 Promote the use of appropriate cultural resource sites for heritage tourism and economic benefit, and cooperate with tribes, other agencies, and organizations on heritage tourism projects that benefit local economies.

CRM-18 Manage spiritually significant and traditional cultural properties in consultation with Native American tribes, accommodate tribal access to spiritually significant and traditional cultural properties, and prevent physical damage or intrusions that might impede their use by religious practitioners. The locations of spiritually significant and traditional cultural properties and other places of traditional or religious importance to Native American tribes will be kept confidential to the extent allowed by law.

CRM-19 Coordinate with Native Americans to manage harvesting areas for the collection of medicinal herbs, ceremonial herbs, other vegetation, and/or minerals for traditional or ceremonial use. See the Vegetative Use Authorization Section for more information (see Section 2.5.4).

CRM-20 Evaluate and allocate cultural properties (including cultural landscapes) to one of six uses as outlined in BLM Information Bulletin (BLM-IB) No. 2002-101 *Cultural Resource Considerations in Resource Management Plans.*

CRM-21 Provide support to the on-site resource advisor on a wildland fire to identify cultural resources and provide recommendations to avoid or minimize impact to the resource.

2.9.3 Cultural Use Allocation

CUA-01 Table 2 depicts typical use allocations for the various types of cultural resources found within the Planning Area. Scientific use is defined as resources preserved until research potential is realized; conservation for future use is defined as resources preserved until conditions for use are met; traditional use is defined as resources designated for long-term preservation; public use is defined as resources designated for long-term preservation and on-site interpretation; experimental use is defined as resources that will be protected until used; and discharged from management is defined as resources with no use after recordation and not to be preserved. No properties are allocated to the discharged from management category at this time. Sites within the Planning Area will typically be allocated to one or more of the use categories presented in the table, although specific allocations of individual sites may be reevaluated and revised based on changing circumstances or if any new or existing information regarding site attributes comes to light such as site access, physical setting, site complexity, Native American consultation,

TABLE 2
USE ALLOCATIONS FOR CULTURAL PROPERTIES

Cultural Site Attributes	Scientific Use	Public Use	Traditional Use	Conservation for Future Use	Experimental Use
Rock art		X	X	X	
Human remains			X		
Bedrock milling with or without artifacts	X	X		X	
Hearth with or without artifacts	X				
House pit/Rock shelter	X		X	X	
Cleared circle/Rock ring	X		X		
Cairn/rock alignment	X		X	X	
Historic	X	X			
All other cultural properties, both known and projected, to occur throughout the Planning Area	X			X	

impacts to the site, etc. In addition, all sites within ACECs, WAs and WSAs will be allocated to the conservation for future use and traditional use categories and will be managed appropriately for that class.

2.10 Paleontological Resource Management

PRM-01 All BLM-administered lands within the Planning Area are classified as Class 1 through Class 3, based on their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.

Class 1 (low sensitivity). Igneous and metamorphic geologic units or units with highly disturbed preservational environments not likely to contain recognizable fossil remains. Management concern is negligible for Class 1 resources, and mitigation requirements are rare.

Class 2 (moderate sensitivity). Sedimentary geologic units not likely to contain vertebrate fossils or significant non-vertebrate fossils. Management concern is low for Class 2 resources, and mitigation requirements are not likely.

Class 3 (moderate sensitivity). Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence or units of unknown fossil potential. Management concern may extend across the entire range of management. Ground-disturbing activities require sufficient mitigation to determine whether significant resources occur in the area of the proposed action.

2.10.1 Goals and Objectives

PRM-02 Protect and conserve significant paleontological resources as they are discovered on public lands.

PRM-03 Manage paleontological resources in ways that prioritize research needs, facilitate educational and recreational needs, and protect important sites.

PRM-04 Develop specific objectives and management actions for fossil localities, when paleontological resources are discovered in the Planning Area.

2.10.2 Management Actions

PRM-05 Evaluate paleontological resources as they are discovered, considering their scientific, educational, and recreational values. Identify appropriate objectives, management actions, and allowable uses for fossil localities as they are found.

PRM-06 Restrict the collection of all vertebrate fossils and noteworthy invertebrate and plant fossils to legitimate scientific or educational uses in accordance with permitting procedures.

PRM-07 Allow recreational collecting of common invertebrate and plant fossils, in accordance with 43 CFR 8365.1-5.

PRM-08 Should paleontological resources be encountered during project ground-disturbing activities, work will cease in the area of the discovery, and the BLM will be notified immediately. Work may not resume, until written authorization to proceed is issued by BLM.

PRM-09 In Class 3 areas, a field survey by a qualified paleontologist may be required. Management prescriptions for resource preservation and conservation through controlled access or special management designation will be considered. Surface-disturbing activities may require assessment in Class 2 areas to determine further courses of action. Assessment or mitigation in Class 1 areas will not be required except in very rare circumstances.

2.11 Visual Resource Management

In accordance with the BLM *Land Use Planning Handbook* (H-1601-1), the BLM is required to designate VRM Classes for all areas of BLM land, based on an inventory of visual resources and management considerations for other land uses. The original VRM Inventory in the existing Management Framework Plan for Eastern San Diego County was completed in 1981 by BLM staff. Weaknesses were identified in the original inventory necessitating the completion of a new inventory based on new information and cultural modifications to the landscape. The new inventory was updated as part of the current land use planning effort. The BLM *Handbook on Visual Resource Management* (BLM VRM Manual 8410) was consulted during the preparation of the Eastern San Diego County PRMP/FEIS. Specifically, the Handbook guidance regarding scenic quality (i.e. visual appeal), sensitivity level (i.e. measure of public concern), and distance zones (i.e. visibility from travel routes or observation points) were carefully considered and utilized.

Visual Resource Inventory Classes were identified based on these three key elements (scenic quality, sensitivity level, and distance zones) of the BLM VRM process. Certain locations in the Planning Area have received levels of use that have led to significant cultural modification to the vegetation and surface area resulting in an adjustment to the scenic quality rating. This is particularly true in areas of distinctly high off-highway vehicle (OHV) use, such as the OHV use area on the west side of McCain Valley Road. Here, the increase in "cultural modification", coupled with the associated decrease in vegetation and alteration of the natural landform has resulted in Scenic Quality Rating of Class IV in the immediate vicinity of the campgrounds and staging areas and Scenic Quality Rating of Class III in the surrounding area, which in turn resulted in an adjustment of the Visual Resource Inventory Class to III.

In accordance with the BLM VRM Handbook, Visual Inventory Classes are informational in nature; they inform rather than establish management direction. During the planning process, management considerations and public concerns factored into the final proposed VRM Classes, based upon the various management decisions of the PRMP/FEIS. A range of VRM Classes was identified in the alternatives for the RMP.

VRM Class designations for the approved RMP are presented on Map 3.

2.11.1 Goals and Objectives

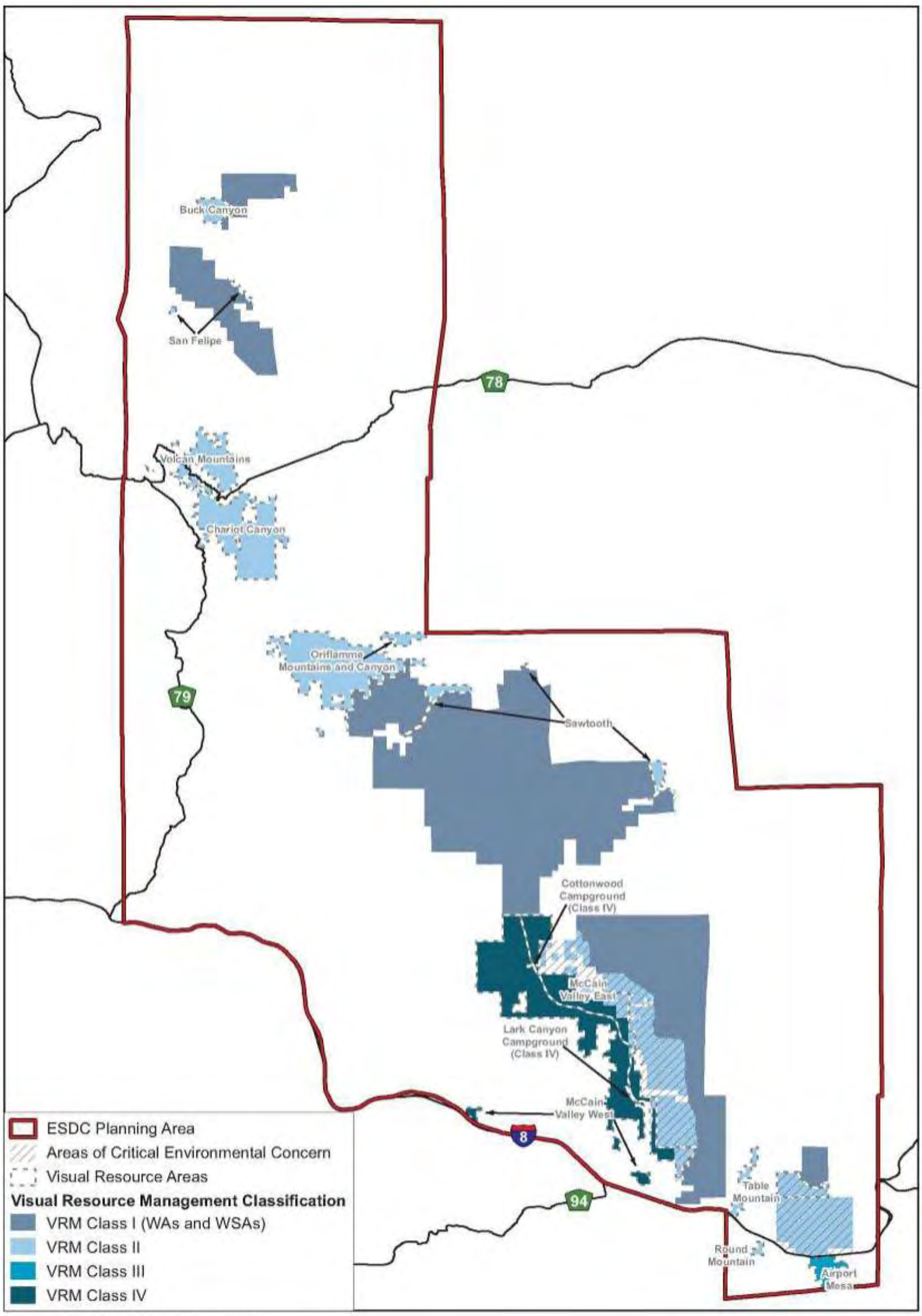
VRM-01 The RMP/ROD assigns VRM Classes ranging from Class I to IV to all BLM lands in the planning area. All future projects and actions will adhere to the objectives of the applicable VRM Classes:

Class I. To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II. To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.

Class III. To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

Class IV. To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.



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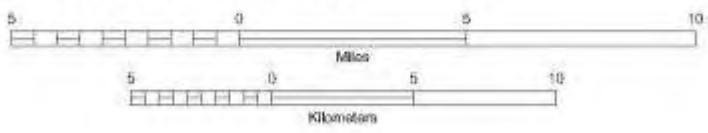

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MAP 3: Visual Resource Management

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2.11.2 Management Actions

VRM-02 Incorporate design considerations to minimize potential impacts to public lands' visual values into all surface disturbing activities, regardless of size. Emphasis will be on BLM providing input during the initial planning and design phase to minimize costly redesign and mitigation at a later time.

VRM-03 Evaluate proposed surface-disturbing projects from Key Observation Points (KOPs) for the following factors: distance (between project and KOPs), angle of observation, length of time the proposed project will be in view, relative size or scale, season of use, light conditions, recovery time, spatial relationships, atmospheric conditions, and motion.

VRM-04 Use visual resource design techniques and best management practices (see Appendix D which describes the Typical Management Actions and BMPs) to mitigate the potential for short- and long-term visual impacts from other uses and activities.

VRM-05 Where practicable, in Class I and Class II areas that have existing disturbance areas that are frequently viewed from KOPs, feather the edge lines between disturbed and undisturbed areas to minimize the visual contrast and create a more natural appearance.

VRM-06 VRM Class designations are shown in Table 3.

TABLE 3
VRM CLASS DESIGNATIONS

VRM Class	Acres[1,2]
I (acres) [1]	61,908
II (acres)[2]	28,033
III (acres)	693
IV (acres)	12,236
TOTAL[1]	102,869

[1] Acreages calculated for use in this table were obtained using GIS data solely, whereas the figures in the PRMP/FEIS also used published acreages.

[2] Acres of ACECs excludes the private in-holdings located within the ACECs, as BLM's land use decisions apply only to BLM-administered lands within the Planning Area and do not apply to these private lands.

VRM-07 Table 4 describes in detail VRM Class designations for specific areas.

TABLE 4
ACRES OF VRM CLASSES I–IV BY AREA

Name or Description of Land Area	Acres[1,2]
Class I	
WAs	48,333
WSAs	13,575
VRM Class I Total:	61,908
Class II	
ACECs[1]	12,588
San Felipe	106
Sawtooth	849
Buck Canyon (non-WSA lands)	621
Volcan Mts.	1,732
Chariot Canyon	5,338
Oriflamme Mts. & Canyon	6,253
McCain Valley West	0
McCain Valley East (non-ACEC & non-WSA lands)	0
Cottonwood and Lark Canyon Campgrounds	0
Table Mountain (non-ACEC & non-WSA lands)	430
Airport Mesa	0
Round Mountain	116
VRM Class II Total:	28,033
Class III	
Cottonwood and Lark Canyon Campgrounds	0
McCain Valley West	0
Airport Mesa	693
VRM Class III Total:	693
Class IV	
Buck Canyon (non-WSA lands)	0
Volcan Mts.	0
Chariot Canyon	0
Oriflamme Mts. & Canyon	0
McCain Valley West	8,560
McCain Valley East (non-ACEC & non-WSA lands)	3,635
Round Mountain	0
Cottonwood and Lark Canyon Campgrounds	41
Airport Mesa	0
VRM Class IV Total:	12,236

[1] Acreages calculated for use in this table were obtained using GIS data solely, whereas the figures in the PRMP/FEIS also used published acreages.

[2] Acres of ACECs excludes the private in-holdings located within the ACECs, as BLM's land use decisions apply only to BLM-administered lands within the Planning Area and do not apply to these private lands.

2.12 Special Designations

SDA-01 Map 4 illustrates the boundaries of all Special Designations areas within the Planning Area. Table 5 provides a breakdown of acreages of each of the special designations present within the Planning Area.

TABLE 5
SPECIAL DESIGNATIONS

Wilderness Areas	Acres
Carrizo Gorge	14,735
Sawtooth Mountains	33,598
Wilderness Areas Total	**48,333**
Wilderness Study Areas	**Acres**
Table Mountain	1,018
Carrizo Gorge	1,012
Sawtooth Mountains "A"	3,883
Sawtooth Mountains "C"	600
San Felipe Hills	5,325
San Ysidro Mountain	2,125
Wilderness Study Areas Total	**13,963**
National Scenic Trail	**Miles**
Pacific Crest National Scenic Trail	15
National Scenic Trail Total	**15**
ACECs	**Acres**
In-Ko-Pah Mountains[1]	9,743
Table Mountain[1]	5,213
ACEC Total[1]	**14,956**

[1]Total acreages of ACECs include private in-holdings located within the boundaries of the ACECs. BLM's land use decisions and management actions only apply to BLM-administered lands within the ACEC.

2.12.1 Wilderness Areas

2.12.1.1 Goals and Objectives

DWA-01 Provide for the long-term protection and preservation of the area's wilderness character under the principle of non-degradation. The area's naturalness and untrammeled condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historic value will be managed so that they remain unimpaired.

DWA-02 Meet minimum requirements necessary for the administration of the area for the purpose of the Wilderness Act (including measures required in emergencies involving the health and safety of persons within the area).

DWA-03 Manage any newly designated WAs in accordance with the designation authority.

2.12.1.2 Management Actions

DWA-04 Continue to provide monitoring, signing, and restoration as necessary.

DWA-05 Proposed activities (e.g., surface-disturbing restoration activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

DWA-06 Expand access by improving staging areas and providing informational kiosks at wilderness trailheads

DWA-07 Acquire in-holdings from willing owners.

DWA-08 Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.

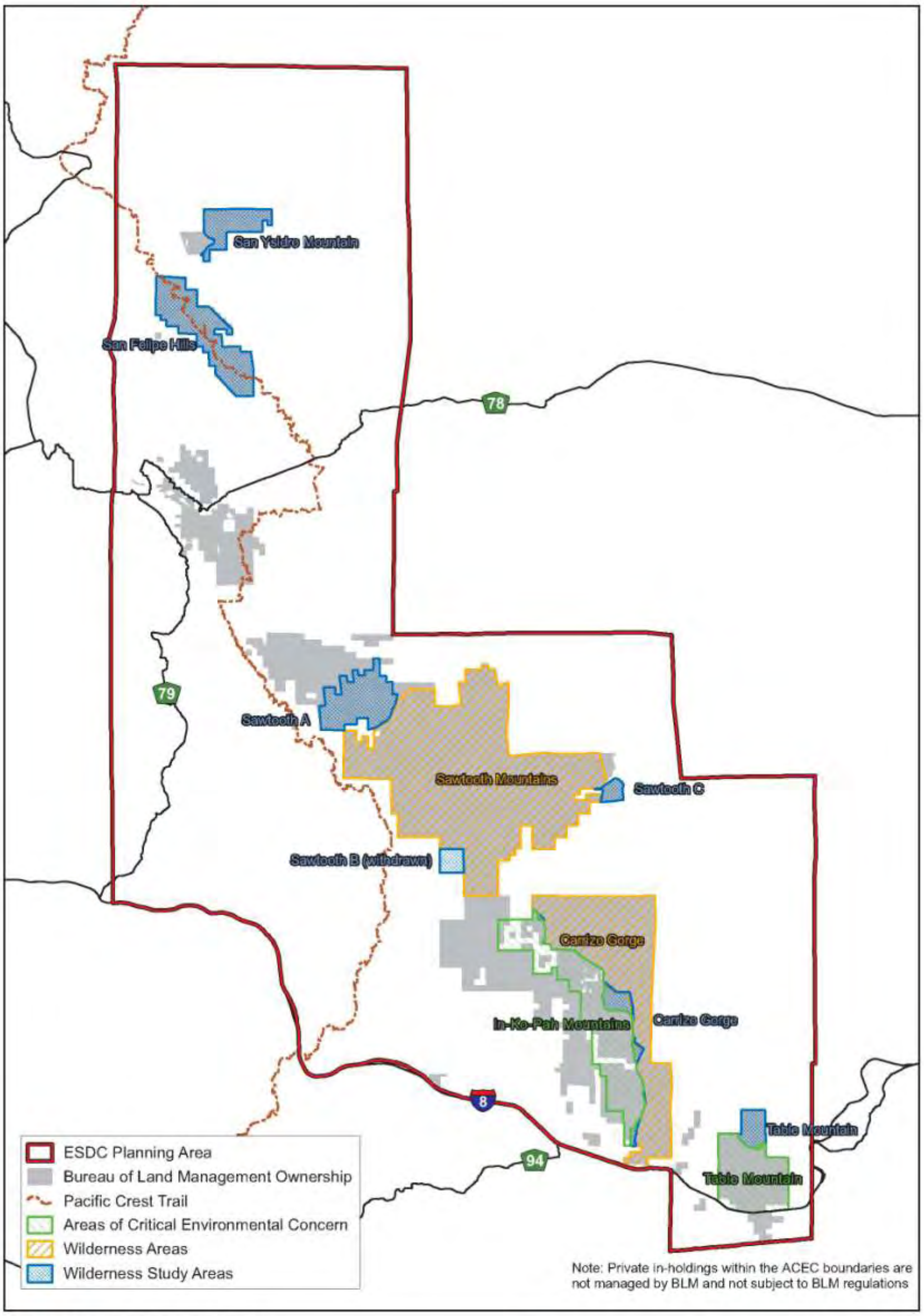
Some relevant management provisions provided for by law or policy for these areas are:

DWA-09 WAs are withdrawn from all forms of land entry including land use authorizations for commercial purposes, mineral entry, mineral leasing, and mineral sales.

DWA-10 No use of motor vehicles, motorized equipment or other form of mechanical transport is allowed.

DWA-11 No structure or installation within these areas is allowed.

DWA-12 Administrative structures (e.g., trail markers or informational kiosks) and use of vehicles and structures will be the minimum necessary for the administration of these areas.



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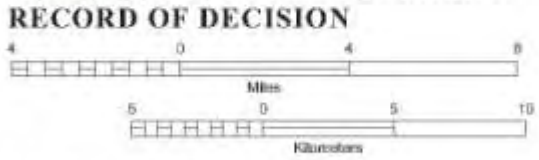

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MAP 4: Special Designations

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DWA-13 Prescribed fire may be used 1) to reintroduce or maintain the natural condition of a fire-dependent ecosystem, 2) to restore fire where past strict fire control measures had interfered with natural ecological processes, 3) where a primary value of a given wilderness will be perpetuated as a result of burning, or 4) where it will perpetuate threatened and endangered species (BLM Manual Section [MS]-8560.35).

DWA-14 For locatable minerals, a mining plan of operations will be required in any Special Designation in accordance with 43 CFR 3809 regulations.

2.12.2 Wilderness Study Areas

2.12.2.1 Goals and Objectives

WSA-01 To continue resource uses on lands designated as WSAs in a manner that does not impair the area's suitability for preservation as wilderness.

2.12.2.2 Management Actions

WSA-02 WSAs are exclusion areas for all types of Land Use Authorizations.

WSA-03 Improve staging areas and provide informational kiosks at trailheads to enhance public access.

WSA-04 Acquire in-holdings from willing owners.

WSA-05 Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.

Management provisions mandated by law or policy for these areas are:

WSA-06 WSAs will not be leased for oil and gas or geothermal extraction.

WSA-07 WSAs are closed to salable mineral entry.

WSA-08 Use of motor vehicles, motorized equipment, or other form of mechanical transport will not be allowed off boundary roads or newly constructed trails since 1976 within the WSA.

WSA-09 Monitor conditions and uses in and around WSAs to identify actions or uses that impair the wilderness values of the Planning Area.

WSA-10 Continue to provide monitoring, signing, and restoration as necessary.

WSA-11 Continue to manage WSA under BLM's interim management policy (IMP) until Congress designates as wilderness or releases from WSA status. When a WSA is released from WSA status by Congress, the lands will be managed in accordance with the release language. Manage any WSA designated as WA in accordance with the designation authority as stated in DWA-03 above.

WSA-12 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

WSA-13 For locatable minerals, require a mining plan of operations in any Special Designation in accordance with existing 43 CFR 3809 regulations.

2.12.3 National Scenic Trail (Pacific Crest National Scenic Trail)

The Pacific Crest NST is a congressionally designated trail for hiking and equestrian use. The trail was designated through the National Trails Systems Act (Public Law 90-43; October 2, 1968) and is managed in accordance with a comprehensive plan developed by the USFS (DOA 1982) and a subsequent Memorandum of Understanding (MOU) with the BLM. Approximately 68 miles of the Pacific Crest NST occur in the Planning Area, 15 miles of which occur on BLM-administered lands within Chariot and Rodriguez Canyons and the San Felipe Hills WSA. Motorized vehicles and mountain bikes are not allowed on the Pacific Crest NST (see Map 4 for the location of the Pacific Crest NST).

2.12.3.1 Goals and Objectives

NST-01 Continue to provide for the outdoor recreation needs of the public and promote the preservation of, public access to, travel within, and enjoyment of the open-air, outdoor, and scenic areas.

NST-02 Manage the Pacific Crest NST for educational, recreational, and scientific values.

2.12.3.2 Management Actions

NST-03 Continue to manage the Pacific Crest NST in accordance with the existing management plan and the existing MOU.

2.12.4 Areas of Critical Environmental Concern

Under this RMP/ROD, the In-Ko-Pah Mountains ACEC is adjusted to exclude the area that overlaps the Carrizo Gorge WA and Carrizo Gorge WSA, and expanded to include the adjacent Peninsular bighorn sheep critical habitat along the western and southern boundaries. The Table Mountain ACEC is expanded to include the land to the north between the northern boundary of the ACEC and the southern boundary of the Table Mountain WSA.

2.12.4.1 Goals and Objectives

ACC-01 ACECs will provide protection for relevant and important values including, but not limited to, special status species, wildlife, scenic, and significant cultural resources values.

2.12.4.2 Management Actions

ACC-02 Protection of relevant and important values will take precedence over authorized land uses.

ACC-03 The BLM will retain the ACECs in public ownership and seek to acquire non-federal lands and interests in lands within the ACECs from willing sellers by purchase, exchange, or donation. Future acquisitions of in-holdings and edge-holdings will be managed in accordance with the designated ACEC. See Land Tenure section for additional information.

ACC-04 Treatment for hazardous fuels and non-native invasive or pest species will be allowed.

ACC-05 All ACECs are closed to wood collection.

ACC-06 Allow traditional use by Native Americans consistent with Vegetative Use Authorization (see Section 2.5.4).

ACC-07 Monitor resources within the ACECs to detect change and prevent future deterioration.

ACC-08 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

ACC-09 Manage the Table Mountain and In-Ko-Pah Mountains ACECs for biological and cultural values.

ACC-10 Acquire in-holdings from willing owners.

ACC-11 Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.

ACC-12 ACECs are exclusion areas for renewable energy development. Geothermal development is regulated by the land use decisions for leasable mineral resources below.

ACC-13 ACECs are avoidance areas for all Land Use Authorizations other than renewable energy.

ACC-14 Recommend withdrawal of the In-Ko-Pah Mountains ACEC from locatable mineral entry.

ACC-15 Recommend withdrawal of the Table Mountain ACEC from locatable mineral entry.

ACC-16 ACECs are closed to leasable mineral entry, including geothermal mineral leasing.

ACC-17 ACECs are closed to salable mineral entry.

ACC-18 For locatable minerals, require a mining plan of operations in any Special Designation in accordance with existing 43 CFR 3809 Regulations.

2.13 Livestock Grazing Management

Based on application of grazing criteria presented in Appendix E, all BLM-administered lands within the Planning Area are unavailable for livestock grazing, except for vegetation management prescriptions.

2.13.1 Goals and Objectives

LGM-01 Maintain or improve healthy, sustainable rangeland ecosystems to meet approved Rangeland Health Standards (see Section 2.1) and produce a wide range of public values such as wildlife habitat, livestock forage, recreation opportunities, clean water, and functional watersheds.

2.13.2 Management Actions

LGM-02 Eliminate grazing within all allotments with the exception of vegetation management prescriptions.

LGM-03 Prohibit domestic sheep grazing within nine miles of Peninsular bighorn sheep critical habitat to avoid disease transmission.

2.14 Mineral Resource Management

2.14.1 Management Actions

MRM-01 WAs are withdrawn from all forms of entry, appropriation, or disposal under the public land laws.

MRM-02 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.14.2 Locatable Mineral Management

2.14.2.1 Goals and Objectives

LOC-01 Provide for prospecting and location of valuable (locatable) mineral deposits on public lands in the Planning Area (unless withdrawn) in order to meet local, regional and national needs by providing opportunities for exploration, location, and development of mining claims and sites while preventing

unnecessary or undue degradation of public lands and resources, and protecting sensitive resource values.

2.14.2.2 Management Actions

LOC-02 Through land tenure adjustments, surface and subsurface (minerals) estates will be consolidated under single ownerships when possible, thereby improving manageability of the federal lands involved. Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

LOC-03 Require notices, when mechanical equipment is used for exploration or processing and cumulative disturbance is less than five acres.

LOC-04 Require mining plans for operations where disturbance is greater than five acres and/or where bulk sampling removes 1,000 tons or more.

LOC-05 In withdrawn areas, an investigation and a report to determine the validity of the mining claim will be required prior to approval of a mining plan of operations.

LOC-06 Require a mining plan of operations in any Special Designation in accordance with existing 43 CFR 3809 regulations.

LOC-07 Require mining plans of operation in areas designated as closed to OHV use and in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat. Any activity located within critical habitat will require a Section 7 consultation with USFWS.

LOC-08 Any surface disturbance associated with casual use activity in designated critical habitat causing more than negligible disturbance will require a notice for review or a plan of operations for approval.

LOC-09 All post plan created mining disturbances will be reclaimed to meet the surrounding natural environment. Mining activities would be in compliance with all State of California reclamation requirements, particularly the Surface Mining and Reclamation Act (SMARA).

LOC-10 Recommend withdrawal of the In-Ko-Pah Mountains ACEC from locatable mineral entry.

LOC-11 Recommend withdrawal of the Table Mountain ACEC from locatable mineral entry.

LOC-12 WSAs are subject to IMP.

2.14.3 Leasable Mineral Management

LSE-01 There are 34,993 acres of land available for leasable mineral entry, including geothermal mineral leasing, in the Planning Area (Map 5).

2.14.3.1 Goals and Objectives

LSE-02 Provide opportunities for mineral leasing, while preventing unnecessary or undue degradation of public lands.

2.14.3.2 Management Actions

LSE-03 Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

LSE-04 Critical habitat and ACECs are closed to leasable mineral entry, including geothermal mineral leasing.

LSE-05 Lark Canyon OHV Area, Lark Canyon Campground/Staging Area, and Cottonwood Campground are available for leasable mineral entry, including geothermal mineral leasing.

LSE-06 WSAs are closed to leasable mineral entry, including geothermal mineral leasing.

LSE-07 Riparian areas are avoidance areas for all commercial and non-commercial surface-disturbance activities, including leasable mineral entry (e.g. geothermal).

2.14.4 Salable Mineral Materials Management

2.14.4.1 Goals and Objectives

SAL-01 Prevent unnecessary or undue degradation of public lands.

SAL-02 Respond appropriately to increasing demand for mineral materials in the Planning Area.

SAL-03 Provide mineral materials on a case-by-case basis for infrastructure development.

2.14.4.2 Management Actions

SAL-04 Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

SAL-05 WSAs are closed to salable mineral entry.

SAL-06 Critical habitat and ACECs are closed to salable mineral entry.

2.15 Recreation Resource Management

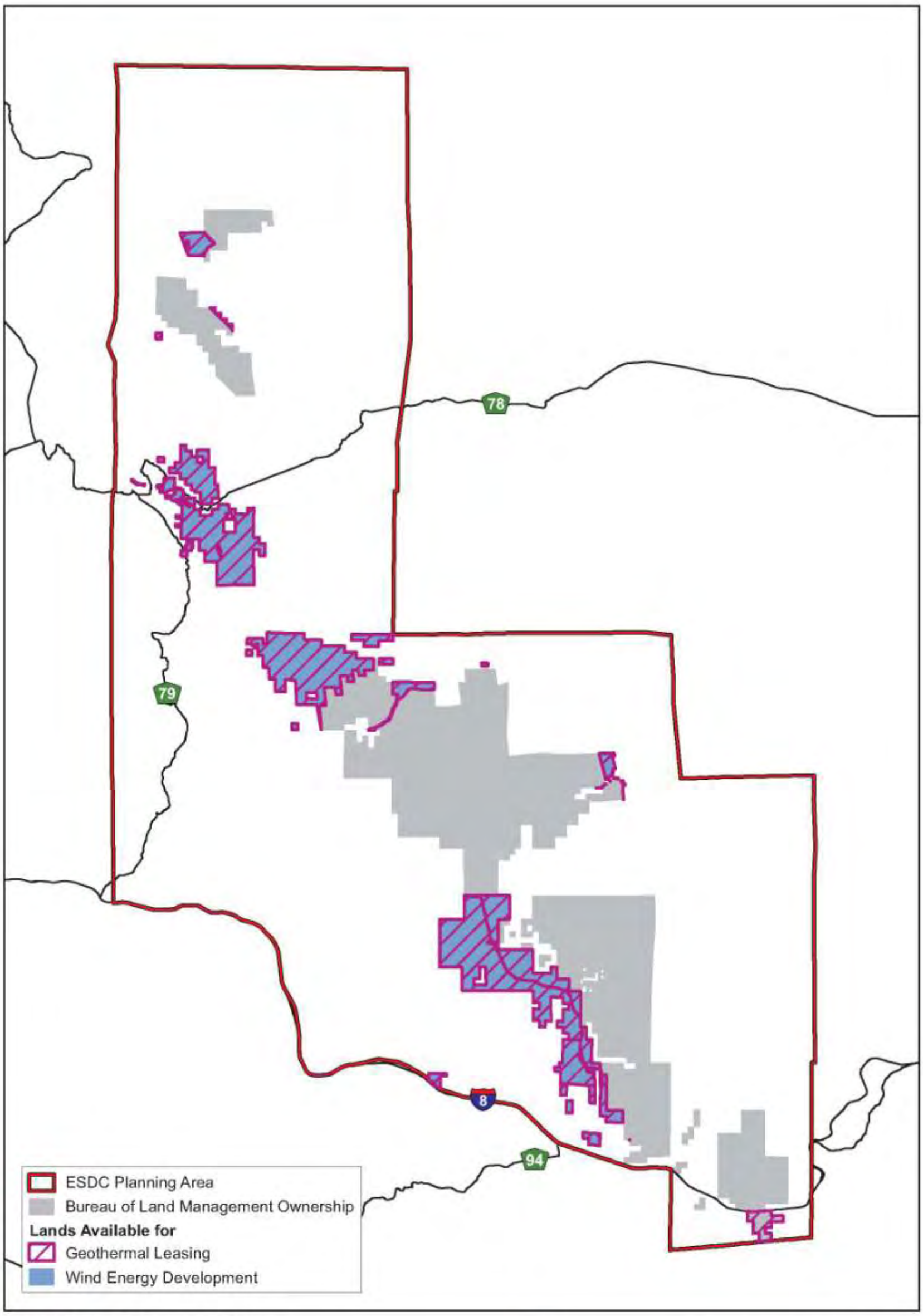
2.15.1 Recreation Management Areas

BLM identifies Special Recreation Management Areas (SRMA) where the resources of the public lands attract visitors. All BLM-administered lands within the Planning Area have a demonstrated destination recreation–tourism market and will be managed as a Destination SRMA through collaborative partnerships.

The SRMA boundaries are not intended to confer authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM. Planning boundaries reflect the fact that these adjacent lands are vital in the appropriate management of the entire area.

For decisions concerning OHV recreation within the Planning Area, please see the Transportation and Public Access section.

RMA-01 Map 6 identifies the locations of the SRMAs. SRMAs are presented in Table 6.



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
October 2008

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MAP 5: Lands Available for Geothermal Leasing and Wind Energy Development

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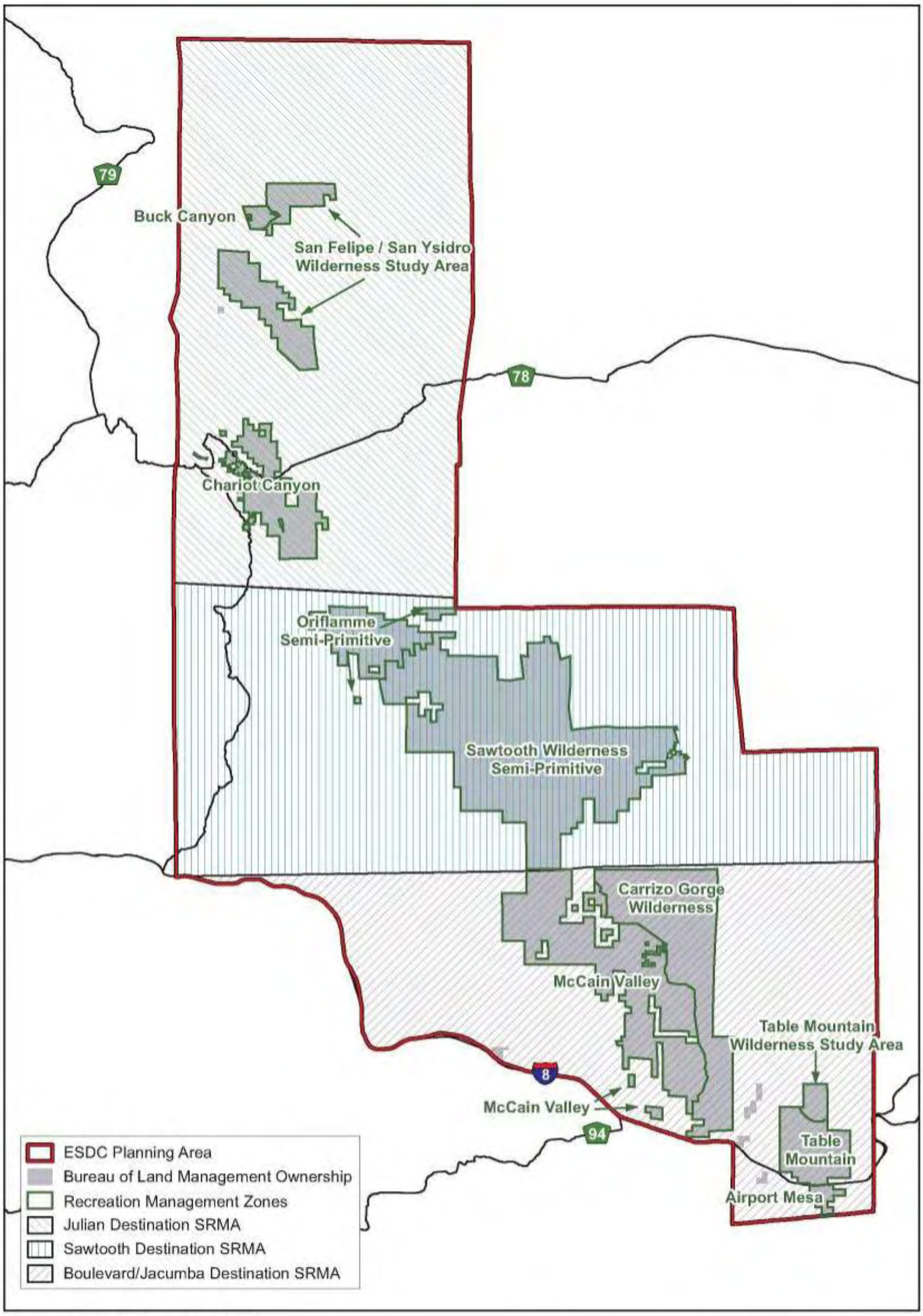

EASTERN SAN DIEGO COUNTY
RESOURCE MANAGEMENT PLAN
RECORD OF DECISION

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
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MAP 6: Special Recreation Management Areas and Recreation Management Zones

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TABLE 6
SPECIAL RECREATION MANAGEMENT AREAS (ACRES)

SRMA	Acres
Boulevard/Jacumba Destination SRMA	42,673
Julian Destination SRMA	15,170
Sawtooth Destination SRMA	45,026
Total BLM acres	102,869

RMA-02 Boulevard/Jacumba Destination SRMA

Goals and Objectives

The Boulevard/Jacumba Destination SRMA includes the most extensively used areas in the Planning Area and includes the established campgrounds, horse corrals, and designated OHV use area and route network. The SRMA also includes lands that are designated as wilderness areas, wilderness study areas, and ACECs. The primary activities in these areas are camping, OHV use, equestrian use, target shooting, hunting, mountain biking, hiking and backpacking, wildflower and wildlife viewing, rock hounding, and pleasure touring. This SRMA will be managed as a regional or national destination through collaborative partnerships in order to promote the continued use of the lands for these activities.

Primary Market Strategy

The primary market strategy for the proposed Boulevard/Jacumba Destination SRMA will be to target demonstrated destination recreation-tourism market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

BLM will coordinate with local communities, Native American tribes and groups, Cleveland National Forest, California SHPO, San Diego Archaeological Society, San Diego County, CDFG, USFWS, Department of Homeland Security Customs and Border Protection U.S. Border Patrol (USBP), California State Parks, California Department of Forestry and Fire Protection (CAL FIRE), California State Lands Commission, and local public health and safety organizations, and various NGOs.

Environmental Education Needs

BLM supports the *Tread Lightly!* and *Leave No Trace* national programs and promotes proper OHV use, hunting ethics, and archaeological/cultural resource ethics. BLM will provide information about geology, wildlife, and other points of interest. BLM will implement wildland fire prevention and mitigation, invasive species prevention, and wilderness survival skills programs.

RMA-03 Julian Destination SRMA

Goals and Objectives

The Julian Destination SRMA includes a mixture of lands that are either limited use areas or are designated WSAs. Primary uses include 4X4 touring, equestrian use, mountain biking, target shooting, hunting, hiking and backpacking, wildflower and wildlife viewing, and rock hounding. This SRMA will be managed as a regional or national destination through collaborative partnerships in order to promote the continued use of the lands for these activities.

Primary Market Strategy

The primary market strategy for the proposed Julian Destination SRMA will be to target demonstrated destination recreation-tourism market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

BLM will coordinate with local communities, Native American tribes and groups, California SHPO, San Diego Archaeological Society, Julian Historical Society, San Diego County, CDFG, USFWS, California State Parks, CAL FIRE, California State Lands Commission, and local public health and safety organizations, and various NGOs.

Environmental Education Needs

BLM supports the *Tread Lightly!* and *Leave No Trace* national programs and promotes proper OHV use, hunting ethics, and archaeological/cultural resource

ethics. BLM will provide information about geology, wildlife, and other points of interest. BLM will implement wildland fire prevention and mitigation, invasive species prevention, and wilderness survival skills programs.

RMA-04 Sawtooth Destination SRMA

Goals and Objectives

The Sawtooth Destination SRMA is composed primarily of designated WAs and WSAs. The primary activities in these areas are wilderness activities, including hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Limited OHV use, camping, and day use will be accommodated, outside of designated WAs and WSAs. This SRMA will be managed as a regional or national destination through collaborative partnerships in order to promote the continued use of the lands for these activities.

Primary Market Strategy

The primary market strategy for the proposed Sawtooth Destination SRMA will be to target demonstrated destination recreation-tourism market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

BLM will coordinate with local communities, Native American tribes and groups, California SHPO, San Diego Archaeological Society, San Diego County, CDFG, USFWS, USBP, California State Parks, CAL FIRE, California State Lands Commission, and local public health and safety organizations, and various NGOs.

Environmental Education Needs

BLM supports the *Tread Lightly!* and *Leave No Trace* national programs and promotes proper OHV use, hunting ethics, and archaeological/cultural resource ethics. BLM will provide information about geology, wildlife, and other

points of interest. BLM will implement wildland fire prevention and mitigation, invasive species prevention, and wilderness survival skills programs.

2.15.2 Recreation Management Zones

Within each SRMA, BLM also allocates Recreation Management Zones (RMZ). An RMZ represents public lands with a distinctive recreation niche (activities, experiences, and benefits) within each SRMA. The BLM will focus management, funding, and planning within SRMAs and their RMZs to work towards stated Recreation Management Objectives and Goals and Objectives.

The allocation of SRMAs and RMZs provides the Planning Area with an activity-level planning framework for future recreation management. Activity-level recreation management plans based on this framework will provide additional opportunities for public involvement and agency collaboration to further ensure that future proposed actions are compatible with the BLM's multiple-use mission.

RMZ-01 Recreation Management Zones by SRMA are presented in Table 7 below (see Map 6 for the locations of the RMZs).

TABLE 7
RECREATION MANAGEMENT ZONES BY SRMA

Recreation Management Zone (RMZ)	Boulevard/ Jacumba Destination SRMA	Julian Destination SRMA	Sawtooth Destination SRMA
Airport Mesa RMZ	X		
Buck Canyon RMZ		X	
Chariot Canyon RMZ		X	
Carrizo Gorge Wilderness RMZ	X		
McCain Valley RMZ	X		
Oriflamme Semi-primitive RMZ			X
San Felipe Hills/San Ysidro Wilderness Study Area RMZ		X	
Sawtooth Wilderness Semi-Primitive RMZ			X
Table Mountain RMZ	X		
Table Mountain Wilderness Study Area RMZ	X		

2.15.2.1 Boulevard/Jacumba SRMA

RMZ-02 Airport Mesa RMZ

Goals and Objectives: Airport Mesa RMZ will be managed for its rural recreational qualities.

Recreation Niche: The Airport Mesa RMZ is a destination point for many of San Diego and Imperial County residents that enjoy target shooting, hiking, and hunting.

- **Primary Activities:** Target shooting, hiking, and hunting.
- **Experiences:** Learning about open spaces, proper shooting etiquette and purchasing recreation supplies from local communities.
- **Benefits:**
  - Personal: Increased appreciation of open spaces that allow various recreational opportunities.
  - Household & Community: Increased community stewardship of public lands and increased family bonding.
  - Economic: Increased local tourism revenues.

RMZ-03 Carrizo Gorge Wilderness RMZ

Goals and Objectives: The Carrizo Gorge Wilderness RMZ consists of the Carrizo Gorge WSA. This RMZ will be managed for it wilderness qualities while supporting the needs of the California State Parks in the vicinity.

Recreation Niche: The RMZ offers a unique opportunity to enjoy an area that supports solitude and remoteness, a diverse flora and fauna, and general wilderness quality.

- **Primary Activities:** Hiking, horseback riding, backcountry hiking, hunting, and wildlife viewing.

- **Experiences:** Regular exercise in natural environments, seeing restored riparian ecosystems, and learning about the area's natural and cultural history.

- **Benefits:**

  - Personal: Increased appreciation of the area's natural and cultural heritage.

  - Community: Improved community fitness and increased community stewardship of public lands.

  - Economic: Increased local heritage tourism revenues, and increased local property values.

  - Environmental: Improved protection of natural and cultural resources and decreased presence of non-native invasive species.

RMZ-04 McCain Valley RMZ

Goals and Objectives: The McCain Valley RMZ includes the Lark Canyon and Cottonwood Campgrounds and developed recreational facilities. This RMZ will be managed for its historical, cultural and natural qualities while continuing to be managed as a diverse recreational area supporting a developed recreational trail system for OHV day-use area, developed recreation facilities (e.g., campgrounds and other sites), and natural resource qualities. The RMZ will continue to support the management plan and agreements with Native American communities and California State Parks.

Recreation Niche: The RMZ supports multi-recreational activities to people in San Diego and Imperial Counties, including numerous hiking, OHV, and equestrian trail opportunities.

- **Primary Activities:** Camping, OHV riding, hunting, mountain bike riding, hiking, horseback riding, wildlife and landscape viewing, photography and picnicking.

- **Experiences:** Regular exercise in natural environments, family recreation, purchasing recreation supplies at local communities, and living near safe and convenient access to recreational opportunities on public lands.

- **Benefits:**
    - Personal: Increased family bonding; increased community stewardship of public lands; a better understanding for the need to maintain rural and undeveloped ecosystems; and improved physical fitness.
    - Household & Community: Stronger family ties and increased community stewardship of public lands.
    - Economic: Increased local eco-tourism revenues and increased local property values.
    - Environmental: Reduced presence of non-native invasive species and improved protection of natural and cultural resources.

RMZ-05 Table Mountain RMZ

Goals and Objectives: The Table Mountain RMZ will be managed for its historical, cultural and natural qualities while supporting the needs of the local Native American tribal communities and the California State Parks within the vicinity.

Recreation Niche: This RMZ has a wide variety of primitive, natural, and unconfined recreation opportunities. Challenging outdoor adventures to hike, camp, and hunting exist throughout the mountain range's rugged and undeveloped terrain.

- **Primary Activities:** Landscape viewing, OHV use, wildlife and wildflower viewing, hunting, and camping.
- **Experiences:** Recreating as a family, enjoying safe access to public lands, enjoying the undeveloped nature of rugged western lands, and purchasing recreation supplies from local communities.
- **Benefits:**
    - Personal: More family bonding; increased community stewardship of public lands; and a better understanding for the need to maintain undeveloped desert ecosystems.

- Household & Community: Increased community stewardship of public lands.
- Economic: Increased local eco-tourism revenues.
- Environmental: Improved protection of natural and cultural resources and a decreased presence of non-native invasive species.

RMZ-06 Table Mountain Wilderness Study Area RMZ

Goals and Objectives: Table Mountain Wilderness Study Area RMZ consists of the Table Mountain WSA. This RMZ will be managed for its wilderness qualities while supporting the needs of the local Native American tribal communities and the California State Parks within the vicinity.

Recreation Niche: The RMZ offers a unique opportunity to enjoy an area that supports solitude and remoteness, a diverse flora and fauna, and general wilderness quality.

- **Primary Activities:** Hiking, horseback riding, backcountry travel, wildlife viewing, and hunting.
- **Experiences:** Regular exercise in natural environments, learning about the area's natural and cultural history, purchasing recreation supplies at local communities, and living near safe and convenient access to recreational opportunities on public lands.
- **Benefits:**
  - Personal: Increased appreciation of the area's natural and cultural heritage.
  - Community: Improved community fitness and increased community stewardship of public lands.
  - Economic: Increased local heritage tourism revenues, and increased local property values.
  - Environmental: Improved protection of natural and cultural resources and decreased presence of non-native invasive species.

2.15.2.2 Julian SRMA

RMZ-07 San Felipe Hills/San Ysidro Wilderness Study Area RMZ

Goals and Objectives: San Felipe Hills/San Ysidro Wilderness Study Area RMZ consists of the San Felipe Hills and San Ysidro Mountain WSAs. This RMZ will be managed for its wilderness qualities while working in conjunction with Native American tribes, California State Parks, and USFS. The BLM will continue to support the management plan and agreements for the Pacific Crest NST.

Recreation Niche: The RMZ provides challenging, primitive recreation opportunities such as hunting, hiking, and equestrian use. This RMZ is a main thoroughfare for the Pacific Crest Trail. The RMZ also offers a unique opportunity to explore historical mining areas.

- **Primary Activities:** Hiking, backcountry camping, horseback riding, wildlife viewing, hunting, photography, picnicking, and wildlife and wildflower viewing.
- **Experiences:** Challenging, non-motorized, exploratory adventures; enjoying a sense of community from recreating with other outdoor enthusiasts; and appreciating the primitive, natural, and unconfined recreation opportunities.
- **Benefits:**
    - Personal: Improved self-confidence and physical fitness and a better understanding for the need to maintain undeveloped ecosystems.
    - Community & Household: Improved community stewardship of public lands.
    - Economic: Increased regional eco-tourism revenues by purchasing recreation supplies at local communities and increased local property values.
    - Environmental: Improved protection of natural and cultural resources, and decreased presence of non-native invasive species.

RMZ-08 Buck Canyon RMZ

Goals and Objectives: Buck Canyon RMZ will be managed as a Limited Use Area emphasizing its historical, cultural and natural qualities while supporting recreational activities. BLM will consider the future development of an equestrian parking/turnaround area in Buck Canyon.

Recreation Niche: Buck Canyon RMZ provides a range of trail-based recreation opportunities and is a portal for backcountry travel into the Anza Borrego Desert State Park. Recreational activities for OHV use and non-motorized activities such as hiking, hunting, horseback riding, bird watching, and photography are available.

- **Primary Activities:** OHV riding, hunting, hiking, horseback riding, and wildlife viewing.
- **Experiences:** Recreating as a family, enjoying safe access to our public lands, enjoying the undeveloped nature of the San Ysidro Mountains.
- **Benefits:**
  - Personal: Better understanding for the need to maintain open spaces.
  - Household & Community: Increased appreciation of nature and opportunities of the public lands, closer family ties, and increased community stewardship of public lands
  - Economic: Positive contributions to local-regional economic stability and increased local property values.
  - Environmental: Improved protection of natural and cultural resources, and decreased presence of non-native invasive species.

RMZ-09 Chariot Canyon RMZ

Goals and Objectives: Chariot Canyon RMZ will be managed as a Limited Use Area emphasizing its historical, cultural and natural qualities as well as remote recreational uses. The RMZ will continue to support the management plan and agreements for the Pacific Crest NST, USFS, and California State Parks. BLM will consider the development of a primitive campground/equestrian area for this RMZ.

Recreation Niche: This area provides multi-use recreation for motorized and non-motorized activities in a remote setting.

- **Primary Activities:** Horseback riding, hiking, 4x4 touring, camping, hunting, and wildlife viewing.
- **Experiences:** Appreciating the primitive, natural, and unconfined recreation opportunities.
- **Benefits:**
  - Personal: Better understanding for the need to maintain undeveloped desert ecosystems, improved self-confidence, and physical fitness.
  - Household & Community: Improved community stewardship and increased family bonding through recreation.
  - Economic: Increased local eco-tourism revenues through the purchase of recreation supplies.
  - Environmental: Improved wildlife habit, increased awareness of nature and giving the public a sense of stewardship of the land.

2.15.2.3 Sawtooth Destination SRMA

RMZ-10 Oriflamme Semi-primitive RMZ

Goals and Objectives: Oriflamme Semi-Primitive RMZ is a remote Limited Use Area that will be managed for its historical, cultural and natural qualities. The RMZ will continue to support the management plan and agreements for Pacific Crest NST, USFS, and California State Parks. BLM will consider implementation of road improvements and the development of a picnic area for this RMZ.

Recreation Niche: The RMZ provides a range of trail-based recreation opportunities for OHV use and non-motorized activities in a secluded area of the Planning Area.

- **Primary Activities:** OHV riding, hunting, hiking, horseback riding, hunting, photography, and wildlife viewing.

- **Experiences:** Recreating as a family, enjoying safe access to our public lands, and enjoying the undeveloped natural environment.
- **Benefits:**
  - Personal: Better understanding for the need to maintain open spaces.
  - Household & Community: Increased appreciation of nature and opportunities of the public lands, closer family ties, increased community stewardship of public lands, and a better understanding for the need to maintain open spaces.
  - Economic: Positive contributions to local-regional economic stability through increased eco-tourism.
  - Environmental: Reduced presence of hazardous fuels, improved protection of cultural and historic resources, and improved health of the land.

RMZ-11 Sawtooth Wilderness Semi-primitive RMZ

Goals and Objectives: The Sawtooth Wilderness Semi-primitive RMZ consists of the Sawtooth WA and WSAs. There are also a few small scattered BLM-administered lands adjacent to the designated WA and WSAs within the RMZ. This RMZ is a rugged area that will be managed for its wilderness qualities while working in conjunction with Native American tribes and California State Parks. BLM will consider implementation of road improvements and the development of a trailhead on the BLM-lands adjacent to the designated WA and WSA boundaries to facilitate access to these areas.

Recreation Niche: This RMZ offers a unique opportunity to explore lands that have a wilderness quality. The Sawtooth area offers a diverse flora and fauna community and remote hiking and backcountry experiences for visitors to enjoy.

- **Primary Activities:** Hiking, backcountry camping, horseback riding, wildlife viewing, photography, and hunting.
- **Experiences:** Regular exercise in natural environments, seeing riparian ecosystems, learning about the area's natural and cultural history, and

living near safe and convenient access to recreational opportunities on public lands.

- **Benefits:**
  - Personal: Increased appreciation of the area's natural and cultural heritage.
  - Community: Improved community fitness and increased community stewardship of public lands.
  - Economic: Positive contributions to local-regional economic stability and increased local property values.
  - Environmental: Improved protection of natural and cultural resources and decreased presence of non-native invasive species.

2.15.3 Management Actions

RMZ-12 Collect Recreation Use Permit (RUP) fees at Cottonwood and Lark Canyon Campgrounds under the authority of Federal Lands Recreation Enhancement Act (FLREA).

RMZ-13 Collect Special Recreation Permits (SRP) fees for commercial activities and organized group events on a case-by-case basis to provide for a wide range of recreation opportunities within the Planning Area.

RMZ-14 Maintain, install, and improve informational and interpretive kiosks and signs at the main points of access and interest throughout the field office. Signage will focus on informing visitors of applicable regulations and sustainable outdoor recreation ethics.

RMZ-15 Protect at-risk cultural resources from recreational damage as needed throughout the field office. Protection measures will include, but are not limited to fencing, signage, and trail realignments, restorations, and use limitations.

RMZ-16 Limit the length of stay for overnight camping on BLM-administered lands to 14 days within any 28-day period. After 14 days, visitors must move to another campsite at least 25 miles away.

RMZ-17 Target shooting is permitted on BLM-administered lands throughout the Planning Area except in the McCain Valley and Table Mountain RMZs.

However, the legal pursuit of game is allowed on BLM-administered lands throughout the Planning Area, subject to the CDFG regulations.

RMZ-18 Proposed activities (e.g. surface disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

RMZ-19 Limit group size for Table Mountain to 12 visitors.

RMZ-20 Where warranted by increased recreation demands, expand the RUP fee program to additional BLM-administered lands. The development of new and expanded RUP sites must support stated Recreation Management Objectives and Goals and Objectives, and will be contingent upon the completion of publicly reviewed recreation activity-plans that document the expected long-term compatibility with the BLM's multiple-use mission.

RMZ-21 Currently there are 38,690 acres allocated in the McCain Valley National Cooperative Land and Wildlife Management Area in accordance with the *McCain Valley Recreational Area Management Plan* (RAMP; 1979). This RAMP will be reviewed for consistency with approved RMP and revised accordingly.

RMZ-22 Lark Canyon OHV Area, Lark Canyon Campground/Staging Area, and Cottonwood Campground are available for leasable mineral entry, including geothermal mineral leasing.

RMZ-23 Lark Canyon OHV Area, Lark Canyon Campground/Staging Area, and Cottonwood Campground are available for renewable energy development (including geothermal mineral leasing).

RMZ-24 Airport Mesa is an exclusion area for renewable energy development (except geothermal mineral leasing).

2.16 Transportation and Public Access

All BLM-administered lands within the Planning Area are designated as open, closed, or limited to OHV use (Land Use Plan-level decision). Designation of individual routes of travel within the Planning Area is an implementation-level decision and is discussed in Section 3.0.

2.16.1 OHV Management Area Designations

Criteria and definitions for limited, open, and closed area designations are established in 43 CFR 8340.0-5 (f) (g) and (h), respectively.

Open areas are areas where all types of vehicle use is permitted at all times, anywhere in the area.

Limited areas are restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories: numbers of vehicles; types and sizes of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads and trails; use on designated roads and trails; limited to administrative use only; and other restrictions. The distance motorized vehicles may pull off of a designated route is 25 feet. This will be monitored on a continuing basis. If monitoring results show effects that exceed limits of acceptable change, the distance allowed for motorized vehicles to pull off from a designated route may be modified.

Closed areas are areas where motorized vehicle use is prohibited. Use of OHVs in closed areas may be allowed for certain reasons; however, such use would be made only with the approval of the authorized officer. Congressionally designated WAs are statutorily closed to motorized and mechanized use, except for purposes specifically provided for by law.

OHV-01 This RMP/ROD designates all BLM-administered public lands within the Planning Area as open, closed, or limited to motorized travel as identified in Map 7 and on Table 8.

TABLE 8
OHV MANAGEMENT AREA DESIGNATIONS (ACRES)

Designation	Acres
Open	0
Closed	61,712
Limited	41,157
Total Acres	102,869

2.16.1.1 Goals and Objectives

OHV-02 Continue to provide essential motorized access to non-federal lands, prior existing rights on BLM lands, and private in-holdings surrounded by BLM lands.

OHV-03 Continue to provide adequate motorized access for the maintenance of wildlife water catchments and for dispersed recreation activities such as hunting.

OHV-04 Provide for a wide variety of trail-based recreational opportunities (i.e., hiking, mountain biking, OHV riding, horseback riding, etc.).

OHV-05 Reduce or halt the unauthorized proliferation of motorized and non-motorized recreation trails.

OHV-06 Minimize impacts to identified sensitive cultural, natural, biological, and visual resources.

2.16.1.2 Management Actions

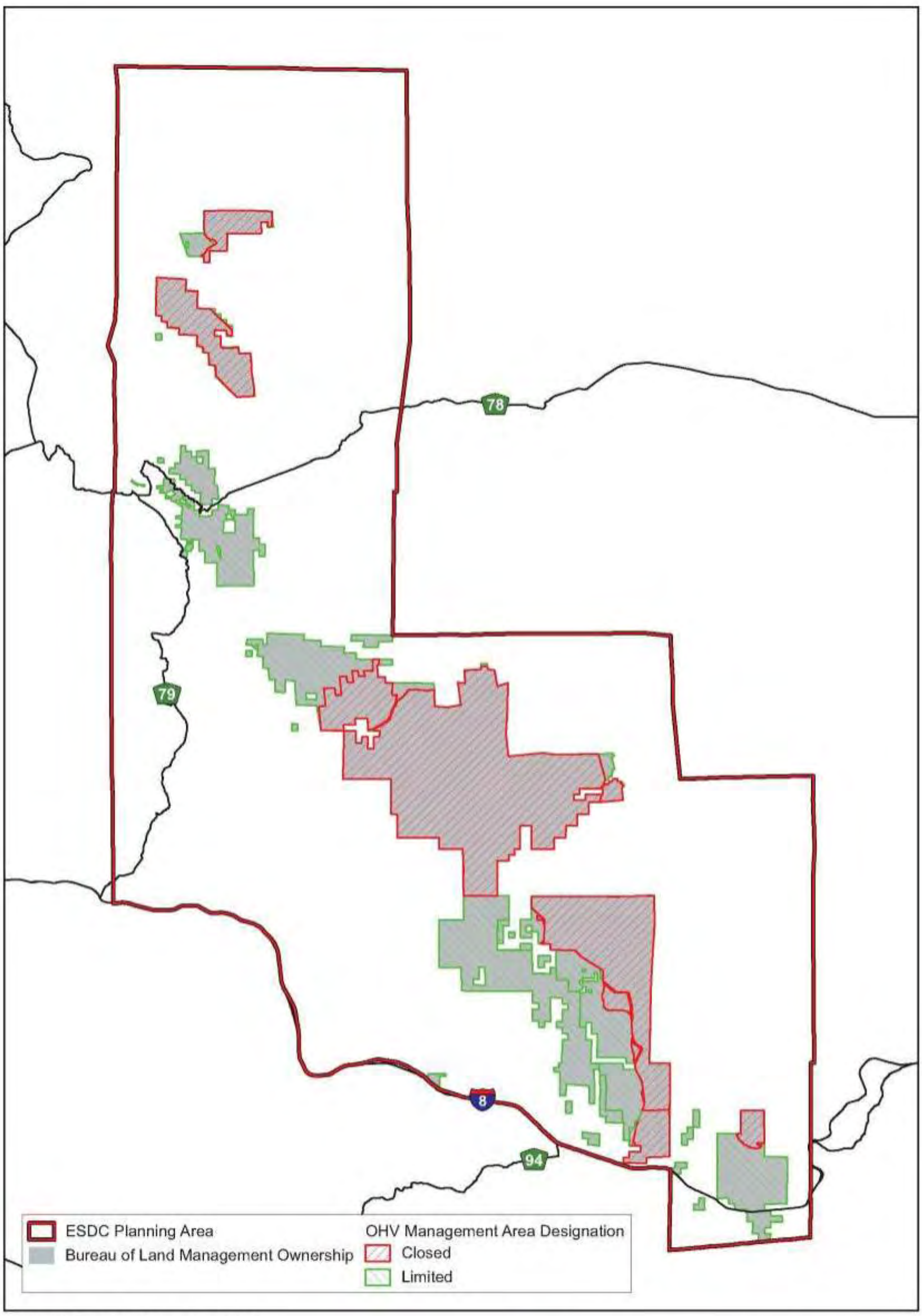
OHV-07 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

OHV-08 General vehicle travel will only be allowed on routes designated for motorized vehicles. Emergency vehicles may utilize a drivable wash in order to access a site. Where no roads exist, vehicles may be authorized on a case-by-case basis to travel cross-country to avoid the need for road building. Where new roads must be built, roadbeds will be no wider than needed for reliable access; BLM specifications will also be used to reduce erosion.

OHV-09 As a general practice, new roads will not be bladed for use in fence construction. The Authorized Officer may approve cross-country vehicle travel, or fences will be built without use of motorized access.

OHV-10 Mining plans of operation will be required in areas designated as closed to OHV use.

OHV-11 BLM's strategy to reduce vehicle incursions by restoring conditions of disturbed or degraded non-motorized routes or trespasses will be accomplished as rapidly as funding permits. Sensitive resources in immediate danger, or those that have been damaged by vehicle trespass, will be a high priority for restoration. Typically, the restoration will be limited to that portion of the route of trespass that is in line of sight from an open route. Each route will be evaluated on a case-by-case basis and the most appropriate method of restoration used based on geography, topography, soils, hydrology, and vegetation.



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION

3 0 3 6
Miles
3 0 3 6
Kilometers

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MAP 7: OHV Management Area Designations

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The methods of restoration will include:

- Not repairing washed-out routes
- Using natural barriers, such as large boulders
- Using rocks and dead and downed wood to obscure the route entryway
- Employing mulching, chipping, and raking to disguise evidence of routes
- Ripping up the route bed and reseeding with vegetation native to that area.
- Utilizing fences or barriers
- Providing signage, including information to OHV users, on the need and value of resource protection
- Converting motorized two-track routes into non-motorized single track routes
- Ensure that designated routes within the Planning Area are adequately signed and mapped for public use.

2.17 Lands and Realty Management

Lands and realty actions are generally externally initiated by the public and considered on a case-by-case basis as implementation level decisions.

Map 8 illustrates the locations of lands available for disposal, lands currently withdrawn and those recommended for withdrawal, existing communication sites, and the utility corridor (see Map 5 for the lands available for wind energy development).

2.17.1 Land Tenure

2.17.1.1 Land Available for Disposal

DIS-01 There are approximately 490 acres identified as available for disposal on BLM-administered lands within the Planning Area (see Map 8). These are identified in detail in Appendix F.

Goals and Objectives

DIS-02 No net loss of lands that are: a) designated or proposed to be designated as critical habitat for a listed or proposed threatened or endangered species; b) identified as supporting listed or proposed threatened or endangered species; or c) identified as supporting federal candidate species.

DIS-03 Retain lands to benefit resource values and management.

DIS-04 Land ownership patterns will be consolidated to achieve more efficient and effective resource management.

Management Actions

DIS-05 Disposal of mineral estate will be evaluated on a case-by-case basis. Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

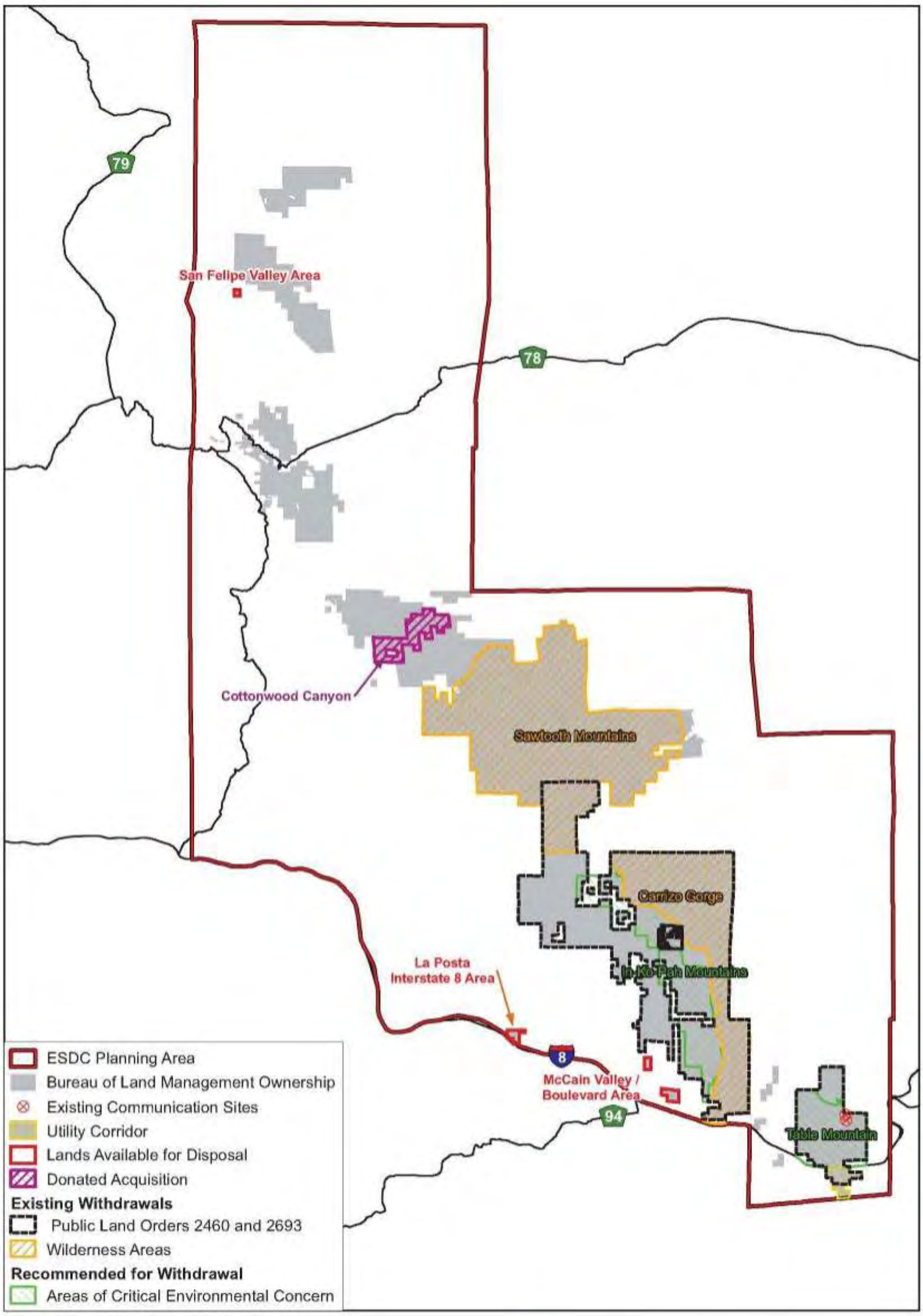
DIS-06 When disposing by sale, the preferred method will be competitive or modified-competitive.

DIS-07 Land tenure adjustment actions will be determined by resource management priorities.

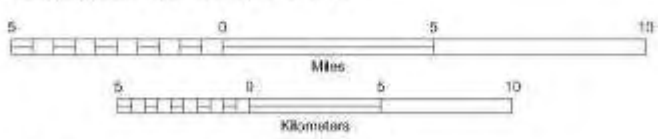
DIS-08 Proposed activities will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.17.1.2 Acquisition

ACQ-01 Lands and interests in lands (including easements) will be acquired from willing sellers on a case-by-case basis. Emphasis will be on protecting sensitive wildlife and archaeological resources; facilitating public recreation programs; and consolidating WAs and WSAs. Purchase and donations are key mechanisms for land acquisition.



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION



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MAP 8: Lands and Realty Management

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Goals and Objectives

ACQ-02 Lands or interest in lands (including easements) to be acquired must either:

- Facilitate access to public lands and resources,
- Maintain or enhance public uses and values,
- Facilitate implementation of this RMP/ROD,
- Provide for a more manageable land ownership pattern, or
- Include significant natural or cultural resource values.

Management Actions

ACQ-03 Manage all acquired lands in accordance with the RMP/ROD decisions for surrounding or adjacent BLM-administered lands.

ACQ-04 Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

ACQ-05 Any lands acquired by the BLM will include both the surface and subsurface (minerals) estate when possible and will be managed in accordance with the RMP/ROD decisions for the surrounding area.

ACQ-06 In April 2006, the BLM El Centro Field Office accepted the donation of an approximately 1,800-acre parcel in Cottonwood Canyon (see Map 8) from the Conservation Fund (TCF). In a donation agreement signed by BLM and TCF in 2006, BLM agreed to manage the parcel for ecological integrity and the permanent protection of the natural resources (see paragraph 1 in the Donation Agreement, Appendix G). To that end, BLM specifically agreed to:

1. construct roads, structures or other improvements only as minimally necessary to protect resources;
2. establish management guidance for motorized use consistent with Paragraph 1 in the Donation Agreement;
3. protect hydrologic and aquatic systems.

Therefore, in accordance with the Donation Agreement stipulations summarized above, this parcel will be available only for uses that would maintain or improve ecological integrity and resource conditions as consistent with Paragraph 1 in the Donation Agreement. Furthermore, this ROD

establishes route designations for motorized use in accordance with the Donation Agreement as outlined in Item 2, above.

2.17.2 Land Use Authorizations

Land use authorizations consist of leases, permits, and easements; ROWs; communication sites; renewable energy; withdrawals; and utility corridors.

LUA-01 WSAs are exclusion areas for all types of land use authorizations.

LUA-02 ACECs are avoidance areas for all land use authorizations other than for renewable energy (i.e., wind and geothermal development).

LUA-03 ACECs are exclusion areas for renewable energy (i.e., wind and geothermal development).

LUA-04 Critical habitat lands are exclusion areas for all types of land use authorizations.

Avoidance area is defined as an area only available for discretionary land use authorizations when there are no other reasonable alternatives for the authorization. Exclusion area is defined as an area that is not available for discretionary land use authorizations.

2.17.2.1 Leases/Permits/Easements

LPE-01 Leases, permits, and easements are considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified in this RMP/ROD. Geothermal development is regulated by the land use decisions presented under Leasables in the Mineral Resources Section (see Map 5).

Goals and Objectives

LPE-02 BLM will respond to public demand for leases, permits, and easements on a case-by-case basis, consistent with management decisions in this RMP/ROD.

LPE-03 Land will not be available for leasing for residential purposes.

Management Actions

LPE-04 BLM will use Recreation and Public Purposes Act (R&PP) leases to meet community needs.

LPE-05 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.17.2.2 Rights-of-Way

ROW-01 ROWs are considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified in this RMP/ROD.

Goals and Objectives

ROW-02 BLM will respond to public demand for ROWs on a case-by-case basis, consistent with management decisions in this RMP/ROD.

Management Actions

ROW-03 Locate new major utility ROWs only in a designated corridor, unless an evaluation of the project shows that location outside of a designated corridor is the only practicable alternative.

ROW-04 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.17.2.3 Communication Sites

COM-01 There are two communication sites present on BLM-administered lands within the Planning Area (see Map 8).

Goals and Objectives

COM-02 When practicable, consolidate future proposed facilities within existing communication sites, consistent with management decisions in this RMP/ROD.

Management Actions

COM-03 Any application for proposed facilities at existing communication sites must be compatible with other uses at the site existing at the time of application.

COM-04 Applications for new communication sites outside the two existing sites will be considered on a case-by-case basis to meet public demand, emphasizing co-location and subleasing of facilities, consistent with management decisions and exclusion and avoidance areas identified in this RMP/ROD.

COM-05 Proposed activities (e.g., surface-disturbing activities) will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.17.2.4 Renewable Energy

RNE-01 This RMP/ROD identifies 34,259 acres of land available for wind energy development. Geothermal energy development is regulated by the land use decisions presented under Leasable Mineral Management in the Mineral Resources Section of the RMP/ROD.

RNE-02 Renewable energy projects (e.g., wind and geothermal development) will be considered and authorized on a case-by-case basis to meet public demand consistent with management decisions identified in this RMP/ROD.

RNE-03 ACECs are exclusion areas for renewable energy development.

RNE-04 Airport Mesa is an exclusion area for renewable energy development (except geothermal).

RNE-05 WSAs are exclusion areas for renewable energy development (including geothermal).

RNE-06 Critical habitat lands are exclusion areas for renewable energy development (including geothermal).

RNE-07 Riparian areas are avoidance areas for all commercial and non-commercial surface-disturbance activities, including renewable energy development.

Goals and Objectives

RNE-08 Provide for the production and distribution of renewable energy, consistent with management decisions in this RMP/ROD.

RNE-09 Allow the use of public lands for production of renewable energy compatible with management of sensitive resources.

Management Actions

RNE-10 Process applications for commercial renewable energy (e.g., wind and geothermal development) facilities as ROWs or leases on a case-by-case basis.

RNE-11 Do not allow surface occupancy of renewable energy facilities in special designation areas (WA, WSA, and ACECs).

RNE-12 Make land available for growth, production, or conversion of biomass materials to energy products consistent with applicable laws, regulations, and policy and in accordance with the approved RMP/ROD.

RNE-13 BLM Wind Energy Program Policies and BMPs established in Appendix A in the *Wind Energy Development Program ROD* (DOI BLM 2005f) will be used for all site-specific wind development projects.

RNE-14 Surface disturbing activities associated with renewable energy development will not be approved until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

RNE-15 Surface disturbing activities associated with renewable energy development will not be approved until compliance with Section 7 of the ESA has been completed and documented, in areas where such consultation is needed.

2.17.3 Withdrawals

2.17.3.1 Land Withdrawn Current and Recommended

Lands currently withdrawn and recommended for withdrawal are shown on Map 8.

WTD-01 WAs are withdrawn from all forms of land entry. There are 48,333 acres of WAs on BLM-administered lands within the Planning Area.

WTD-02 Existing Public Land Orders (PLO) withdraw 18,319 acres from all forms of land entry on BLM-administered lands within the Planning Area. PLOs withdraw lands from application under certain non-mineral public land laws and from disposition under the homestead, desert land, and scrip selection laws. This acreage excludes any overlap with WAs.

WTD-03 BLM will recommend the withdrawal of 12,592 acres of BLM-administered lands within the Planning Area from all forms of land entry. This includes the In-Ko-Pah Mountains ACEC and Table Mountain ACEC. The acreage of ACECs excludes the private in-holdings located within the ACEC boundaries; however, these areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.

2.17.3.2 Goals and Objectives

WTD-04 Protect sensitive or significant natural or cultural resource values from disturbances relating to locatable mineral entry.

2.17.3.3 Management Actions

WTD-05 Minimize the amount of land withdrawn under PLOs and, where applicable, revoke existing withdrawals, if the land is no longer needed for the original purpose of the withdrawal.

WTD-06 Continue to review existing lands withdrawn under PLOs and other agency withdrawals periodically to ensure that the reasons for the withdrawal are still valid, and that only the acreage needed is retained in withdrawn status.

WTD-07 In withdrawn areas, an investigation and a report to determine the validity of a locatable mineral mining claim will be required prior to approval of a mining plan of operations.

2.17.4 Utility Corridors

COR-01 There is one designated utility corridor on BLM-administered lands within the Planning Area. This corridor has a maximum length of 1.5 miles and a maximum width of 1 mile with the northern boundary being the southern boundary of the ROW of Interstate 8 (see Map 8).

2.17.4.1 Goals and Objectives

COR-02 Consolidation of major ROWs within the approved corridor to minimize resource impacts.

COR-03 The designated corridor would be the preferred location for major utility ROWs passing through the Planning Area.

2.17.4.2 Management Actions

COR-04 BLM will continue to manage one utility corridor consistent with the *Western Regional Corridor Study* (Western Utility Group 1993).

COR-05 All new utility ROWs, consisting of the following types, will be located only within the designated corridor: 1) new electrical transmission towers and cables of 161 kV or above; 2) all pipelines with diameters greater than 12 inches; 3) coaxial cables for interstate communications; and 4) major aqueducts or canals for interbasin transfers of water.

COR-06 Avoid special designation areas and environmentally sensitive areas.

COR-07 Proposed activities (e.g., surface-disturbing activities) within the utility corridor will not be approved until compliance with Section 106 of the NHPA has been

completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.18 Public Health and Safety

2.18.1 Abandoned Mines

2.18.1.1 Goals and Objectives

ABM-01 Reduce or eliminate the risk to members of the public associated with abandoned mines.

2.18.1.2 Management Actions

ABM-02 Implement fencing, gating, signage, and/or closure of abandoned mine openings.

ABM-03 Consider using abandoned mines for wildlife habitat.

ABM-04 Proposed activities (e.g., surface-disturbing activities) will not be approved, until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

2.18.2 Unexploded Ordnance

The United States Army Corps of Engineers (USACE) is responsible for investigating and mitigating environmental impacts related to past military use.

2.3.19.2.1 Goals and Objectives

UXO-01 Promote pubic and/or environmental safety from unexploded ordnance (UXO).

2.3.19.2.2 Management Actions

UXO-02 In cooperation with the USACE, identify the locations on BLM-administered lands that are potential areas of UXO concern.

2.18.3 International Border Issues

BLM manages approximately 0.5 mile of public land along the international border within the Planning Area.

2.18.3.1 Goals and Objectives

IBI-01 Ensure that borderlands are safe for public and agency use.

2.18.3.2 Management Actions

IBI-02 In performance of border management duties, Department of Homeland Security Customs and Border Protection USBP is authorized to use all BLM routes as they are designated. In emergency situations, where greater access may be required, BLM will coordinate with USBP to minimize impacts to resources.

2.18.4 Hazardous Materials

2.18.4.1 Goals and Objectives

HZM-01 Minimize the presence and potential impact to human health and the environment from hazardous materials.

2.18.4.2 Management Actions

HZM-02 Perform public notification of potential health risks by means of notices, signage, and other forms of communication.

HZM-03 Remediate areas contaminated with hazardous materials in accordance with applicable laws and regulations.

HZM-04 Proposed activities (e.g., surface-disturbing activities) will not be approved, until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes.

3.0 Implementation-level Decisions: Routes of Travel

All routes have been classified as motorized or non-motorized. Motorized routes are open to all vehicles, including OHVs. Some motorized routes may have additional limitations on use, including vehicle size, vehicle type, and season of use, or by limiting use to administrative vehicles only. Non-motorized routes will be closed to motorized vehicles, including OHV, but open to biking, hiking, and equestrian use.

3.1 Implementation-level Decisions

ILD-01 Table 9 provides the total mileage of each of these classifications, and Map 9 illustrates the locations of the routes of travel by classification.

TABLE 9
ROUTES OF TRAVEL CLASSIFICATION

Classification	Miles
Motorized	95.7
Non-motorized	97.4
Total Mileage	193.1

ILD -02 WAs and WSAs would be designated as closed areas for mechanized and motorized vehicle use. Travel within the rest of the Planning Area would be limited to designated routes.

ILD -03 Non-motorized routes would be restored, as funding is available.

ILD -04 Lark Canyon OHV Area, routes limited to all-terrain vehicles (ATVs) 40” or less in size would have an average width of 5 feet. Vehicles may pull off of the route a maximum of 40 inches to allow for safe passing.

ILD -05 Motorized vehicles may be allowed to pull off 25 feet from the edge of a designated route.

ILD -06 Route decisions based on importance for recreation, cultural, and biological.

ILD -07 BLM routes would be inspected and some may be maintained on a periodic basis.

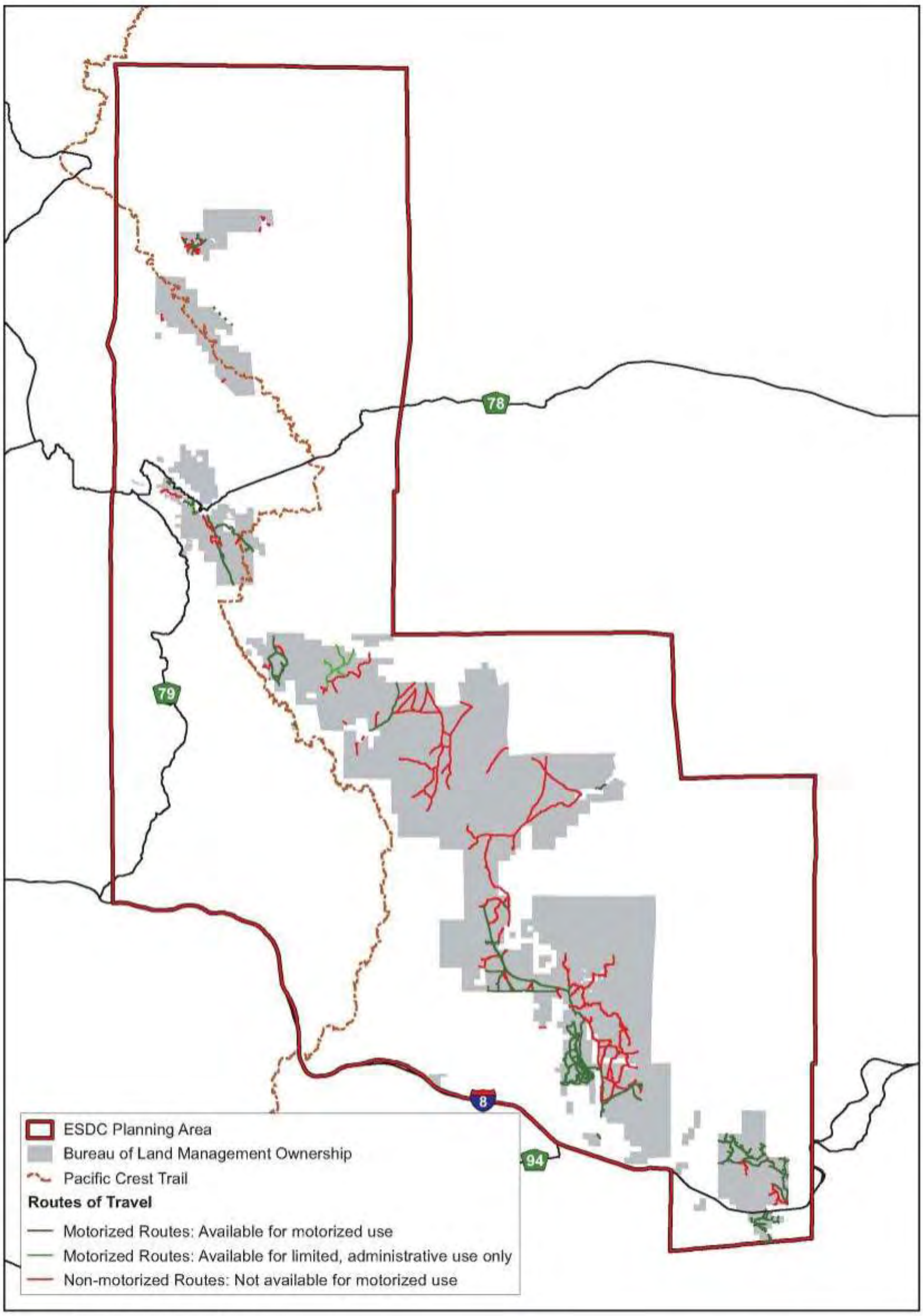
3.2 Individual Routes of Travel Designations

Map 9 shows the routes of travel as designated, and Table 10 lists the individual routes of travel, length of the route or segment, the designation, and any limitations on the route. The routes of travel are also depicted and labeled on the oversized maps included in the map pocket.

3.3 Administrative Remedies for Appeals

A person who wishes to appeal to the IBLA must file a notice expressing the wish to appeal in the office of the officer who made the decision (not the IBLA). A person served with the decision being appealed must transmit the Notice of Appeal in time for it to be filed in the office where is required to be filed within 30 days after the date of service. If a decision is published in the *Federal Register*, a person not served with the decision must transmit a Notice of Appeal in time for it to be filed within 30 days after the date of publication (43 CFR 4.411 and 4.413).

The *Federal Register* notice announcing the availability of this approved RMP/ROD will initiate the 30-day appeal period for the implementation-level decisions on Routes of Travel. The *Notice of Appeal* should state the specific route(s), as identified in Section 3.2 Individual Routes of Travel Designations of the RMP/ROD, on which the decision is being appealed. Copies of the map detailing the labeled routes of travel are included within the map pocket of this RMP/ROD and are also available at BLM's internet site: (http://www.BLM.gov/CA/st/en/fo/elcentro.html) or the El Centro Field Office (1661 South 4th Street, El Centro, California 92243) or by calling 760-337-4400.



EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN RECORD OF DECISION

5 0 5 10
Miles

5 0 5 10
Kilometers

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MAP 9: Routes of Travel

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TABLE 10
ROUTES OF TRAVEL

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use	
004a	Provides a pull-off for parking and camping.
005	Main road into Buck Canyon. Provides access for recreation.
006	Provides access for recreation.
007	Provides access for recreation and a turn around area for vehicles.
009	Provides recreational access.
010	Provides a pull off for recreational camping and access.
012	Provides access to numerous trails for recreational access.
012a 012b	Provides recreational access.
012f 012g	Provides a pull off for parking or camping.
012h	Provides recreational access.
013	Provides a leg of a loop for recreational touring.
015	Provides main access to Chariot Canyon. Important for recreation and fire protection.
015d 015e 015f	Provides a pull-off for camping and parking.
016	Provides main access to Rodriguez Canyon. Important for recreation and fire protection.
016b 016c 016d	Provides a pull-off for camping and parking.
018 019	Provides access to mine claims, fire protection and recreation.
020	Provides access for fire protection and recreation. Forms part of a loop for recreational touring.
020a	This route provides a pull off area from the main route for parking or camping.
021	Provides the only access to the Oriflamme area. Important for fire protection and recreation.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use (cont.)	
021a 021b	This route provides a pull off area from the main route for parking or camping. Provides access for fire protection.
021c	Major route into Oriflamme. Forms part of a touring loop. Important for fire protection and recreation.
022	Provides recreational access and fire protection. Forms part of a loop for recreational touring.
023	Provides recreational access and fire protection.
024	This route is the main access rout to the Table Mountain Area for camping hunting and other recreation as well as access to communication towers.
024a 024b	Provides pull off areas from the main route for parking or camping.
024c	This route provides recreation access.
024d 024e 024f	Provides a pull off area from the main route for parking or camping.
024g 024h 024i 024j 024k 024l	Provides pull off areas for parking or camping and provides recreational access.
024m	This route provides access for hikers to reach Anza Borrego State Park.
025	This route forms a loop to connect other routes and will provide access for recreation.
025a	This route provides a pull off area for parking or camping.
026	This route provides access for hikers into Anza Borrego State Park.
026a 026b	Provides pull off areas for parking or camping.
027	Provides recreational access. Forms part of a loop for recreational touring.
027a	This route provides a pull off area for parking or camping and provides recreational access.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use (cont.)	
028	Provides recreational access.
029	This route provides access for camping and recreation and connects other trails. Will provide access to hikers to Anza Borrego State Park.
030	This route provides access for camping and recreation.
031	This route provides access for camping and recreation. Will provide access to hikers to Anza Borrego State Park.
032	This route provides access for camping and recreation.
033 033a	This route provides access for camping and recreation. Will provide access to hikers to Anza Borrego State Park.
034	This route provides access for camping and recreation.
035	Provides recreational access.
035b	Route forms loop for turn-around area.
039 039a 040 041 041a 041b 041c 042 043 044 045 045a 045b 046 047 048 048a	Routes access the Airport Mesa Area and are important for Border Patrol use and recreational access.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use (cont.)	
048b 048c 049 050	Routes access the Airport Mesa Area and are important for Border Patrol use and recreational access.
051	McCain Valley Road is limited to street legal vehicles only. This is the only access into McCain Valley.
052	This route provides access to the Sacatone Overlook. It is limited to street legal vehicles only. Provides recreational access.
054	Provides access to Mount Tule.
055	Provides a pull-off for parking and recreational access.
056	Provides recreational access.
057	Canebrake Road provides recreational access, fire protection, and provides access to private inholdings.
058 059	Provides pull-off for parking and recreational access.
059a	Needed for fire protection.
060	Route used by hang gliders.
064	Canebrake Road provides recreational access, fire protection, and provides access to private inholdings.
064a	Provides a pull-off for parking.
067a	Provides access to private lands. Limited to street legal vehicles.
068 070	Provides recreational access and fire protection.
086	Provides recreational access. Provides access to Wilderness Study Area boundary.
086a	Provides pull-off for recreational access. Provides access to hikers to Anza Borrego State Park.
087	Serves as a pull-off from Hwy 78 for sight-seers. Recreational access.
089	Grapevine road is a popular touring route through Anza Borrego.
091	Provides recreational access and a pull off for parking.
097	This route makes up part of a loop for technical 4wd touring.
108	Provides access to private property. Located along cherry-stem between WA and WSA.
109	Provides access from Anza Borrego to the Sawtooth Wilderness Area Boundary.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use (cont.)	
110	Provides access to private property.
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313	Lark Canyon OHV area. Routes used for recreational purposes as part of the trail network. Routes limited to vehicles 40 inches in width.
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TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Motorized Routes: Available for motorized use (cont.)	
329 330 331 333 334 335 336 337 338 339 340 341 343 344 345 346 347	Lark Canyon OHV area. Routes used for recreational purposes as part of the trail network. Routes limited to vehicles 40 inches in width.
Motorized Routes: Available for motorized use—administrative use only	
098 099 100 101 101a	Per the donation agreement for Cottonwood Canyon, these routes will be available for administrative motorized use only.
Non-motorized Routes: Not available for motorized use	
001 002 003	Routes occur within a Wilderness Study Area.
008	Route is a redundant loop and does not improve access.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Non-motorized Routes: Not available for motorized use (cont.)	
011	Extremely rugged route that is naturally rehabilitating.
012c 012d 012e	Routes are overgrown and naturally rehabilitating and do not improve access to public lands.
014	Does not improve public access.
015a	Does not improve access to public lands.
015b 015c	Sensitive cultural and biological resources are present and routes do not improve access to public lands.
015g	Route crosses riparian area. Mostly overgrown, does not improve access to public lands.
016a	Sensitive cultural and biological resources are present and route does not improve access to public lands.
017	Route is naturally rehabilitating. Extremely rugged with sensitive natural and cultural resources.
024n	This route provides access for hikers to reach Anza Borrego State Park.
027b	Route is within Table Mountain ACEC. It is a duplicate route, not serving as access and could lead to route proliferation.
036 037 038	Routes in Table Mountain ACEC which supports sensitive cultural and biological resources. Routes are not necessary to reach points of interest.
051a	Duplicate route. Does not improve access to public lands.
052a 052c	Routes are located inside In-Ko-Pah ACEC and do not improve public access.
053	Route is within the In-Ko-Pah ACEC. Sensitive cultural and biological resources in the area.
061	This route is Pepperwood Trail, which is a hiking trail.
062 063	Sensitive cultural and biological resources are present and routes lead into state park wilderness.
064b	Does not improve access to public lands.
065	Sensitive cultural and biological resources in the area.
065a	Does not improve access to public lands.
066	Sensitive cultural and biological resources in the area.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Non-motorized Routes: Not available for motorized use (cont.)	
067	Isolated route surrounded by private land. Does not provide for public access to BLM-administered lands.
068b	Does not improve access to public lands.
069 071	Duplicate routes.
072	Does not provide significant access. Sensitive biological and cultural resources in the area.
073 074 075 075a	Routes are located within the In-Ko-Pah ACEC. Sensitive biological and cultural resources in the area.
076	Route lies within the In-Ko-Pah ACEC. Sensitive biological and cultural resources in the area. Route leads into a Wilderness Area.
076a 077 078 079 079a	Routes are located within the In-Ko-Pah ACEC. Sensitive biological and cultural resources in the area.
079b	Route lies within the In-Ko-Pah ACEC. Sensitive biological and cultural resources in the area. Route leads into a Wilderness Area.
080 081 082 083 084 085	Routes are located within the In-Ko-Pah ACEC. Sensitive biological and cultural resources in the area.
088	Inside San Felipe Wilderness Study Area.
090a	Does not improve access to public lands.
092 093	Routes are rarely used and are naturally rehabilitating.

TABLE 10
ROUTES OF TRAVEL (CONT.)

Route ID Number	Rationale for Implementation Level Decision
Non-motorized Routes: Not available for motorized use (cont.)	
094	Does not improve access to public lands. Extremely rugged route that is naturally rehabilitating.
095	Route is within Table Mountain ACEC. It is not necessary to reach any points of interest. Sensitive cultural and biological resources are present in the area.
095a	Route is within Table Mountain ACEC. Sensitive cultural and biological resources are present in the area.
096	Route is within Table Mountain ACEC. It is a duplicate route, does not serve as access, and could lead to route proliferation.
102	Route connected by a closed route. Sensitive cultural and biological resources are present in the area.
103	Route passes through Wilderness Study Area. It is naturally rehabilitating. Sensitive cultural and biological resources are present in the area.
104 105 106	Routes are located inside Wilderness Study Area.
107	Route is located inside Sawtooth Wilderness Area.
108a	Route is located inside a Wilderness Study Area.
111	Route leads form an area closed to motorized use by Anza Borrego State Park.
112	Route is located inside Sawtooth Wilderness Area.
114	Route is located inside Wilderness Study Area.
120	Banner Julian Trail is a historic trail used for hiking.

The *Notice of Appeal* must be filed with:

Bureau of Land Management
El Centro Field Office
Attn: Field Manager
1661 South 4th Street
El Centro, California 92243-4561

With a copy also sent to the Solicitor:

Office of the Solicitor
Pacific Southwest Region
1800 Cottage Way, Room E-1712
Sacramento, California 95825-1890

Within 30 days after filing the Notice of Appeal, a complete statement of reasons why you are appealing should be filed. If the *Notice of Appeal* fully stated the reasons for the appeal, no additional statement of reasons is necessary.

A separate Statement of Reasons must be filed with:

United States Department of Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy Street, MS-300-QC
Arlington, Virginia 22203

With a copy also sent to the Solicitor:

Office of the Solicitor
Pacific Southwest Region
1800 Cottage Way, Room E-1712
Sacramento, California 95825-1890

Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor having jurisdiction over the State in which the appeal rose must be served with a copy of: (a) the Notice of Appeal, (b) the Statement of Reasons, and (c) any other documents filed (43 CFR 4.413).

Within 15 days after any document is served on an adverse party, file proof of that service with:

United States Department of Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy Street, MS-300-QC
Arlington, Virginia 22203

This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (43 CFR 4.401(c)).

This decision becomes effective upon expiration of the time allowed for filing an appeal unless a petition for stay is timely filed together with a Notice of Appeal (43 CFR 4.21). If you wish to file a petition for a stay of the effectiveness of this decision during the time that the appeal is being reviewed by IBLA, the petition for a stay must accompany the Notice of Appeal (43 CFR 4.21). A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the Notice of Appeal and Petition for a Stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If a stay is requested, the requestor has the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay. Except as otherwise provided by law or other pertinent regulations, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards: (1) the relative harm to the parties if the stay is granted or denied, (2) the likelihood of the appellant's success on the merits, (3) the likelihood of immediate and irreparable harm if the stay is not granted, and (4) whether the public interest favors granting the stay.

Unless these procedures are followed, the appeal will be subject to dismissal (43 CFR 4.4.02).

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4.0 Implementation and Monitoring

4.1 Implementation

Many land use plan decisions are implemented or become effective upon approval of the RMP/ROD. Examples of decisions that become effective upon approval of the RMP/ROD include decisions on land health standards, desired outcomes (goals and objectives), allowable uses to achieve outcomes, and all special designations such as an ACEC. Management actions that require additional site-specific project planning as funding becomes available will require further environmental analysis. Decisions to implement site-specific projects are subject to administrative review at the time when such decisions are made.

BLM will continue to involve and collaborate with the public during implementation of this plan. Opportunities to become involved in the plan implementation and monitoring will include development of partnerships and community-based citizen working groups. BLM invites citizens and user groups within the Planning Area to become actively involved in implementation, monitoring, and evaluation of RMP decisions. BLM and citizens may collaboratively develop site-specific goals and objectives that mutually benefit public land resources, local communities, and the people who live, work, or play on the public lands.

4.2 Requirements for Further Environmental Analysis

The RMP/ROD is a programmatic statement describing the impacts of implementing the proposed land use plan decisions and associated management actions described for the Planning Area.

Land use plan decisions that are implemented upon approval of the RMP/ROD do not require any further environmental analysis or documentation until modified through an RMP amendment or revision. Whenever implementation-level plans (e.g., ACEC Management Plans, etc.) are prepared, additional environmental analysis and documentation would be required. Individual management actions or projects requiring additional site-specific project planning, as funding becomes available, would require further environmental analysis.

Site-specific environmental analyses and documentation (including the use of categorical exclusions and determinations of NEPA adequacy where appropriate) may be prepared for one or more individual projects in accordance with management objectives and decisions established in the approved land use plan. In addition, BLM will ensure that the environmental review process includes evaluation of all critical elements, including cultural resources and threatened and endangered species, and completes required USFWS Section 7 consultations and coordination with the SHPO in accordance with the BLM *Cultural Resources National Programmatic Agreement* and California BLM-SHPO protocols.

Interdisciplinary impact analysis will be based on this RMP/ROD and other applicable EISs. If the analysis prepared for site-specific projects finds potential for significant impacts not already described in an existing EIS, another EIS or a supplement to an existing EIS may be warranted.

Upon providing public notice of a decision, supporting environmental documentation will be sent to all affected interests and made available to other publics on request. Decisions to approve implementation-level plans or to implement site-specific projects are subject to administrative review at the time such decisions are made.

4.3 Adaptive Management

Adaptive management is a formal, systematic, and rigorous approach to learning from the outcomes of management actions, accommodating change, and improving management. It involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about their outcomes. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying outcomes. Actions and objectives are then adjusted based on this feedback and improved understanding. In addition, decisions, actions, and outcomes are carefully documented and communicated to others, so that knowledge gained through experience is passed on rather than being lost when individuals move or leave the organization.

This RMP/ROD implements an adaptive management strategy. This adaptive management process is a flexible process that generally involves four phases: planning, implementation, monitoring, and evaluation. As BLM obtains new information, it would

evaluate monitoring data and other resource information to periodically refine and update desired conditions and management strategies. This approach ensures the continual refinement and improvement of management prescriptions and practices.

4.4 Plan Monitoring

Land use plan monitoring is conducted in three stages. The first of which is to ensure that decisions are implemented in accordance with the approved RMP/ROD. This type of monitoring is conducted as RMP decisions become effective or when decisions to approve implementation-level plans or to implement site-specific projects are approved or implemented. The next stage of monitoring is to determine whether land use plan decisions are achieving the desired effects. Effectiveness monitoring provides an empirical database on impacts of decisions and effectiveness of mitigation. Effectiveness monitoring is also useful for improving analytical procedures for future impact analyses and for designing or improving mitigation and enhancement measures. As stated in BLM Land Use Planning Handbook H-1601-1, (page 33):

> "Implementation monitoring is the process of tracking and documenting the implementation (or the progress toward implementation) of land use plan decisions. This should be done at least annually and should be documented in the form of a tracking log or report. The report must be available for public review (one way to accomplish this is an annual planning update which can be sent to those who participated in the planning process or have expressed an interest in receiving the report). The report should describe management actions proposed or undertaken to implement land use plan decisions and can form the basis for annual budget documents. In subsequent years, reports should document which management actions were completed and what further actions are needed to continue implementing land use plan decisions.
>
> Effectiveness monitoring is the process of collecting data and information in order to determine whether or not desired outcomes (expressed as goals and objectives in the land use plan) are being met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. A monitoring strategy must be developed as part of the land use plan that identifies indicators of change, acceptable thresholds, methodologies, protocols, and timeframes that will be used to evaluate and determine whether or not desired outcomes are being achieved. The monitoring process should collect information in the most cost-effective manner and may involve sampling or remote sensing.

> Monitoring could be so costly as to be prohibitive if it is not carefully and reasonably designed. Therefore, it is not necessary or desirable to monitor every management action or direction. Unnecessary detail and unacceptable costs can be avoided by focusing on key monitoring questions and proper sampling methods. The level and intensity of monitoring will vary, depending on the sensitivity of the resource or area and the scope of the proposed management activity. ”

Table 11 includes examples of monitoring that periodically occur within the Planning Area and outlines an approach to monitoring based on needs identified in this RMP. Monitoring will be directed at areas in which specific and important resource values and visitor experiences could be threatened. Key results of monitoring will be summarized in the annual reports.

4.5 Plan Evaluation

The last stage of monitoring is to determine whether a land use plan decision continues to be the correct or proper decision over time. Evaluation monitoring goes beyond effectiveness monitoring and focuses on examining the validity of decisions.

As stated in the BLM Land Use Planning Handbook H-1601-1 (pages 34-36), evaluation is the process of reviewing the land use plan and the periodic plan monitoring reports to determine whether the land use plan decisions and NEPA analysis are still valid and whether the plan is being implemented. Land use plans are evaluated to determine if:

(1) decisions remain relevant to current issues,

(2) decisions are effective in achieving (or making progress toward achieving) desired outcomes,

(3) any decisions need to be revised,

(4) any decisions need to be dropped from further consideration, and

(5) any areas require new decisions.

TABLE 11
EASTERN SAN DIEGO COUNTY RMP/ROD PLAN MONITORING

Type of monitoring	Staff member responsible	How often?	Where will it take place?	Purpose?
Riparian Area Surveys	Natural Resource Specialist	Every 5 years	Each documented riparian area within the planning boundary	To assess proper functioning condition
Bird monitoring	Wildlife Biologist	Each spring and fall	McCain Valley	To assess bird populations and overall ecosystem health
Tamarisk removal/ monitoring	Natural Resource Specialist/ Wildlife Biologist	Each year	Each documented riparian area or infestation site	To boost overall ecosystem health and eradicate an invasive species. To improve wildlife habitat.
Wilderness monitoring	Wilderness Specialist	Each year	Each wilderness boundary in the Planning Area	To monitor activity in and around the WAs.
Law Enforcement (LE) Patrols/ monitoring	LE Units	Year-round	All BLM lands in the Planning Area.	To monitor legal and illegal activity occurring in the Planning Area.
Grazing allotment monitoring	Natural Resource Specialist	Each year	Each grazing allotment in the Planning Area.	To monitor activity, forage conditions, water sources and range improvements on each grazing allotment in the Planning Area.
Vehicle counters	Outdoor Recreation Planner	Year-round	At Lark Canyon & Cottonwood Campground	To monitor visitor use patterns at the developed campgrounds in the Planning Area.
Campground hosts/ campgrounds monitoring	Outdoor Recreation Planners/ Campground hosts	During summer high use season	At Cottonwood Campground	To monitor visitor use patterns at the developed campgrounds in the Planning Area.
Cultural resources monitoring	Archaeologist	Year-round	All BLM lands in the Planning Area.	To monitor cultural sites for visitor use and vandalism/theft.
CDFG Bighorn Sheep surveys	CDFG/Wildlife Biologist	Each spring/ summer	Peninsular Bighorn Sheep habitat in the Planning Area.	To monitor populations of Peninsular bighorn sheep in the Planning Area.

TABLE 11
EASTERN SAN DIEGO COUNTY RMP/ROD PLAN MONITORING (CONT.)

PLAN MONITORING

As outlined in the RMP, the BLM will monitor and evaluate management strategies and resource conditions and trends to determine the effectiveness of the RMP and to ensure that its implementation is achieving the desired results. Information on resource conditions obtained through monitoring will be used to assess the effectiveness of management strategies and evaluate whether or not management should be adapted to accommodate new information, changes in demands on resources, or other considerations.

The BLM will monitor Lark Canyon OHV area to quantify the number of recreational visits, types of recreational activities and use patterns, accomplishment of management objectives, and potential adverse impacts to resources and visitor experiences from use of the areas. The results of the monitoring will provide an opportunity to identify actions to protect resources, enhance visitor experiences, and deal with health and safety needs in the area.

The monitoring program will include such actions as:

• Patrolling roads, trails, and areas to observe recreation use where it is concentrated;

• Monitoring road traffic counters and site registers;

• Monitoring birds in McCain Valley; and

• Monitoring riparian areas throughout the Planning Area.

Monitoring will help the BLM to detect and document natural and human-induced changes in resource conditions and visitor experiences, and offer insights into the effectiveness of resource management policies and objectives. It will also help agency personnel understand what might be driving the changes requiring intervention (corrective management actions or strategies). Monitoring will be directed at areas in which specific and important resource values and visitor experiences could be threatened.

In making these determinations, the evaluation should consider whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, and whether there is new data of significance to the plan. The plan should be periodically evaluated (at a minimum every 5 years) as documented in an evaluation schedule. Plan evaluations should also be completed prior to any plan revisions and for major plan amendments.

Evaluations may identify resource needs and means for correcting deficiencies and addressing issues through plan maintenance, amendments, or new starts. They should also identify where new and emerging resource issues and other values have surfaced. Evaluations may also identify new and innovative practices that improve effectiveness and efficiency so that other offices may benefit. The state and field office will identify an interdisciplinary team that will complete the evaluation(s), and the State Director should approve or concur with all evaluations.

An evaluation report documenting the findings of the evaluation must be prepared. Following State Director approval or concurrence, the report will be made available to the public. Guidance on the report format is included in the BLM *Land Use Planning Handbook* H-1601-1, page 36.

Evaluation of the RMP will generally be conducted every five years, unless unexpected actions, new information, or significant changes in other plans, legislation, land conveyances, or litigation triggers an evaluation. The following estimated evaluation schedule will be followed for the *Eastern San Diego County RMP*:

- October 2013
- October 2018
- October 2023
- October 2028

Evaluations will follow the protocols established by the BLM *Land Use Planning Handbook* H-1601-1 or other appropriate guidance in effect at the time the evaluation is initiated.

4.6 Plan Maintenance

The BLM regulation in 43 CFR 1610.5-4 provides that land use plan decisions and supporting components can be maintained to reflect minor changes in data. Maintenance is limited to further refining, documenting, or clarifying a previously approved decision incorporated in the plan. Maintenance must not expand the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved plan.

Plan maintenance is not considered a plan amendment and does not require formal public involvement, interagency coordination, or the NEPA analysis required for making new land use plan decisions. Maintenance actions must be documented in the plan or supporting components (i.e., recorded so that the change and Field Manager concurrence are evident). Examples of maintenance actions include: 1) Correcting minor data, typographical, mapping, or tabular data errors in the planning records after a plan or plan amendment has been completed; 2) refining the known habitat of a special status species addressed in the plan based on new information; and, 3) modifying or waiving the lease stipulation language in the RMP/ROD consistent with the criteria outlined in the land use plan.

4.7 Plan Modification

4.7.1 Amending the RMP

Plan amendments (see 43 CFR 1610.5-5) change one or more of the terms, conditions, or decisions of an approved land use plan. These decisions may include those relating to desired outcomes; measures to achieve desired outcomes, including resource restrictions; or land tenure decisions. Plan amendments are most often prompted by the need to: 1) Consider a proposal or action that does not conform to the plan; 2) implement new or revised policy that changes land use plan decisions, such as an approved conservation agreement between the BLM and the USFWS; 3) respond to new, intensified, or changed uses on public land; and 4) consider significant new information from resource assessments, monitoring, or scientific studies that change land use plan decisions.

The BLM regulations in 43 CFR 1600 and the NEPA process detailed in the CEQ regulations in 40 CFR 1500 guide preparation of plan amendments. The process is tailored to the anticipated level of public interest and potential for significant impacts.

4.7.2 Revising the RMP

RMP revisions (see 43 CFR 1610.5-6) involve preparation of a new RMP to replace an existing one. RMP revisions are necessary if monitoring and evaluation findings, new data, new or revised policy, or changes in circumstances indicate that decisions for an entire plan or a major portion of the plan no longer serve as a useful guide for resource management. Plan revisions are prepared using the same procedures and documentation as for new plans.

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Acronyms

ACEC	Area of Critical Environmental Concern
AMR	Appropriate Management Response
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
CAL FIRE	California Department of Forestry and Fire Protection
CALPIF	California Partners in Flight
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DEIS	Draft Environmental Impact Statement
DOI	United States Department of the Interior
DRMP	Draft Resource Management Plan
DRMP/DEIS	Draft Resource Management Plan and Draft Environmental Impact Statement
ECFO	(BLM) El Centro Field Office
ECMSCP	East County Multi-Species Conservation Program
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement

FEIR	Final Environmental Impact Report
FLPMA	Federal Land Policy and Management Act of 1976
FLREA	Federal Lands Recreation Enhancement Act
GIS	Geographic Information System
IB	(BLM) Information Bulletin
IBLA	Interior Board of Land Appeals
IMP	(BLM) Interim Management Policy and Guidelines for Lands under Wilderness Review
IPM	Integrated Pest Management
KOP	Key Observation Point
MOU	Memorandum of Understanding
MPC	Materials Processing Center
MS	(BLM) Manual Section
MU	Management Unit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NGO	Non-Governmental Organization
NOI	Notice of Intent
NRHP	National Register of Historic Places
NST	National Scenic Trail
OHV	Off-Highway Vehicle
PLO	Public Land Order
PRMP	Proposed Resource Management Plan
PRMP/FEIS	Proposed Resource Management Plan and Final Environmental Impact Statement

R&PP	Recreation and Public Purposes Act
RAMP	Recreation Area Management Plan
RMP	Resource Management Plan
RMP/EIS	Resource Management Plan and Environmental Impact Statement
RMP/ROD	Resource Management Plan and Record of Decision
RMZ	Recreation Management Zone
ROD	Record of Decision
ROW	Right-of-Way
RUP	Recreation Use Permit
SHPO	State Historic Preservation Officer
SMARA	Surface Mining and Reclamation Act
SRMA	Special Recreation Management Areas
SRP	Special Recreation Permit
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USBP	Department of Homeland Security Customs and Border Protection United States Border Patrol
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
VRM	Visual Resource Management
WA	Wilderness Area
WSA	Wilderness Study Area
WUI	Wildland Urban Interface

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References

The following documents are cited in the RMP/ROD. For a complete list of references used and cited during the evaluation process please consult the PRMP/FEIS.

Avian Power Line Interaction Committee

2006 Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.

California Partners in Flight (CalPIF)

2002 Version 2.0. The Oak Woodland Bird Conservation Plan: a Strategy for Protecting and Managing Oak Woodland Habitats and Associated Birds in California (S. Zack, Lead author). PRBO Conservation Science, Stinson Beach, CA.

2004 Version 2.0. The Coastal Scrub and Chaparral Bird Conservation Plan: a Strategy for Protecting and Managing Coastal Scrub and Chaparral Habitats and Associated Birds in California (J. Lovio, Lead author). PRBO Conservation Science, Stinson Beach, CA.

California, State of

2006a Natural Diversity Data Base. Nongame-Heritage Program, Department of Fish and Game, Sacramento.

California Department of Fish and Game

2005 The Status of Rare, Threatened, and Endangered Plants and Animals in the State of California 2000-2004.

California State Parks

2005 Anza Borrego Desert State Park Final General Plan and EIR. February.

County of San Diego

2007 Overview of East County MSCP Plan. Accessed http://www.sdcounty.ca.gov/mscp/ec_overview.html 7/30/2007.

National Energy Policy Development Group

2001 National Energy Policy; Reliable, Affordable, and Environmentally Sound Energy for America's Future. May.

Osborne, K.

2005 Draft Habitat Evaluations for Quino Checkerspot Butterfly on Eight Linear Miles of Wind Turbine Array Sites, San Diego CountyPrepared for TetraTech, Inc.. April 9.

2006 Focused Adult Survey for Quino Checkerspot Butterfly (*Euphydryas editha quino*) on Approximately 19 square kilometers of BLM lands in the Table Mountain Area, San Diego County, California. Osbourne Biological Consulting. June 26.

Riparian Habitat Joint Venture (RHJV)

2004 Version 2.0. The Riparian Bird Conservation Plan: a Strategy for Reversing the Decline of Riparian Associated Birds in California. California Partners in Flight.

Tierra Environmental Services

2006 Focused Survey Report for the Quino Checkerspot Butterfly, Lark Canyon Study Site. Prepared for BLM California Desert District Office. June 29.

U.S. Department of Agriculture (DOA). Forest Service, Pacific Northwest Region.

1982 Comprehensive Management Plan for the Pacific Crest National Scenic Trail. January.

U.S. Department of the Interior. Bureau of Land Management (DOI BLM)

1979 McCain Valley Resource Conservation Area Recreation Activity Management Plan. BLM, Riverside, CA, District Office.

1981a Eastern San Diego County Management Framework Plan. April.

1988a California Vegetation Management Final Environmental Impact Statement. August.

2005d Quino Checkerspot Butterfly Habitat Assessment for BLM Lands Managed by the El Centro Field Office.

2005f Record of Decision. Implementation of a Wind Energy Development Program and Associated Land Use Plan Amendments. December.

2007a Record of Decision for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement. September.

2007b Final Programmatic Environmental Impact Statement; Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States. June.

U.S. Fish and Wildlife Service (USFWS)

1999 Arroyo Southwestern Toad (*Bufo microscaphus californicus*) Recovery Plan. Portland, OR vi+119 pp.

2000 Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California. Portland, OR. xv + 251 pp.

2002a *Southwestern Willow Flycatcher Final Recovery Plan.* Alberquerque, NM. i-ix + 210 pp. Appendices A-O.

2003 Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). Portland, OR. X + 179 pp.

2005b Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Arroyo Toad (*Bufo californicus*); Final Rule. *Federal Register* Vol. 70, No. 70. April 13.

2006 Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Laguna Mountains Skipper. Final Rule. *Federal Register* Vol. 71, No. 238. December 12.

2007 Laguna Mountains Skipper Habitat Ranking Model. Prepared by E. Luciani. June 11.

2008 Section 7 Consultation/Conference Opinion on the Eastern San Diego County Resource Management Plan (FES-07-30; 1610 1150; CA-670.27). September 30, 2008.

Wells, J.M. and B.E. Kus

2001 Least Bell's Vireo Surveys and Nest Monitoring at Anza Borrego Desert State Park in 2000. January.

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APPENDICES

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APPENDIX A

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Errata for Eastern San Diego County Proposed RMP and Final EIS

1. From Section 5.2.3 of the PRMP/FEIS: "Complete comment letters are on the compact disc published with this PRMP/FEIS." … "Consequently, the numbering of comment letters on the CD and in the Response to Public Comments below includes 201 comment letters, but numbering of letters up to 227."

   A compact disc was not included with the PRMP/FEIS, but was available upon request.

2. Table 4-2 of the PRMP/FEIS: carbon monoxide (CO) in last row should have been summed from the rows above to be a total of 22.2 tons per year rather than 1.4.

3. The heading for under Cultural Resources, Section 2.3.9.2 was "Management Actions and Land Use Plan Decisions" in the PRMP/FEIS. This titling was found to be inconsistent with the rest of the document, and was revised to be simply "Management Actions" in the Cultural Resource Management section of the ROD, Section 2.9.2.

4. The fourth item in Table 2-2 of the PRMP/FEIS cites 43 CFR 836531-5(b); this is incorrectly cited and should refer to 43 CFR 8365.1-(b).

5. The second paragraph of Section 3.16.2.2 of the PRMP/FEIS states that "Surface disturbance associated with the level of historical underground mine activity in the Planning Area is less than 10 acres per operation." The fourth paragraph in this section was intended to be consistent with this historical level of activity and should read as follows: "Based on the level of activity in the last 20 years and the potential for locatables on BLM-administered lands within the Planning Area, potential future mineral development activity is estimated at one gold mine and one gemstone operation within the next 10 years with mines **no** greater than 10 acres of surface disturbance" (emphasis added).

6. The following Management Action from Section 2.3.18.2.2 of the PRMP/FEIS was stated as: "Locate new major ROWs in designated corridors, unless an evaluation of the project shows that location outside of a designated corridor is the only practicable alternative." In order to clarify that the major ROWs referred specifically to ultilty ROWs, the wording of this Management Action has been revised as follows in Section 2.17.2.2 of the ROD:

ROW-03 Locate new major utility ROWs only in a designated corridor, unless an evaluation of the project shows that location outside of a designated corridor is the only practicable alternative."

7. The following Visual Resources Management Action from Section 2.3.11.2 of the PRMP/FEIS was deleted from the Visual Resources Management Section of the RMP/ROD (Section 2.11.2), since VRM is a classification only process and would never result in surface-disturbance: "Proposed activities (e.g., surface-disturbing activities) would not be approved, until compliance with Section 106 of the NHPA has been completed and documented, including where applicable, consultation with the SHPO and federally recognized tribes."

8. The following sentence from Section 3.4.6 of the PRMP/FEIS: "In addition, federal reserved water rights for the two wilderness areas were explicitly established by statute at Section 707 of the California Desert Protection Act of Act." should read "In addition, federal reserved water rights for the two wilderness areas were explicitly established by statute at Section 70**6** of the California Desert Protection Act."

9. The following reference, cited in Section 4.2.1 of the PRMP/FEIS: "(EPA 1996, Section 13.1)" should read (EPA 199**5**, Section 13.1), as it is listed in the References section of the PRMP/FEIS.

10. In the Executive Summary, Table ES-1 and in Table 2-4, of the PRMP/FEIS, under Special Status Species Management, both "Critical Habitat would be an avoidance area for Renewable Energy" and "Critical Habitat would be an exclusion area…" were marked under Alternative E. The former one was erroneously marked and critical habitat would be an exclusion area for Renewable Energy under Alternative E of the PRMP/FEIS.

11. Table 2-2 incorrectly referenced 43 CFR 8365.1-5(b) as 8365**3**1-5(b). This regulation has been revised in the RMP/ROD.

12. Table 4-15 makes reference to Table 2-20 in several places within the table. The reference should have been made to Table 2-2**1** instead.

13. Section 4.15.3 of the PRMP/FEIS incorrectly references the wind energy model developed by PPM Energy. One revision made between the DRMP/DEIS and the PRMP/FEIS was to use the wind energy model developed by NREL to evaluate lands with wind energy potential as described in Section 3.15.5 of the PRMP/FEIS. Section 4.15.3 was not revised upon publication of the PRMP/FEIS.

14. Map 2-20 (Routes of Travel) incorrectly displayed the In-Ko-Pah ACEC boundary for Alternatives B and E. Map 2-7 (Special Designations) for Alternatives B and E shows the correct ACEC boundary.

APPENDIX B

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011

In Reply Refer To:
FWS-SDG-08B0465-08F0507

SEP 30 2008

MEMORANDUM

To: Field Manager, El Centro Office, Bureau of Land Management
El Centro, California
(Attn: Vicki L. Wood and Daniel Steward)

From: for Assistant Field Supervisor, Carlsbad Fish and Wildlife Office
Carlsbad, California

Subject: Section 7 Consultation/Conference Opinion on the Eastern San Diego County Resource Management Plan (FES-07-30; 1610 1150; CA-670.27)

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the Eastern San Diego County proposed Resource Management Plan (ESDRMP) and its effects on least Bell's vireo (*Vireo bellii pusillus*; LBV), Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) and its designated and revised proposed critical habitat, and Peninsular bighorn sheep (*Ovis canadensis*; PBS) and its designated and revised proposed critical habitat pursuant to section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). This plan is an update of the Eastern San Diego County Management Framework Plan of 1981. Bureau of Land Management (BLM) requested formal consultation only on the Quino and its designated critical habitat. However, based on our analysis of the Proposed Action and its potential effects to listed species, we will formally consult on LBV and PBS in addition to Quino in this programmatic level biological opinion. Although BLM requested our concurrence that the ESDRMP is "not likely to adversely affect" PBS, LBV, southwestern willow flycatcher (*Empidonax traillii extimus*), and Laguna Mountains skipper (*Pyrgus ruralis lagunae*), we can only make that determination for southwestern willow flycatcher and Laguna Mountains skipper.

Of the ten species of plants and animals listed as threatened or endangered that may occur within the Planning Area, the following five species are not expected to be found within BLM-administered lands within the Planning Area based on the distribution of known occurrences and presence of suitable habitat. BLM determined and the Service concurred, that there would be a "no effect" to the unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), arroyo toad (*Bufo californicus*), Mexican flannelbush (*Fremontodendron mexicanum*), Nevin's barberry (*Berberis nevinii*), and San Bernardino blue grass (*Poa atropurpurea*). Thus, we will not address these species in this programmatic consultation.

TAKE PRIDE IN AMERICA

In this biological opinion, we also formally consult on critical habitat designated in 2001 and 2002, for PBS and Quino, respectively, and conference on revised critical habitat proposed in 2007 for PBS. There is no designated critical habitat for LBV in the Planning Area and while revised critical habitat proposed in 2008 for Quino occurs within the overall Planning Area, there is no overlap with BLM-administered lands.

This biological opinion is based on: (1) Biological Assessment (BA) for the BLM Eastern San Diego County Proposed Resource Management Plan, November 20, 2007; (2) Eastern San Diego County Proposed Resource Management Plan (ESDRMP) and Final Environmental Impact Statement (FEIS), Volumes I and II, November 2007; (3) the Eastern San Diego County Planning Unit Management Framework Plan, April 1981; (4) Biological Evaluation of the Eastern San Diego County Management Framework Plan, February 2001; (5) Record of Decision to the 1985 Plan Amendments to the California Desert Plan and the Eastern San Diego County Management Framework Plan; (6) In-Ko-Pah Mountains Area of Critical Environmental Concern Management Plan, 1988; (7) Eastern San Diego County Planning Unit Section 202 Wilderness Study Areas, 1988; (8) Table Mountain Area of Critical Environmental Concern Management Plan, October 1984; (9) 1983 Amendments to the Eastern San Diego County Management Framework Plan; (10) additional requested species information transmitted via email on August 3, 2004; (11) various written and oral communications, including meetings between the Service and the BLM; (12) previous biological opinions on sheep and cattle grazing; (13) approved and draft recovery plans for the species within the Planning Area; (14) notice of change to the Eastern San Diego County Proposed Resources Management Plan, July 28, 2008; and (15) various reports and publications, as indicated by the citations herein. A complete administrative record of this consultation is on file in the Service's Carlsbad Fish and Wildlife Office.

CONSULTATION HISTORY

The Biological Evaluation, Eastern San Diego County Planning Unit Management Framework Plan (ESDMFP), and a request to initiate formal section 7 consultation on the ESDMFP dated February 12, 2001, was received by the Service on February 1, 2002. In January 2004 we met with the California Desert District Manager to review the status of this and other pending consultations. On February 18, 2004, we received the Record of Decision to the 1985 Plan Amendments to the California Desert Plan and the Eastern San Diego County Management Framework Plan, the In-Ko-Pah Mountains Area of Critical Environmental Concern Management Plan, and the Eastern San Diego County Planning Unit Section 202 Wilderness Study Areas. On February 23, 2004, we received the Table Mountain Area of Critical Environmental Concern Management Plan and the 1983 Amendments to the Eastern San Diego County Management Framework Plan. On March 8, 2004, we responded to your initiation request and asked for additional information needed to more comprehensively analyze the effects of the ESDMFP and an update on the interim measures. On June 30, 2004, the Service and BLM met regarding the ESDMFP consultation. On August 3, 2004, Mary Beth Woulfe of the Service and Lynnette Elser of BLM had a conference call to discuss the Service's March 8, 2004, letter

regarding the consultation. We received the additional species information on August 3, 2004, via electronic mail. On August 31, 2004, we sent an initiation letter to BLM. On September 2, 2004, we received information on hunting via electronic mail. On September 20, 2004, we received information regarding known existing land uses in the Planning Area via electronic mail. On September 21, 2004, we received information regarding existing mining claims within the Planning Area via electronic mail. The Service sent an electronic mail to BLM with a draft "Description of the Proposed Action" section for review and comment on October 6, 2004. On October 13, 2004, we received an Amended Biological Evaluation from BLM, dated October 7, 2004. On March 3, 2005, we received comments on the "Description of the Proposed Action" section from BLM. On July 10, 2006, BLM requested a species list from the Service via email and the Service responded via email on July 11, 2006, and by letter on July 18, 2006.

In February 2007, the Service received the Draft Eastern San Diego County Proposed Resource Management Plan and Draft Environmental Impact Statement (DEIS). On June 7, 2007, the Service sent comments to BLM on the Draft ESDRMP via electronic mail. The Service and BLM met on June 14, 2007, to review the comments on the Draft ESDRMP. On November 20, 2007, the Service received an electronic copy of the request to initiation formal section 7 consultation on the ESDRMP and the associated BA, and FEIS, and on December 3, 2007, we received the hard copy version of these documents. Pursuant to 50 CFR 402.14(g)(5), we provided draft sections of the biological/conference opinion to BLM for review and approval. We sent the "Description of the Proposed Action" section via electronic mail to BLM on May 5, 2008 and received BLM's comments and confirmation that this section as outlined below is an accurate summary of the proposed ESDRMP on May 8, 2008 via electronic mail. On June 5, 2008, BLM and the Service met to discuss the Proposed Action and the consultation. We sent the draft "Conservation Measures" section to BLM on June 16, 2008, via electronic mail and received BLM's concurrence on this section with edits via electronic mail on June 27, 2008. We sent the draft "Effects of the Action" section to BLM on July 23, 2008, via electronic mail and received BLM's comments via electronic mail on September 2, 2008. On August 15, 2008, the Service and BLM conducted a site visit of the McCain Valley area to assess habitat in areas proposed to be made available for wind and geothermal energy development as a result of BLM's notice of change to the ESDRMP published in the *Federal Register* on July 28, 2008 (BLM 2008). On September 11, 2008, we sent the draft biological opinion via electronic mail to BLM for review and received comments on September 15, 2008 via electronic mail. We incorporated BLM's comments on the "Description of the Proposed Action", "Conservation Measures" and "Effects of the Action" sections into this final biological opinion as appropriate.

DESCRIPTION OF THE PROPOSED ACTION

BLM has prepared a land use plan for 102,869 acres of public land in eastern San Diego County (Figure 1-1 in the BA). The Proposed Action is the implementation of the proposed ESDRMP, which is an update of the ESDMFP of 1981 and incorporates various elements of that plan and subsequent amendments. The Proposed Action also incorporates changes to the ESDRMP

outlined in a notice of change published in the *Federal Register* on July 28, 2008 (BLM 2008). Changes to the ESDRMP outlined in this notice are associated with an increase in the area available for wind and geothermal energy development and changes to Visual Resource Management (VRM) designations. The ESDRMP Planning Area is immediately adjacent to the southwestern boundary of the California Desert Conservation Area (CDCA) and extends from the Riverside-San Diego County line on the north to the United States-Mexico border on the south. Please refer to the proposed ESDRMP, the BA, its EIS, and its amendments for a more detailed synopsis.

Amendments to the ESDMFP were made in 1982, 1983, and 1985. The 1982 amendment modified recommendations for the Sawtooth Wilderness Study Area. The 1983 amendment modified the grazing prescriptions in four allotments, while the 1985 amendment added 595 acres of acquired lands to the ESDMFP. Eight Interim Measures were developed that primarily addressed Peninsular Ranges bighorn sheep and provided additional protection to this species until the revised ESDRMP was completed.

Purpose and Function of the ESDRMP

This ESDRMP guides BLM land use planning decisions, including the identification of allowable extractive, commercial, passive, and recreational uses for approximately the next fifteen years. The planning document sets the directions for future uses but does not authorize specific projects. Decisions are made in the plan on acquisition and disposal of lands, designation of areas for resource protection, identification of areas with potential for renewable energy development, and appropriate recreation. Routes of travel are the only proposed land use to be addressed under this programmatic biological opinion. Specific projects and permit applications are evaluated as they are proposed in the future using the guidance set forth in the ESDRMP and this biological opinion. Future project-specific actions will require additional review under the Act by the Service as described below at the end of the "Description of the Proposed Action" section.

The goal and purpose of the proposed ESDRMP is to provide guidance in the management of the lands and resources administered by the El Centro Field Office in Eastern San Diego County to achieve the following:

- Address conflicts between motorized/mechanized, and non-motorized/mechanized recreationists.
- Protect sensitive natural and cultural resources from impacts due to recreational use and other land uses.
- Provide guidance for renewable energy development.
- Address other planning issues raised during the scoping process.

Other objectives include contributing to groundwater recharge and providing additional recreational opportunities within the Planning Area. The ESDRMP describes BLM policy and

management of public lands along the eastern escarpment of Southern California's Peninsular Ranges. The Planning Area encompasses BLM-managed lands in San Diego County between the Cleveland National Forest and Anza-Borrego Desert State Park and between the Mexican border and the Riverside County line. This Planning Area is within the CDCA, but is not part of the CDCA Plan. Since the ESDMFP approval in 1981, six species of animals known or suspected to occur within the Planning Area have been listed as threatened or endangered under the Act. These listings and the decision of the Ninth Circuit Court of Appeals in the 1994 *Pacific Rivers Council vs. Thomas* case-that a management plan constitutes an agency action subject to consultation under the Act-are the basis for this consultation.

Under section 202 of the Federal Land Policy and Management Act (FLPMA) of 1976 and implementing Code of Federal Regulations, BLM is required to prepare and implement management plans that provide a broad framework to guide the management of public lands. A resource management plan makes land use allocations, sets broad protection, conservation, and production goals and establishes restrictions on resource use programs to protect important resource values. In the development of land use plans, FLPMA states that BLM must follow a number of planning and National Environmental Policy Act (NEPA) analysis principles and processes. Management guidance for resource programs includes various laws, Executive Orders, regulations, departmental and agency manuals, and instructional memoranda (Washington and California State Office). Together, these form the basis for the continuing management guidance and decisions that apply to public land resources and programs in the Planning Area. Public lands in the Planning Area will be administered in accordance with the management direction set forth in the ESDRMP, as amended, and the Fallback Standards and Guidelines promulgated at 43 CFR 4180.2 with respect to range management. Some of the Fallback Standards and Guidelines deal specifically with listed species and will be implemented to address species' needs and are herein incorporated by reference.

Policies applicable to the Proposed Action include: (1) management will be on the basis of multiple-use and sustained yield; (2) public lands identified for disposal are difficult and uneconomic to manage as part of the public lands and are not suitable for management by another Federal department or agency; (3) public lands are to be retained in Federal ownership unless disposal serves the national interest; (4) public lands will be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; this direction will preserve and protect certain public lands in their natural condition, which will provide food and habitat for fish and wildlife and domestic animals, and outdoor recreation/human occupancy and use; (5) public lands will be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber and fiber from public lands, including implementation of the Mining and Minerals Policy Act of 1970; (6) designation and protection of Areas of Critical Environmental Concern (ACEC); and (7) long-term versus short-term benefits to the public.

All BLM actions are subject to the requirements of NEPA and the Clean Water Act. Mineral exploration and development are managed in compliance with the General Mining Law of 1872; Mining and Minerals Policy Act of 1970; National Materials and Minerals Policy, Research and Development Act of 1980; Material Sale Act of 1947; Mineral Leasing Act of 1920; Geothermal Steam Act of 1970; the *Federal Regulations* that codify the above mentioned laws; and BLM Mineral Resource Policy of 1984.

Public lands in the Planning Area will be managed in compliance with the Act. In addition, management will be guided by the following specific plans:

- California Desert Conservation Area Plan, as amended (1980)
- Eastern San Diego County Management Framework Plan (MFP;1981)
- 1983 Amendments to the Eastern San Diego County MFP (1983)
- Table Mountain Area of Critical Environmental Concern Management Plan (1984)
- Revised Recovery Plan for the Unarmored Threespine Stickleback (Service 1985)
- In-Ko-Pah Mountains Area of Critical Environmental Concern Management Plan (1988)
- Draft Recovery Plan for the Least Bell's Vireo (Service 1998)
- Recovery Plan for the Arroyo Southwestern Toad (Service 1999)
- Recovery Plan for the Bighorn Sheep in the Peninsular Range (Service 2000)
- Recovery Plan for the Quino Checkerspot Butterfly (Service 2003)

Designated wilderness areas are managed under the provisions of the Wilderness Act, regulations promulgated in 43 Code of Federal Regulations (CFR) Part 8560, and policies established in BLM wilderness manual handbooks.

Resources

There are several specific Resource Areas identified in Chapter 4 of the Final EIS and BA where management is addressed within the ESDRMP Planning Area. A detailed description of these Resource Areas can also be found in the Final EIS. A detailed description of the changes made to the "Lands and Realty Management: Land use authorization" and "Visual Resources Management" Resource Area descriptions following publication of the ESDRMP can be found in the *Federal Register* notice published July 28, 2008 (BLM 2008). The Resource Areas include the following:

Rangeland Health Standards Management: Under the Proposed Action, BLM would continue to use existing National Fallback Standards for grazing allotments. The Fallback Standards include: (1) upland soils exhibit infiltration and permeability rates that are appropriate to soil types, climate, and landform; (2) riparian-wetland areas are in proper functioning condition; (3) stream-channel morphology (including but not limited to gradient, width/depth ratio, channel roughness, and sinuosity) and functions are appropriate for the climate and landform; and (4) healthy, productive, and diverse populations of native species exist and are maintained.

Air Resources Management: Under the Proposed Action, BLM would maintain or improve air quality as established by the National Ambient Air Quality Standards and California Ambient Air Quality Standards through cooperative management of emissions with industry, the State of California, and Federal agencies. The BLM would strive to minimize, within the scope of its authority, any emissions that may cause violations of air quality standards, add to acid rain, or degrade visibility. The BLM would comply with the State of California standards for all proposed actions that would contribute to particulate matter emissions in the air as a result of actions taken in the proposed ESDRMP.

Soil Resources Management: Under the Proposed Action, BLM would take steps to control erosion on all designated routes of travel, burned areas, riparian areas, and grazed areas by allowing plant growth to resume in these areas after catastrophic events such as fires and floods. The BLM would employ Best Management Practices (BMPs), revegetation, and strategic placement of rocks to control erosion. Erosion control measures would also be incorporated on a case-by-case basis. The BLM would minimize surface disturbance from authorized activities and post-activity and restore surfaces to a pre-disturbance or stable condition. Construction activities would be restricted when soils are susceptible to a heightened risk of erosion, and ground-disturbing activities would be limited when soils are wet in order to avoid compaction of soils. Proposed activities would not be approved until compliance with section 106 of the National Historic Preservation Act (NHPA) has been completed and documented, including where applicable, consultation with the State Historic Preservation Officer (SHPO) and federally recognized tribes.

Water Resources Management: Under the Proposed Action, BLM would maintain existing proper functioning of watersheds and prevent or reduce water quality degradation by applying BMPs or other specific mitigation measures, when applicable. BLM would continue to maintain or improve water quality in accordance with State and Federal standards, and consult with the appropriate state agencies on proposed projects that may significantly affect water quality. BMPs would be applied on public lands within municipal watersheds to protect water quality and quantity. Erosion control measures would be implemented as discussed in the "Soil Resources Management" section above. Also, NHPA and SHPO consultation and coordination would be implemented as discussed in the "Soil Resources Management" section above.

Vegetation Resource Management: Under the Proposed Action, BLM would continue to strive to maintain the health of desired vegetation communities according to BLM's Proper Functioning Condition Protocol as cited in the *Process for Assigning Proper Functioning Condition* (BLM Technical Reference 1737-9) and *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas* (BLM Technical Reference 1737-15). Plant communities, priority plant species, invasive non-native plant management, and vegetative use authorizations would all be covered under this management action. Actions would include but not be limited to avoiding adverse impacts, restoring surface disturbance and requiring minimum impact approaches. Other actions would include using native plant materials

for landscaping, treating and/or removal of non-native invasive plant species, protecting desired plant communities, implementing protection, restoration, and mitigation measures where necessary, and banning wood cutting in the Planning Area.

Wildlife Resource Management: The Sikes Act of 1974 authorized BLM in cooperation with the State agencies responsible for the administration of fish and wildlife laws to plan, develop, maintain and coordinate programs for the conservation and rehabilitation of fish and wildlife on public lands within its jurisdiction. Other laws, policies, and regulations direct management on BLM-administered public lands as identified in the proposed ESDRMP. Under the Proposed Action, BLM would continue to conduct law enforcement patrols and enforce game violations on BLM lands and will continue to work cooperatively with the California Department of Fish and Game (CDFG) by sharing data and providing appropriate agreements or permits for conducting wildlife management activities on BLM lands. BLM is cooperating with the County of San Diego on the development of the San Diego East County Multiple Species Conservation Plan (MSCP).

Special Status Species Management: BLM identifies special status species management as fish, wildlife, and plants that require specific conservation measures or management directions due to population or habitat concerns. Under the Proposed Action, BLM would employ special management measures necessary to reduce or eliminate potential adverse impacts to species or habitats, particularly measures to reduce the likelihood of take of listed species under the Act. Special status species are generally described as: (1) federally listed species (endangered, threatened, proposed, or candidate species and designated or proposed critical habitat); (2) State listed species; and (3) BLM sensitive species. Land use decisions on BLM lands would be made consistent with BLM's mandate to protect and recover species listed under the Act and will be consistent with objectives and recommended actions in approved recovery plans.

Cultural Resource Management: Under the Proposed Action, management of cultural resources on BLM lands would be in compliance with several Federal laws as identified in Chapter 2.3.9 of the proposed ESDRMP. Any proposed activities would not be approved until compliance with applicable State and Federal laws has been completed and documented.

Paleontological Resource Management: BLM recognizes paleontological resources found on public lands as a fragile and nonrenewable scientific record of the history of life on earth, and therefore, represent an important component of America's natural history. Under the Proposed Action, BLM would protect and conserve significant paleontological resources as they are discovered on public lands. All lands within the Planning Area would be classified, based on their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. The classifications are based on geology of the area and from existing resource data. The classifications include low, moderate, and high sensitivity levels.

Visual Resource Management: BLM prepared and maintains an inventory of visual values on all public lands in accordance with the Visual Resource Management (VRM) system. The VRM system provides a way to identify, evaluate, and determine the appropriate levels of management of scenic values. The inventory serves as a basis for the designation of VRM management Classes I-IV. The range of VRM management Classes includes the preservation of the existing character of the landscape with very low level of change to management that requires modification of the landscape resulting in a high level of change to the landscape. Under the Proposed Action, BLM would use the VRM classes to minimize visual impacts through development of mitigation measures.

Recreation Resource Management: There are several laws, regulations, policies, and guidelines that authorize and direct BLM recreation management activities. Under the Proposed Action, BLM would identify Special Recreation Management Areas (SRMA) where resources of the public lands attract visitors from the following markets: (1) public lands with a demonstrated community recreation-tourism market will be termed a Community SRMA that will be managed in collaboration with the local community to primarily benefit local residents; (2) public lands with a demonstrated destination recreation-tourism market will be termed a Destination SRMA that will be managed as a regional or national destination through collaborative partnerships; and (3) public lands with a demonstrated undeveloped recreation-tourism market will be termed an Undeveloped Community SRMA that will be managed to intentionally maintain dispersed and undeveloped recreation opportunities. BLM lands outside of SRMAs would be managed as Extensive Recreation Management Areas and limiting management to custodial actions only. Under the Proposed Action, three SRMAs would be designated: Boulevard/Jacumba Destination SRMA (42,673 acres), Julian Destination SRMA (15,170 acres), and Sawtooth Destination SRMA (45,026.).

Lands and Realty Management: The Land and Realty Management Program consists of four parts that include: land tenure, land use authorization (including renewable energy), withdrawals, and utility corridors.

Land tenure: Under the Proposed Action, land tenure would focus on disposing of and acquiring lands or interests in lands. Public lands would be retained in Federal ownership, unless as a result of land use planning it is determined that disposal of a particular parcel would serve the national interest. Public lands would have potential for disposal when they are isolated and/or difficult to manage and do not contain legally protected species of plants or animals, or cultural artifacts. Exceptions would be if another entity is better qualified to protect the sensitive resources or with concurrence of the withdrawing agency. Acquisitions may be acquired by BLM through purchase, exchange, donation, or eminent domain.

Land use authorization: Under the Proposed Action, land use authorization would focus on the public demand requests for rights-of-ways (ROW), permits, leases, and easements. Public land is subject to application for community expansion needs under a wide variety of public land laws.

ROW, permits, leases, and easements will be addressed on a case-by-case basis consistent with management prescriptions identified in on Table 2-21 of the proposed ESDRMP. Leases would not be available for residential purposes. ROWs are anticipated to be in designated corridors unless a location outside of a corridor is the only practicable alternative. Proposed activities would not be approved without compliance with applicable Federal and State laws. Within the Planning Area, there are two existing communication facilities (Table Mountain and Banner Grade). When practicable, future proposed facilities would be consolidated within existing communication facilities. BLM would provide for the production and distribution of renewable energy, consistent with Table 2-21 of the proposed ESDRMP. BLM would encourage the use of public lands for production of renewable energy compatible with management of sensitive resources (i.e., Areas of Critical Environmental Concern).

Withdrawals: A withdrawal removes an area of Federal land from settlement, sale, location, or entry under some or all of the general land laws to maintain other public values in the area or reserving the area for a particular public purpose or program. Withdrawals are also used to transfer the jurisdiction over an area of Federal land from on agency, bureau, or department. BLM will minimize the amount of land withdrawn, and where applicable, revoke existing withdrawals, if the land is no longer needed for the original purpose of the withdrawal. Under the Proposed Action, BLM would continue to review existing withdrawals, including agency withdrawals, periodically to ensure that the reasons for the withdrawal are still valid.

Utility corridor: A utility corridor is a linear strip identified through a planning process as being preferred location for existing and future utility ROWs, and that is suitable to accommodate one or more ROW which are similar or compatible. Under the Proposed Action, to minimize the adverse environmental impacts and the proliferation of separate ROWs, BLM would use ROW corridors to the extent practical, and BLM could grant additional ROW or permits for compatible uses on or adjacent to ROW granted pursuant to FLPMA. In designating ROW corridors and in determining whether a ROW would be confined to the corridor, BLM would take Federal and State land use policies, environmental quality, economic efficiency, national security, safety, and sound engineering and technological practices into consideration.

Mineral Resource Management: Mineral resources would continue to be managed in accordance with BLM's National Mineral Policy, the Energy Policy Act, and the National Energy Policy.

Leasable and salable minerals: Under the Proposed Action, management would involve closing all federally-designated critical habitats, Areas of Critical Environmental Concern (ACECs), and Wilderness Study Areas (WSAs) to mineral extraction. Wilderness Areas (WAs) would be withdrawn from all forms of entry, appropriation, or disposal under the public land laws subject to valid existing rights. Leasable and salable mineral management would consolidate split-estates pursuant to sections 205 and 206 of FLPMA. Through land tenure adjustments, surface

and subsurface (minerals) estates would be consolidated under single ownerships when possible, thereby improving manageability of the Federal lands involved.

Locatable minerals: Under the Proposed Action, management would involve the withdrawal of the In-Ko-Pah and Table Mountain ACECs from mineral entry. WAs would be withdrawn from all forms of entry subject to valid existing rights and, WSAs would continue to be subject to Interim Management Policy. Notices would be required when mechanical equipment is used for exploration or processing and when cumulative disturbance is less than five acres. Mining plans would be required for operations where disturbance is greater than five acres or where bulk sampling would remove 1,000 tons or more.

In withdrawn areas, an investigation and a report to determine the validity of the mining claim would be required prior to approval of a mining plan of operations. A mining plan of operations would be required in any special designation area in accordance with existing 3809 Regulations. Mining plans of operation would be required in areas designated as closed to off-highway vehicle (OHV) use and in lands or waters known to contain federally listed threatened or endangered species or proposed or designated critical habitat. Surface disturbance associated with casual use activity in designated critical habitat causing more than negligible disturbance would require a notice for review or a plan of operations for approval. All post-plan created mining disturbances would be reclaimed to meet the surrounding natural environment. Mining activities would be in compliance with all State of California reclamation requirements, particularly the Surface Mining and Reclamation Act (SMARA).

Wildland Fire Management: The BLM coordinates with the California Department of Forestry and Fire Protection (CAL FIRE) and other agencies to manage fire in accordance with the nationwide BLM fire policy and the National Fire Plan. CAL FIRE has jurisdiction over first response. The BLM will provide a resource advisor to consult in an effort to avoid or minimize impacts to sensitive resources. This integrates fire and fuels management with other land and resource management activities to minimize impacts to natural and cultural resources during fire suppression activity on BLM-administered lands within the Planning Area. Under the Proposed Action, management actions would include, but not be limited to, implementation of fuel reduction programs where needed, with wildland fuels decreased and maintained at a manageable level, and creating conditions conducive to safe, efficient, and effective firefighting. Fire and fuel management treatments may include fire suppression, prescribed fire, and non-fire treatments (manual, chemical, mechanical, or biological treatments).

Special Designation Management: Special designations include Wilderness Areas (WAs), Wilderness Study Areas (WSAs), National Scenic Trails (NSTs), and Areas of Critical Environmental Concern (ACECs). Through the planning process, BLM designates ACECs following the criteria outlined in law (FLPMA), regulations (43 CFR 1610.7-2), and policy (Manual 1613).

Wilderness Areas: Under the Proposed Action, management of WAs would involve the continuation of monitoring, signing, and restoration as necessary. WAs would be withdrawn from mineral entry, mineral leasing, and mineral sales. No structures or other installations, no use of motor vehicles, motorized equipment, or other form of mechanized transport would be allowed. Administrative use of vehicles and structures would be the minimum necessary for the administration of these areas. The use of prescribed fire would be limited to the following: (1) to reintroduce or maintain the natural condition of a fire-dependent ecosystem; (2) to restore fire where past fire control measures had interfered with natural ecological processes; (3) where a primary value of a given wilderness would be perpetuated as a result of burning; or (4) where it would perpetuate threatened and endangered species (MS-8560.35).

Wilderness Study Areas: Under the Proposed Action, BLM would continue to manage WSAs under BLM's Interim Management Policy until Congress designates them as wilderness or releases them from WSA status. WSAs would not be leased for oil and gas or geothermal extraction. Use of motor vehicles, motorized equipment, or other forms of mechanical transport would not be allowed off boundary roads or newly constructed trails since 1976 within the WSAs. Conditions and uses in and around WSAs would be monitored to identify actions or uses that impair the wilderness values of the Planning Area.

Areas of Critical Environmental Concern: Under the Proposed Action, the In-Ko-Pah ACEC boundary would be adjusted to exclude the area that overlaps the Carrizo Gorge Wilderness and Carrizo Gorge WSA, and expanded to include the adjacent 2001 PBS critical habitat along the western and southern boundaries. The Table Mountain ACEC would also be expanded to include 2001 PBS critical habitat that is to the north between the northern boundary of the ACEC and the southern boundary of the Table Mountain WSA. This boundary change would result in an additional layer of protection for 1,631 acres of PBS critical habitat on BLM-administered lands within the Planning Area (Figure 2-1 of the BA). The protection of relevant and important values would take precedence over authorized land uses. The BLM would retain the ACECs in public ownership and seek to acquire non-Federal lands and interests in lands within the ACECs from willing sellers by purchase, exchange, or donation. Future acquisitions of in-holdings and edge-holdings would be managed in accordance with the designated ACEC. Treatment for hazardous fuels and non-native invasive or pest species would be allowed. All ACECs would be closed to wood collection, but traditional use by Native Americans will be allowed. Resources within the ACECs would be monitored to detect change and prevent future deterioration.

National Scenic Trail (Pacific Crest National Scenic Trail): Approximately 68 miles of the Pacific Crest NST occur in the Planning Area, 15 miles of which occur on BLM-administered lands within Chariot and Rodriguez Canyons and the San Felipe Hills WSA. Motorized vehicles and mountain bikes are not allowed on the Pacific Crest NST. The proposed ESDRMP would continue to manage the portion of the Pacific Crest NST within BLM-administered lands in accordance with the existing management plan and the existing Memorandum of Understanding (MOU) with the U.S. Forest Service.

Livestock Grazing Management: Nine criteria were used to develop land use decisions for livestock grazing management, including: (1) listed species critical habitat; (2) vegetation/community types, range improvements; (3) water sources and topography; (4) rangeland health standards; and (5) public interest in the allotment. Based on the results of this analysis, all allotments would be unavailable to grazing under the Proposed Action. This will make approximately 34,291 acres of grazing lands within 2001 designated PBS critical habitat unavailable for grazing (Figure 2-2 of the BA). If necessary to protect resource values, grazing may still be used as a vegetation management tool subject to further environmental analysis and consultation with Service.

Transportation and Public Access Management: Under the Proposed Action, all BLM-administered lands would be designated as open, closed, or limited to motorized travel. Criteria and definitions for limited, open, and closed area designations are established in 43 CFR 8340.0-5 (f), (g), and (h), respectively. OHV area designations set forth in the proposed ESDRMP may only be changed through an amendment. OHVs and general vehicle travel would only be allowed on routes designated for motorized vehicles. Emergency vehicles may utilize a drivable wash to access a site. Where no roads exist, vehicles could be authorized on a case-by-case basis to travel cross-country to avoid the need for road building. Where new roads must be built, roadbeds would be no wider than needed for reliable access. BLM specifications would also be used to reduce erosion. As a general practice, new roads would not be bladed for use in fence construction. Vehicles would travel cross-country, or fences would be built without motorized access, as specifically identified by the Authorized Officer.

BLM's strategy for restoring non-motorized routes or trespasses would be accomplished as rapidly as funding permits. Sensitive resources in immediate danger or those that have been damaged by vehicle trespass would be a high priority for restoration. Typically, the restoration would be limited to that portion of the route of trespass that is in line of sight from an open route. Each route would be evaluated on a case-by-case basis, and the most appropriate method of restoration would be used based on geography, topography, soils, hydrology, and vegetation

One implementation level decision included in the Proposed Action is the identification of routes of travel. All routes of travel have been classified as motorized or non-motorized. Motorized routes may be open to all vehicles, including OHVs. Some motorized routes may have additional limitations on use, including vehicle size, vehicle type, and season of use. Non-motorized routes would be closed to motorized vehicles, including OHVs, but open to biking, hiking, and equestrian use. Any area proposed for restoration would first undergo NEPA and section 7 consultation, to ensure compatibility with other resource values.

Public Health and Safety Management: Under the Proposed Action, BLM would identify areas or hazards which have potential impact to public health and safety according to applicable Federal and State laws and regulations. The following are public health and safety concerns in the Planning Area: abandoned mines, unexploded ordnance (UXO), international border issues,

and hazardous materials. Abandoned mines management would include fencing, gating, signage, and closure of abandoned mine openings, as well as considering the use of abandoned mines for wildlife habitat. UXO management would involve cooperation with the U.S. Army Corps of Engineers and identification of the locations on BLM-administered lands that are potential areas of UXO concern. International border issues management will involve ensuring that borderlands are safe for public and agency use. Hazardous material management will involve public notification of potential health risks by means of notices, signage, and other forms of communication. It would also involve remediating areas with hazardous materials in accordance with applicable laws and regulations.

Conservation Measures

Additional Conservation Measures that will reduce effects to listed species have been incorporated into the Description of the Proposed Action and will be reflected in the Record of Decision. They include:

1. Site-specific habitat evaluations and species-specific biological surveys shall be conducted by qualified individuals [section 10(a)(1)(A) permit holders when necessary, and equivalent credentials when not necessary] to determine the status of listed species for project proposals that may require consultation with the Service.

2. To offset unavoidable impacts to suitable/unoccupied and occupied Quino habitat by proposed projects, BLM or the applicant shall restore degraded habitat at no less than a 2:1 ratio (restored:developed) for suitable/unoccupied habitat and a 3:1 ratio for occupied habitat within the Planning Area. Suitable/unoccupied habitat is defined as areas containing the primary constituent elements (PCEs) as outlined in the January 17, 2008, proposed revision to critical habitat (73 FR 3328) (see the "Status of the Species/Critical Habitat" section below for a discussion of the PCEs for Quino). Occupied Quino habitat is defined as contiguous suitable habitat containing the PCEs within 2 kilometers of a known Quino occurrence ("habitat-based population distribution") (73 FR 3328).

   Impacts to Quino habitat will be determined by the amount of suitable/unoccupied habitat and/or occupied habitat that is proposed to be impacted indirectly and directly. Restoration of impacted habitat will be conducted in areas with appropriate topographical and biological features to be determined by the Service and BLM. The details of the restoration shall be based on Appendix II of the Recovery Plan for the Quino Checkerspot Butterfly (Service 2003) and described in a plan to be reviewed and approved by the Service. The restoration plan shall include, but not be limited to: (1) larval host plants (local stock, if possible) to be planted; (2) nectar resources; (3) irrigation needs and/or other establishment procedures; (4) timeline for implementation; (5) success criteria; (6) contingency measures for success criteria that are not met; (7) weed control measures; (8) monitoring program; and (9) implementation schedule. The restoration plan will be

prepared and submitted to the Service prior to commencement of ground disturbance associated with the proposed project. The proposed project will not commence until the restoration begins. The restoration plan actions will be completed no later than completion of project construction. Success criteria will be modeled on undisturbed native plant communities in the vicinity of the proposed project and sites within the area known to be occupied by Quino.

3. BLM will continue to cooperate with the County of San Diego to develop the San Diego East County MSCP in accordance with the Memorandum of Understanding between BLM and the County of San Diego (signed by BLM on April 23, 2007). If public lands identified as available for disposal in the RMP are also identified in the MSCP as important components of a reserve system, disposal of those lands shall only be in a manner consistent with the conservation goals and objectives of the MSCP.

4. To minimize effects to the LBV, activities proposed (i.e., vegetation management) within riparian areas that may affect the species shall avoid the breeding season. The breeding season extends from mid-March to mid- or late-September.

5. Vegetation management plans to control tamarisk infestations shall be staggered and configured to allow for passerine nesting to continue in the same area while native vegetation is given the opportunity to replace the tamarisk.

6. To avoid disease transmission, domestic sheep and/or goat grazing will be allowed as a vegetation management prescription to reduce fuel levels only in areas greater than 9 miles of PBS critical habitat.

7. The Fire Management Plan will include all known locations of listed species and suitable habitat within the Planning Area. The Fire Management Plan and any resulting BAER Plans after wildfire will incorporate measures to avoid and minimize impacts to listed species to the extent feasible, and include offsetting measures to restore habitat conditions adversely affected by wildfire, suppression, and BAER activities. Restoration will only include the use of local native plants. The Fire Management and BAER Plans will be prepared in consultation with the Service.

Future Consultations

The proposed ESDRMP provides programmatic guidance regarding future project-specific actions, their effects on listed species, and compliance with the Act. The Final EIS for the proposed ESDRMP presents several alternatives. This biological opinion analyzes only those actions described as the "Preferred Alternative" in the Final EIS. The only project-specific activities contemplated in the Proposed Action and addressed in this consultation are the designation of routes of travel, and casual uses. The proposed ESDRMP contemplates numerous

other activities for which separate case-by-case authorization and analysis under NEPA will be needed in the future. Though the Final EIS and this biological opinion have evaluated the general nature of the effects of these actions, the proposed ESDRMP defers assessment of the effects of future specific actions because data on the location, timing, size, purpose, and other aspects are not known at this time. Therefore, section 7 consultation on these case-by-case location/activity-specific projects that require discretionary approval is deferred to the future. Actions in the proposed ESDRMP that do not affect listed or proposed species or have only beneficial effects are not analyzed in this opinion; thus, only those proposed resource uses that would adversely affect one or more of the species at issue are addressed below.

SPECIES ACCOUNTS

Least Bell's vireo (*Vireo bellii pusillus*; LBV)

Status of the Species/Critical Habitat

Listing Status

The LBV was federally listed as endangered on May 2, 1986 (51 *FR* 16474), and State listed as endangered in California on October 2, 1980, the species is also afforded protection under the MBTA. A draft recovery plan was published for this species in March 1998 (Service 1998). The draft recovery plan constituted a thorough summary of the status of the species at the time it was distributed and provided broadly measurable recovery goals aimed at reducing threats and increasing the number of breeding pairs within the species' present and historic range. On October 2, 2006, the Service announced completion of a 5-year review for the vireo and recommended that the species be downlisted from endangered to threatened status (Service 2006).

Species Description

The LBV (Coues 1903) is a small migratory songbird in the family Vireonidae, and is one of four subspecies of *Vireo bellii* (Bell's vireo) that have been recognized. Although all four subspecies are similar in behavior and life history, they are likely isolated from one another on both the breeding and wintering grounds (e.g., American Ornithologists' Union; AOU 1957).

The LBV is olive-gray above and mostly white on its underparts with two dull white wing stripes and dull white to olive narrow margins on the outer border of its wings and tail. Males and females are identical in plumage. Male vireos are easily distinguished by their song, a rapid series of harsh, slurred notes that increase in intensity as the song progresses (Grinnell and Storer 1924, Pitelka and Koestner 1942, Barlow 1962), but females rarely sing and therefore cannot generally be identified by song. Phrases of the song are alternatively slurred upward and

downward. Eggs are on average 0.7 inches (17.5 millimeters) long, and dull white, often with fine brown, black, or reddish-brown dots concentrated on the larger end (Brown 1993).

Distribution

The LBV formerly was found in valley bottom riparian corridors from Tehama County, California, southward (but locally) to northwestern Baja California, Mexico. It ranged from near the Pacific coast, in some areas, to as far east (inland) as the Owens Valley, Death Valley, and along the Mojave River in California (Grinnell and Miller 1944). Except for a few outlying pairs, the subspecies is currently restricted to southern California south of the Tehachapi Mountains and northwestern Baja California (Garrett and Dunn 1981, U.S. Geological Survey [USGS] 2002). Breeding pairs of LBV currently occur in Santa Clara, Inyo, San Bernardino, Ventura, Los Angeles, Orange, Riverside, and San Diego counties. As of 2004, the largest concentrations of LBV (approximately 800 territories) occurred in the Santa Ana River near the Prado Basin and the Santa Margarita River on Marine Corps Base Camp Pendleton (Griffith Wildlife Biology 2001a, b, USGS 2002, Pike *et al.* 2004). According to Grinnell and Miller (1944) 4,000 feet (1,200 meters) is the upper elevational limit where LBV occur in coastal southern California.

Habitat Affinities

The LBV primarily occupies riparian habitats that typically feature dense cover within 3 to 7 feet (1 to 2 meters) of the ground and a dense, stratified canopy. It inhabits low, dense riparian growth along water or along dry parts of intermittent streams. The understory is typically dominated by sandbar willow (*Salix hindsiana*); mule fat (*Baccharis salicifolia*); young individuals of other willow species, such as arroyo willow (*Salix lasiolepis*) or black willow (*Salix gooddingii*); and one or more herbaceous species (Salata 1983a, 1983b, Zembal 1984, Zembal *et al.* 1985). Important overstory species include mature arroyo willows and black willows. Other overstory species that may contribute to vireo habitat include cottonwoods (*Populus* spp.), western sycamore (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*). The species primarily nests in riparian vegetation typically dominated by willows and mule fat but may also use a variety of shrubs, trees, and vines. Nests are typically built within 3 feet (1 meter) of the ground in the fork of willows, mule fat, or other understory vegetation (Pike *et al.* 2004). Cover surrounding nests is usually a moderately open midstory with an overstory of willow, cottonwood, sycamore, or oak. Crown cover is usually more than 50 percent and contains occasional small openings. The most critical structural component to LBV breeding habitat is a dense shrub layer at 2 to 10 feet (0.6 to 3 meters) above the ground (e.g., Zembal *et al.* 1985). The birds forage in riparian areas and adjoining chaparral habitat (Salata 1983b).

Life History

The Bell's vireo exhibits year-round diurnal activity and is known to be a nocturnal migrant (Brown 1993). The species feeds primarily on insects and spiders, and rarely on fruit (Brown 1993). Insects consumed include true bugs, beetles, bees, wasps, ants, snails, grasshoppers, moths, and butterflies (Terres 1980). The vireo forages primarily within willow (*Salix* spp.) stands or associated riparian vegetation with forays into non-riparian vegetation including chaparral and oak woodlands later in the breeding season (Gray and Greaves 1984, Salata 1983b, Kus and Miner 1987). Individuals travel between 10 and 200 feet (3 and 61 meters) while foraging, with the majority of these destinations occurring within 98 feet (30 meters) of the edge of riparian vegetation (Kus and Miner 1987). The LBV forages in all vertical vegetation layers from 0 to 66 feet (0 to 20 meters) but most feeding is concentrated above the ground surface in the lower vegetation layers between 0 to 20 feet (0 to 6 meters) (Kus and Miner 1987, Salata 1983b). Feeding behavior largely consists of collecting prey from leaves or in bark crevices while perched or hovering, and less frequently by capturing prey by aerial pursuit (Salata 1983a, 1983b).

The LBV is mainly monogamous, however, some individuals of both sexes are sequentially polygamous within the breeding season (Greaves 1987). The male vireo contests and establishes breeding territories (Barlow 1962) which range in size from 0.5 to 7.4 acres (0.2 to 3.0 hectares) (Gray and Greaves 1984, Zembal *et al.* 2003) with most averaging between 1 and 3 acres (0.4 and 1.2 hectares) (Service 1998). The LBV maintains their territories by threat and physical confrontation early in the breeding season, tapering to vocal warnings later in the season (Barlow 1962).

The breeding season for LBV extends from mid-March to mid- or late-September (Service 1986). A majority of the birds arrive from the Mexican wintering areas by the end of March, and depart by end of August (Zeiner *et al.* 1990).

Nests are typically suspended in forked branches of many different riparian species with no clear preference for any particular species (Barlow 1962, Gray and Greaves 1984). Although LBV nests are usually placed approximately 1.0 meter above the ground, nests have been recorded as high as 4.3 meters (Zembal *et al.* 2003). Females probably select the nesting sites but both genders participate in nest construction (Barlow 1962). Between two to five (typically three or four) eggs are laid shortly after nest construction (Service 1998). A typical clutch is incubated by both parents for about 14 days with the young remaining in the nest for another ten to 12 days (Pitelka and Koestner 1942, Barlow 1962). Each nest appears to be used only once with new nests constructed for failed or successive broods (Greaves 1987). Vireos may attempt up to five nests within a breeding season, but are typically limited to one or two successful nests within a given breeding season (Service 1998).

Banding records have documented LBV that lived approximately seven years; however, the maximum life-span is probably longer (Brown 1993). Survival rates measured as average nesting success has been recorded for several large drainages in southern California (Service 1998). The average percentage of nests to successfully produce fledglings over several study areas ranged from 46 percent (on the Santa Ana River) to a high of 74 percent (on the western portion of the San Luis Rey River)(Service 1998).

LBVs can be heavily parasitized by brown-headed cowbirds (*Molothrus ater*) in unmanaged locales (e.g., Zembal *et al.* 2003). Nest predation among LBV has been reported as high as 45 percent in the San Luis Rey River to as low as 8 percent on the San Diego River (Salata 1983b).

Additional long-term research is needed over long periods of time to determine dispersal characteristics of LBV (Service 1998). Dispersal distance has been shown to increase to a maximum of approximately 1 mile (1.6 kilometer) during a given breeding season (Gray and Greaves 1984). Studies by Kus have provided estimates of extra-watershed dispersal rates and distances for LBV with approximately 20 percent dispersing outside their natal drainages between breeding seasons (Service 1998). Data collected by Kus also suggests that males are more likely to disperse from their natal sites than females (Service 1998).

Population Trends

No other passerine (perching songbird) species in California is known to have declined as dramatically as the LBV (Brown 1993). The narrow and limited nature of the habitat of the LBV makes the subspecies more susceptible to major population reductions than the other subspecies of Bell's vireo. Intensive surveys between 1977 and 1985 of virtually all potential breeding habitat were conducted (Gaines 1977, Goldwasser 1978, Goldwasser *et al.* 1980), resulting in occurrences at only 46 of over 150 former localities. Once common, the vireo populations had decreased substantially by the late 1980's due to loss and degradation of habitat as well as from brown-headed cowbird parasitism (Goldwasser *et al.* 1980).

The estimated population of vireos has increased from approximately 300 pairs in 1986 to over 1,500 pairs in 2001 (USGS 2002); this population increase is primarily attributable to the management of local cowbird populations and habitat conservation (Kus 1998, Service 1998). Populations at some locations appear to have peaked in 1998, during the most recent El Niño event, and limited regional population declines have occurred since that year (Griffith Wildlife Biology; GWB 2001b, USGS 2002). Despite some declines, other areas continue to have increasing populations and the overall population appears to be stable or moderately increasing (Hoffman and Zembal 2002, USGS 2002, Pike *et al.* 2004).

Threats

Causes for the past decline of the LBV include destruction of habitat, river channelization, water diversions, lowered water tables, gravel mining, agricultural development, invasion of exotic species (including *Arundo donax* and *Tamarix* spp.), and cowbird parasitism (Service 1986, 1998). Vireos are known to be sensitive to many forms of disturbance including noise, night lighting, and consistent human presence in an area. Excessive noise can cause vireos to abandon an area. Greaves (1989) hypothesized that the lack of breeding vireos in apparently suitable habitat was due to human disturbances (e.g., bulldozers, off-road vehicles, and hiking trails). He further suggested that buffer zones between natural areas and surrounding degraded and disturbed areas could be used to increase the suitability of some vireo habitat. It appears that vireos nesting in areas containing a high proportion of degraded habitat have lower productivity (e.g., hatching success) than those in areas of high quality riparian woodland (Pike and Hays 1992). Additionally, widespread habitat losses have fragmented most remaining populations into small, disjunct, widely dispersed subpopulations (Service 1998). As much as 90 percent of the original extent of riparian woodland in California has been eliminated, and most of the remaining 10 percent is in a degraded condition (Smith 1977, Dahl 1990). Over 15 years ago, Oberbauer (1990) reported a 61 percent loss of riparian habitat for San Diego County compared to historic conditions; overall riparian area losses have likely continued since 1990. Habitat fragmentation negatively affects abundance and distribution of neotropical migratory songbirds, in part by increasing incidence of nest predation and parasitism (e.g., Askins 2000). Management programs aimed at reducing numbers of cowbirds have been successful at restoring and recovering some local populations (e.g., Zembal *et al.* 2003). However, cowbird nest parasitism continues to be a significant threat to the vireo. While cowbird trapping has proven a successful tool to halt vireo population declines over the short term, it may not be the best method for long-term recovery of the vireo. It remains unclear as to how best to manage this threat and additional research is needed to resolve this issue (Service 2006).

Critical Habitat

Critical habitat was designated for the LBV on February 2, 1994 (59 *FR* 34982), in 10 areas encompassing about 38,000 acres (15,200 hectares) in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. Primary constituent elements that support feeding, nesting, roosting, and sheltering are considered essential to the conservation of the LBV. These primary constituent elements can be described as riparian woodland vegetation that generally contains both canopy and shrub layers and some associated upland habitats.

Synopsis of Status

The status of the LBV has been improving since the start of monitoring and management programs, associated with focused recovery efforts, conducted pursuant to California Endangered Species Act and the Act. From a recorded low of approximately 300 territories in 1986, the

entire United States segment of the population had grown to approximately 2,900 territories in 2005 (Service 2006). However, threats to the survival and recovery of the LBV continue as further research is needed to address the primary threat of cowbird parasitism on the long-term recovery of the vireo. Without intensive cowbird control at the main population sites, which is linked to the aforementioned regulatory mechanisms, or new evidence to suggest that LBV can persist without management intervention, populations are likely to return to the low levels that necessitated the listing of the species (Service 2006).

ENVIRONMENTAL BASELINE

Status of the Species in the Action Area

Small areas of potential habitat present in remote canyons that have dense understory vegetation. BLM conducted an inventory in 2005 to map all riparian areas within the BLM-administered lands within the Planning Area and mapped 32 riparian areas covering a total of approximately 97 acres (BLM 2005). The California Department of Parks and Recreation (CDPR) has conducted mulitple surveys for this species within the Planning Area and found LBV along Willow Creek in Carrizo Gorge Wilderness and along Bow Willow Canyon on State Park land that originates in the Carrizo Gorge Wilderness (Wells and Kus 2001). According to CNDDB data and data in the Service's files obtained through section 10(a)(1)(A) permit reporting requirements, the CDPR has also documented least Bell's along San Felipe creek adjacent to BLM's San Felipe Wilderness Study Area and along Vallecito Creek adjacent to BLM's Sawtooth Mountains Wilderness Area. However, there is no overlap of designated LBV critical habitat with BLM-administered lands within the Planning Area.

Factors Affecting the Species' Environment within the Action Area

The primary factors affecting the LBV within the action area include loss of riparian habitat, hydrological alteration, and the adverse effects of exotic plant and animal proliferations associated with the fragmentation and alteration of the landscape. Groundwater pumping, water storage, and water diversions may have a significant effect on this species' environment within the action area due to the reduction or cessation of stream flows, which are important habitat components that likely provide for the production of prey species and the optimum recruitment and development of riparian vegetation (Shafroth *et al.* 1998, Stromberg *et al.* 2005, Stromberg *et al.* 1996, Stromberg *et al.* 1991).

Quino Checkerspot Butterfly (*Euphydryas editha quino*; Quino)

Status of the Species/Critical Habitat

Listing Status

The Quino checkerspot butterfly was federally listed as endangered on January 16, 1997 (Service 1997). The decision to list the Quino was made because of declining population numbers and continuing habitat loss, degradation, and fragmentation by urban and agricultural development and recreational activities, over-collection, vandalism, fire, and drought throughout a significant portion of the subspecies' range. Additional threats to the subspecies and its habitat include trash dumping, nitrogen deposition, elevated atmospheric carbon dioxide concentrations, and climate change (Service 2002).

A recovery plan for this subspecies was completed in 2003 (Service 2003) that provides a comprehensive scientific review and analysis of published and non-published information through 2002 relevant to conservation of the Quino. While an extensive amount of peer-reviewed, published scientific information is available on the species *Euphydryas editha* (Edith's checkerspot butterfly) such information specific to the Quino subspecies is relatively sparse. Therefore, much of the information used in the final listing rule (Service 1997), the original final rule designating critical habitat (Service 2002), and the recovery plan (Service 2003) has been based on research on other subspecies of Edith's checkerspot. A number of biological and ecological similarities exist among subspecies of Edith's checkerspot (Service 2003a), including similar life histories, shared or related host plant species, and similar movement behavior. We believe that extrapolation of data collected on other Edith's checkerspot butterfly subspecies, particularly the federally endangered bay checkerspot butterfly (*Euphydryas editha bayensis*), to the Quino is justified in most cases (Service 2002).

On March 5, 2008, the Service published a notice in the *Federal Register* announcing the initiation of a 5-year review of the listing status of this subspecies (Service 2008).

Species Description

The Quino checkerspot butterfly is a member of the family Nymphalidae (brushfooted butterflies) and the subfamily Melitaeinae (checkerspots and fritillaries). The Quino checkerspot butterfly is a subspecies of the Edith's checkerspot butterfly (*Euphydryas editha*); it differs from other subspecies in a variety of characteristics including size, wing coloration, and larval and pupal phenotype (Mattoni *et al.* 1997).

The taxon now commonly called the Quino checkerspot butterfly has undergone several nomenclatural changes. It was originally described as *Melitaea quino* (Behr 1863). Gunder (1929) reduced it to a subspecies of *Euphydryas chalcedona*. At the same time, he described

Euphydryas editha wrighti from a checkerspot butterfly specimen collected in San Diego. After reexaminingBehr's descriptions and specimens, Emmel *et al.* (1998) concluded that the Quino checkerspot butterfly should be associated with *E. editha*, not *E. chalcedona*, and that it was synonymous with *E. editha wrighti*. Because *E. editha wrighti* is a junior synonym for the Quino checkerspot butterfly, *E. editha quino* is now the accepted scientific name.

Distribution

Quino were historically distributed throughout the coastal portion of southern California (Los Angeles, Orange, western Riverside, San Diego, and southwestern San Bernardino counties; Service 2003a), and northern Baja California, Mexico (Mattoni *et al.* 1997). The historical distribution of Quino included the westernmost slopes of the Santa Monica Mountains, Los Angeles Plain and Transverse Ranges to the edge of the upper Anza-Borrego Desert, and south to

El Rosario in Baja California, Mexico (Mattoni et al. 1997). Extant U.S. populations are apparently restricted to southwest Riverside and southern San Diego Counties (Service 2003a).

Status and Local Distribution of Populations in Riverside County

The recovery plan identified 7 core and 18 non-core occurrence complexes in western Riverside County: Harford Springs (non-core); Canyon Lake (non-core); Warm Springs Creek (core); Warm Springs Creek North (non-core); Skinner/Johnson (core); Domenigoni Valley (non-core); Sage (core); Black Hills (non-core); San Ignaciao (non-core); Rocky Ridge (non-core); Wilson Valley (core); Vail Lake (core); Butterfied/Radec (non-core); Aguanga (non-core); Dameron Valley (non-core); Billy Goat Mountain (non-core); Brown Canyon (non-core); Southwest Cahuilla (non-core); Tule Peak (core); Silverado (core); Spring Canyon (non-core); Cahuilla Creek (non-core); Bautista Road (non-core); Pine Meadow (non-core); and Lookout Mountain (non-core) (Service 2003a). Occurrence data collected in Riverside County since the recovery plan was published in 2003 has resulted in expansion of all core occurrence complexes, and merging of some core occurrence complexes with non-core occurrence complexes (see discussion below). Quino checkerspot butterflies have not been observed in the Harford Springs (non-core) Occurrence Complex or other proximal historic locations since 1986, and therefore are no longer considered extant in that area

Development has reduced the quality, connectivity, and amount of associated habitat in the Warm Springs Creek Core Occurrence Complex since the recovery plan was published in 2003 (Allen and Preston 2006). Although habitat associated with this core occurrence complex may support a declining population, the Quino captive rearing facility is also located within this area, and it is likely to be a site of focused population management and augmentation in the future. Despite concern for the viability of this population, several experts have expressed the opinion that this core occurrence complex represents an important Quino population that has potential to persist indefinitely if the remaining habitat is conserved and managed (Ballmer et al. 2003; Ballmer and Osborne 2005; Allen and Preston 2006). Because the Warm Springs Creek Core

Occurrence Complex has been isolated from other core occurrence complexes (Service 2003a) and recent development has reduced and fragmented habitat in this area (Allen and Preston 2006), remaining contiguous habitat, including habitat more than one km distant from observation locations (outside of the mapped occurrence complexes), is likely the minimum area needed to support a viable managed population. Therefore, we have determined that the Warm Springs Creek North (non-core) Occurrence Complex (Service 2003a) and habitat contiguous with the Warm Springs Creek Core Occurrence Complex habitat should be considered a single population footprint and merged with the Warm Springs Creek Core Occurrence Complex identified in the recovery plan (Service 2003a) into a single, expanded Warm Springs Creek Core Occurrence Complex. The expanded Warm Spring Creek Core Occurrence Complex is a constrained population distribution defined by remaining undeveloped, connected habitat associated with Quino observations in this area.

Occurrence data collected in Riverside County since listing (62 FR 2313, January 16, 1997) has continued almost annually to expand the known northeastern limits of the subspecies' range (Pratt et al. 2001; Service 2003a; Poopatanapong 2008). The recovery plan identified four non-core occurrence complexes east of Temecula in the foothills and valleys south of Mount San Jacinto: Brown Canyon (Service 2003a), Bautista Road, Pine Meadow, and Lookout Mountain (Service 2003a). The Bautista Road (described as non-core in the recovery plan) Occurrence Complex is in a valley east of Temecula and north of the town of Anza. Multiple new observations have occurred within and around the Bautista Road Occurrence Complex (AMEC 2004; Mooney Jones & Stokes 2005). Consistent with criteria outlined in the recovery plan (Service 2003a), we now consider the Bautista Road Occurrence Complex to be a core occurrence complex. As described below, from 2004 to 2006, multiple new observation locations were also reported in the town of Anza, and north and northwest of the Bautista Road (core), Pine Grove (non-core), and Lookout Mountain (non-core) occurrence complexes, resulting in new non-core occurrence complexes and expansion of the subspecies' known range (Service Geographic Information Systems (GIS) database). The new non-core occurrence complexes are: the Cave Rocks Occurrence Complex within the town of Anza, just north of the intersection of Bautista Road and State Route (SR) 371 (AMEC 2004); the Quinn Flat Occurrence Complex located between Forbes Ranch Road and Morris Ranch Road northeast of Quinn Flat and SR 74 (Pratt 2005; Toth 2005; San Bernardino National Forest (SBNF) GIS database); the Horse Creek Occurrence Complex adjacent to Bautista Road, southeast of Bautista Spring (AMEC 2004; Mahsch 2006); and the North Rouse Ridge Occurrence Complex located on Rouse Ridge in the hills east of Bautista Canyon, near where Bautista Road exits the foothills (Toth 2005; Poopatanapong 2007; SBNF GIS database).

Recent monitoring information indicates that the Tule Peak and Silverado core occurrence complexes described in the recovery plan (Service 2003a) are part of a single high-density population footprint supporting periodic outbreak events, similar to historic events (Service 2003a) such as the 1977 outbreak reported by Murphy and White (1984; Ehrlich and Murphy 1987) in San Diego County (Carlsbad Fish and Wildlife Office (CFWO) 2004; Pratt 2004). Occupancy in the Silverado Core Occurrence Complex was first documented in 1998 (Pratt

2001), followed by the discovery of hundreds of Quino checkerspot adults in 2001 within the Tule Peak Core Occurrence Complex (TeraCor 2002). The hundreds of adults observed during surveys in the Tule Peak Core Occurrence Complex in 2001 were unprecedented, because typically five or fewer individuals are reported during project-based surveys (Service GIS database). In 2004, following a year of above-average host plant density in the Anza area (CFWO 2004), another Quino outbreak event occurred with even higher abundance than was reported in 2001. An estimated 500 to 1000 adult Quino checkerspot butterflies were reported from the Silverado Core Occurrence Complex in a single day in 2004 (Anderson 2007a; CFWO 2004; Pratt 2004). Moreover, over 30 new occurrence locations with high adult densities were reported in 2004 in the vicinity of Tule Peak Road (92 to over 100 observations in a single day) south of the Cahuilla Band of Indians Tribal lands and the town of Anza (Osborne 2004; Anderson 2007a; CFWO 2004; Osborne 2007). These new observations prompted us to merge the Tule Peak (core), Silverado (core), and Southwest Cahuilla (non-core) occurrence complexes to form a single, expanded Tule Peak/Silverado Core Occurrence Complex.

Available scientific information (including recent outbreaks in the closest core occurrence complexes) suggests the new Bautista Core Occurrence Complex and other non-core occurrence complexes north of the town of Anza are the result of recent colonization events and an ongoing range shift for this subspecies northward and upward in elevation. Parmesan (1996) concluded that the average position of known Edith's checkerspot butterfly populations (including the Quino) has shifted northward and upward in elevation, apparently due to a warming, drying climate, and the recovery plan confirms this (Service 2003a). Parmesan (1996) compared the distribution of Edith's checkerspot butterfly in the early part of the 20th century to its distribution from 1994 to 1996 using historical records and field surveys. This study identified range-wide patterns of local extirpations of Edith's checkerspot butterflies, and noted that populations in the southern part of the range (primarily the Quino) experienced 80 percent of all recorded local extirpations (Parmesan 1996). Parmesan (1996) concluded that this pattern of extirpations indicated contraction of the southern boundary of the subspecies' overall distribution by almost 100 mi (160 km), and a shift in the average location of a Edith's checkerspot butterfly occurrence northward by 57 mi (92 km). This shift in range closely matched shifts in mean yearly temperature (Parmesan 1996). Studies have demonstrated a correlation of population distribution and phenology changes with climate changes for many other butterfly and insect species in California and around the world (Parmesan et al. 1999; Forister and Shapiro 2003; Parmesan and Yohe 2003; Karban and Strauss 2004; Thomas et al. 2006; Osborne and Ballmer 2006; Parmesan 2006; Thomas et al. 2006). Metapopulation viability analyses of other endangered nymphalid butterfly species also indicate that current climate trends pose a major threat to butterfly metapopulations by reducing butterfly growth rates and increasing subpopulation extirpation rates (Schtickzelle and Baguette 2004; Schtickzelle *et al.* 2005). Such similar climate response patterns in related and co-occurring insect species further support the validity of Parmesan's (1996) Quino observations and conclusions.

Documentation of climate-related changes that have already occurred in California (Ehrlich and Murphy 1987; Croke et al. 1998; Davis et al. 2002; Brashears *et al.* 2005), and future drought

predictions for California (e.g., Field *et al.* 1999; Brunell and Anderson 2003; Lenihen *et al.* 2003; Hayhoe et al. 2004; Brashears *et al.* 2005; Seager *et al.* 2007) and North America (IPCC 2007) indicate prolonged drought and other climate-related changes will continue into the foreseeable future, and we anticipate these changes will affect Quino checkerspot butterfly habitat and populations. Thomas et al. (2004) estimated 29 percent of species in scrublands (habitat for Quino) face eventual extinction, and 7 (with dispersal) to 9 (without dispersal) percent of butterfly species in Mexico will become extinct (mid-range climate predictions; Thomas *et al.* 2004). The most-recent subspecies-specific evidence corresponds with the hypothesis that drought conditions at the northern edge of the subspecies' range is resulting in ongoing range shift at the northern edge of the range to more northern and higher elevation areas that experience higher precipitation: surveyors noted that during drought conditions in 2007, for the first time since the subspecies was listed, no Quino checkerspot butterflies were observed during Riverside County surveys or core occurrence complex monitoring (Service CFWO 2007).

The Anza/Mount San Jacinto foothills area (Bautista care occurrence complex) is the northern extent of the Quino range and supports the greatest elevational gradient within the extant range of the butterfly. Indications that maintenance of the Tule Peak/Silverado and Bautista Road core occurrence complexes, and maintenance of habitat connectivity to higher elevation non-core occurrence complexes, is needed to prevent a significant increase in the subspecies' extinction probability (Service 2003a; Osborne 2007) include the following: Parmesan's subspecies-specific study (Parmesan 1996); recent documented Quino outbreak events (discussed above); the complete lack of Quino observations in Riverside County during 2007 monitoring; documented drought conditions and the likelihood that recurrent drought conditions will persist into the foreseeable future; and the likelihood that the new non-core occurrence complexes in the most northern, highest elevation habitat areas (Pine Grove, Lookout Mountain, Quinn Flat, Horse Creek, Cave Rocks, and the North Rouse Ridge) are a result of colonization from lower elevation populations over the past 10 - 15 years (such as the Bautista Road and Tule Peak/Silverado core occurrence complexes).

Parmesan's (1996) range-shift statistics predict the following Quino population changes: (1) declines in, and losses of, the southernmost and/or lowest elevation populations, especially in drier areas where rainfall is most variable (such as southwest Riverside County; Anderson 2000); (2) increases in the density and resilience of the most northern and/or highest elevation populations, especially in wetter areas (such as the Anza area; Service 2003a); and (3) establishment of new populations, or expansion of existing populations, northward and upward in elevation where range shift is the least impeded by habitat loss due to land-use changes (such as the Mount San Jacinto foothills; Service GIS database and satellite imagery). Anza area core occurrence complexes (Tule Peak/Silverado and Bautista Road) also support the highest (co-occurring) diversity of host plant species (*Plantago patagonica, Antirrhinum coulterianum, Cordylanthus rigidus,* and *Castilleja exserta*) within the Quino range, a factor known to mitigate the effects of climate extremes on Edith's checkerspot butterfly populations (Hellman 2002). In light of the recent warming and drying trends (see above discussion), prudent design of reserves

and other managed habitats in the Anza area, where the subspecies range is expanding northward and upward in elevation should include landscape connectivity to other habitat patches and ecological connectivity (habitat patches linked by dispersal areas; Service 2003a) in order to accommodate range shifts northward and upward in elevation (Service 2003a). Although habitat quality may be changing throughout the subspecies range, suitable habitat north and upward in elevation of the southernmost populations is already occupied, and colonization events associated with climate change are likely only occurring in the Anza area.

Status and Local Distribution of Populations in San Diego County

The recovery plan identifies 4 core and 10 non-core occurrence complexes in southwest San Diego County surrounding Otay Mountain and Otay Lakes: West Otay Mesa (non-core), Otay Valley (core); West Otay Mountain (core); Otay Lakes/Rancho Jamul (core); Proctor Valley (non-core); Jamul (non-core); Hidden Valley (non-core); Rancho San Diego (non-core); Los Montañas (non-core); Honey Springs (non-core); Dulzura (non-core); Marron Valley (core); Barrett Junction (non-core), and Tecate (non-core) occurrence complexes (Service 2003a). New Quino observations (Service GIS database) between occurrence complexes identified in the recovery plan have resulted in merging of the Otay Valley (core), West Otay Mountain (core), Otay Lakes (core), Proctor Valley (non-core), Dulzura (non-core), and Honey Springs (non-core) occurrence complexes into a single, expanded Otay Mountain Core Occurrence Complex. This merging of occurrence complexes in the Otay area is further supported by the recovery plan, which noted that occupied habitat in the vicinity of Otay Lakes and Rancho Jamul is an area of key landscape connectivity for all subpopulations in southwest San Diego County (Service 2003a).

Following publication of the recovery plan in 2003, the Otay Fire severely burned habitats where the majority of Quino checkerspot butterflies had been observed within southwest San Diego County (IBAERT 2003), including most of the Otay Mountain Core Occurrence Complex. In 2005, the smaller Border 50 Fire burned most habitat within the Marron Valley Core Occurrence Complex west of Otay Mountain that was not burned in the 2003 Otay Fire (Service GIS database). Although post-fire monitoring surveys indicated no populations were completely extirpated by the 2003 and 2005 fires (CFWO 2004, 2005, 2006; Anderson 2007b), Quino densities and the extent of occupied habitat appeared to be reduced, and surveyors reported an apparent increased rate of exotic plant species invasion (Anderson 2007b). An indirect threat exacerbated by fire damage is increased invasion of habitat by non-native plant species, resulting in reduction of Quino host plants through competition (Service 2003a). Catastrophic fire has been implicated in the final extirpation of Quino from Orange County (Service 2003a), therefore widespread catastrophic fire impacts to Quino habitat within this core occurrence complex, are likely to affect the survival probability of the subspecies in southwest San Diego County (Service 2003a).

The effects of fire on Quino populations in southwest San Diego County were evident in 2007. The northernmost occupied areas within the Otay Mountain Core Occurrence Complex (Honey Springs and Dulzura non-core occurrence complexes as identified in the recovery plan) had the highest densities of adult butterflies and supported the most reproduction (observed larvae) of any known occupied areas in 2007 (CFWO 2007). These areas were not affected by the 2003 Otay and 2005 Border 50 fires. Therefore, observed relatively high Quino abundance in 2007 in the Honey Springs and Dulzura areas (CFWO 2002, 2003, 2004, 2005, 2006, 2007) was primarily due to the lack of recent fire impacts (Anderson 2007b). In 2007, the Harris Fire perimeter encompassed approximately 72% of the new Otay Mountain Core Occurrence Complex, including the northern areas that were not affected by fire in 2003 or 2005 (Service GIS database). Habitat damage within the 2007 fire perimeter is still being assessed.

Several widely distributed new observation locations have been reported in central San Diego County since 2002 (Dudek 2005; Faulkner 2005; Tierra Environmental Services 2005), resulting in three new San Diego County non-core occurrence complexes (Fanita Ranch, Sycamore Canyon, and Mission Trails Park). Although these Quino populations may contribute to the subspecies' recovery (Service 2003a), we cannot determine whether these new non-core occurrence complexes represent: (1) residual, low-density populations decreasing in abundance; (2) resilient, low-density populations increasing in abundance; or (3) recent colonization events. Given the proximity of these occurrence complexes to historical collection locations (Service 2003a), observed and predicted climate trends and associated population dynamic/range changes (see above discussion), and the relative isolation of these occurrence complexes from areas known to be occupied at the time of listing, it is likely they represent residual, low-density populations decreasing in abundance.

Multiple new Quino observation locations have been reported in south-central San Diego County since 2002 east of the community of Campo (Dieus 2005; PSBS 2005a; 2005b; O'Conner 2006). This cluster of occurrence complexes near Campo is over 7 mi (11 km) from the closest core occurrence complex, Jacumba (Service 2003a; Service GIS satellite imagery and database), and over 12 mi (19 km) from the Tecate (non-core) Occurrence Complex (Service 2003a; Service GIS satellite imagery and database). Although not quite proximal enough to be considered a single occurrence complex based on overlapping movement distances (Service 2003a), we consider this cluster of new observations near Campo to belong to a new, independent La Posta/Campo Core Occurrence Complex that we believe represents a population density center likely to contain source habitat (i.e., core occurrence complex) based on: (1) recent documentation of these occupied habitats; (2) the small number of surveys conducted in this area in the past (Service survey report files) resulting in a low likelihood of detection; (3) contiguous habitat linked by short dispersal areas (e.g., a stream butterflies can fly over) between observation locations (Service GIS vegetation database and satellite imagery); and (4) the presence of *Antirrhinum coulterianum* (white snapdragon) host plants in occupied habitat (O'Connor 2006). White snapdragon had not been previously recorded in occupied Quino habitat in San Diego County (Service survey report files). White snapdragon densities recorded in the vicinity of

Campo (O'Connor 2006) were relatively high, and similar to those observed in the Tule Peak/Silverado Core Occurrence Complex in Riverside County, the only core occurrence complex where recent Quino "outbreak events" have been recorded (see above discussion).

Quino checkerspot butterflies have recently been observed in two new locations in southeast San Diego County near Jacumba (identified as the Jacumba East and Jacumba West occurrence complexes) (Essex and Osborne 2005; Klein 2007). Additionally, data collected from the Jacumba Occurrence Complex since publication of the recovery plan has led us to reclassify the Jacumba complex as a Core Occurrence Complex. The Jacumba Occurrence Complex was not classified as a core occurrence complex in the recovery plan (Service 2003a), due to its relatively small geographic size and small number of observed individuals. However, adult Quino checkerspot butterflies are consistently observed in the area, even during drought years and under difficult survey conditions (high winds) (CFWO 2002-2007; Klein 2007). As many as 50 individuals are estimated to have been observed in one day near Jacumba Peak (Pratt 2007c). Furthermore, reproduction was documented in the Jacumba Occurrence Complex in 1998 and again in 2004 (Pratt 2007a). Therefore, we now consider Jacumba to be a core occurrence complex representing what appears to be a small, but resilient, population.

The prediction that drought conditions are likely to continue into the foreseeable future (Service 2003a; see above discussion) highlights the importance of conserving populations locally adapted to drier climates and diverse habitat types (Service 2003a). The La Posta/Campo and Jacumba core occurrence complexes are warmer and drier than the Otay Mountain Core Occurrence Complex, and differ substantially in other habitat characteristics (Service 2003a; O'Conner 2006). Therefore, maintenance of these core occurrence complexes likely is important for recovery and survival of Quino in San Diego County. These new core occurrence complexes were also the only core occurrence complexes in San Diego County (the subspecies' southern range) not affected by the fires in 2003 and 2005 (see above discussion). Therefore, new information indicates the La Posta/Campo and Jacumba core occurrence complexes contribute significantly to reducing the subspecies' extinction probability.

Habitat Affinities

Habitat for Quino is characterized by patchy shrub or small tree landscapes with openings of several meters between large plants, or a landscape of open swales alternating with dense patches of shrubs (Mattoni *et al.* 1997), habitats often collectively termed "scrublands." Quino checkerspot butterflies will frequently perch on vegetation or other substrates to mate or bask, and require open areas to facilitate movement (Service 2003). White and Levin (1981) found that adult Quino within-habitat patch movement distances from larval host plant patches to adult nectar sources often exceeded 656 ft (200 m). Because of their exothermic (cold-blooded) metabolism (Service 2003a), and need to complete their life cycle in as short a time as possible (Service 2003a), larval and adult Quino checkerspot butterflies require an open, woody canopy that allows sun to penetrate and speed their metabolic rate.

Within open, woody-canopy communities, larvae seek microclimates with high solar exposure (Weiss *et al.* 1987; Weiss *et al.* 1988; Osborne and Redak 2000). Like most butterflies, adult Quino checkerspot butterflies frequently bask and remain in open-canopy areas, using air temperature and sunshine to increase their body temperature to the level required for normal active behavior (Service 2003a).

Quino oviposition (egg deposition) has most often been documented on dwarf plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), and white snapdragon (*Antirrhinum coulterianum*) (Service 2003a). Egg clusters and/or pre-diapause larval clusters (proof of adult oviposition) have also been documented in the field on thread-leaved bird's beak (*Cordylanthus rigidus*) and purple owl's-clover (*Castilleja exserta*) (Service 2003a), and Chinese houses (*Collinsia concolor*) (G. Pratt *in litt.* 2008). *Cordylanthus rigidus* and *Castilleja exserta* alone are not believed to be sufficient to support Quino breeding; therefore, other species of host plant must co-exist within approximately 328 ft (100 m) of these species of host plant for habitat to support breeding (Service 2003).

During the first two instars, pre-diapause larvae cannot move more than a few centimeters and feed on the host plant on which the adult female butterfly deposited eggs (primary host plant species). Third instar larvae usually wander independently in search of food and may switch to feeding on a secondary host plant species (Service 2003). All known species of host plant (see species listed above) may serve as primary or secondary host plants, depending on location and environmental conditions (Service 2003). Although *Plantago erecta* densities required for larval development have been estimated (Service 2003), is not always possible any given year to determine typical host plant densities because germinating host plants may be entirely consumed by larvae, or when precipitation levels have been below-average, seeds may not germinate and larvae may remain in diapause (Service 2003).

Adult checkerspot butterflies of the genus Euphydryas have a short tongue, approximately 0.43 inches (in) [11 millimeters (mm)] in length (Pratt 2007b), and typically cannot feed on flowers that have deep corolla tubes or flowers evolved to be opened by bees (Service 2003a). Edith's checkerspot butterflies prefer flowers with a platform-like surface on which they can remain upright while feeding (Service 2003a). Examples of flowers Quino checkerspot butterflies frequently take nectar from include lomatium (*Lomatium* spp.), goldenstar (*Muilla* spp.), fiddleneck (*Amsinckia* spp.), goldfields (*Lasthenia* spp.), and popcorn flowers (*Plagiobothrys* and *Cryptantha* spp.) (Service 2003a). Adults may nectar on flowers with a corolla length nearly a centimeter longer than their proboscis (0.59-1.10 in (15-28 mm)), like *Linanthus androsaceus* (Murphy 1984; Hickman 1993), but they are not likely to prefer such species (Murphy 1984).

Male Quino checkerspot butterflies, and to a lesser extent females, are frequently observed on hilltops and ridgelines (CFWO GIS Quino database, Osborne 2001; Pratt 2001). In Edith's checkerspot butterflies, this tendency of females to move upwards in elevation and of males to defend hilltops ("hilltopping behavior") increases the likelihood of male and female butterflies

finding each other to mate during years of low adult density (Baughman and Murphy 1988; Ehrlich and Wheye 1988). On hilltops where males are likely to encounter virgin females, the males will defend their territory from other males; therefore, higher ground can serve as a "visual beacon" to enhance mating success (Baughman and Murphy 1988; Ehrlich and Wheye 1988; Mattoni *et al.* 1997). Hilltopping has been observed in Quino checkerspot butterflies (Mattoni et al. 1997, Osborne 2001). Like other subspecies of Edith's checkerspot, adult Quino checkerspot butterflies are reliably observed on hilltops in occupied habitat (Service GIS database), even in the absence of larval host plants (Osborne 2001; Pratt 2001); therefore, hilltops and ridgelines provide features essential for breeding in local populations.

Life History

The Quino life cycle includes four distinct life stages: egg, larva (caterpillar), pupa (chrysalis), and adult, with the larval stage divided into 5 to 7 instars (periods between molts, or shedding skin) (Service 2003a). Typically there is one generation of adults per year, although larvae may remain in diapause (summer dormancy) for multiple years prior to maturation (Service 2003a).

Population Trends

Scientific information indicates that Quino populations display metapopulation dynamics characterized by highly variable habitat occupancy patterns, similar to most subspecies of Edith's checkerspot butterfly (Mattoni *et al.* 1997; Service 2003a). Edith's checkerspot butterfly metapopulation structure is described by Ehrlich and Murphy (1987) as subdivision of a population into subpopulations that occupy clusters of habitat patches and interact extensively. Harrison et al. (1988) described Edith's checkerspot butterfly metapopulation structure as: "a set of [subpopulations] that are interdependent over ecological time." Although subpopulations within a metapopulation may change in size independently, their probabilities of existing at a given time are not independent, because they are linked by an extirpation and mutual recolonization process that occurs every 10 to 100 generations (Harrison *et al.* 1988). Ehrlich and Murphy (1987) noted that the minimum viable population approach favored by many conservation biologists may not be appropriate for the Edith's checkerspot butterfly; instead, focus should be shifted toward "minimum viable metapopulations." Minimum viable metapopulation size is the minimum number of interacting local populations (and available habitat patches) required to balance subpopulation extirpations and recolonizations, and therefore required for long-term persistence (Hanski *et al.* 1996). No minimum viable metapopulation sizes have been assessed for Quino. Metapopulation viability analyses have been conducted for other species of nymphalid butterflies (Schtickzelle and Baguette 2004; Schtickzelle *et al.* 2005) and one species within the genus *Euphydryas* (Wahlberg *et al.* 2002); however, these analyses are not applicable to Quino as these studies all examined species that occur in other types of habitats (e.g., forest clear cuts, bogs, and marshes).

Harrison (1989) found that, although dispersal direction from habitat patches seemed to be random in the bay checkerspot butterfly, dispersing butterflies were likely to move into habitat patches when they passed within approximately 163 feet (ft) [50 meters (m)] of those habitat patches. Dispersing butterflies were most likely to remain in habitat patches where existing bay checkerspot butterfly density was low (Harrison 1989). Bay checkerspot butterfly occupancy patterns also suggested that unoccupied habitat separated from occupied habitat by hilly terrain was less likely to be colonized than habitat separated by flat ground (Harrison 1989). Harrison (1989) concluded that the long-term habitat recolonization pattern of her study population was likely due to relatively large numbers of bay checkerspot butterflies having dispersed from consistently occupied "source" habitat. High habitat colonization rates probably only occur during rare outbreak years, when high local densities combine with favorable establishment conditions in unoccupied habitat (Harrison 1989). These rare outbreak events are also thought to play a crucial role in Quino metapopulation resilience and subspecies' survival (Murphy and White 1984; Ehrlich and Murphy 1987).

Our ability to delineate individual population footprints (distribution) for Quino is limited to correlating presence-absence survey observations with mapped habitat components. Quino habitat patches are defined in any given year by adult movement within annually shifting host plant and nectar source distributions. Geographic population footprints have not been quantified for Quino. Therefore, the recovery plan discusses Quino population locations in terms of "occurrence complexes" (Service 2007), which are our best estimators based on recorded movement distances (see below discussion). Occurrence complexes are mapped in the recovery plan using a 0.6 mile (mi) [1 kilometer (km)] movement radius from each butterfly observation, and may be based on the observation of a single individual. Occurrences within approximately 1.2 mi (2 km) of each other are considered to be part of the same occurrence complex, as these occurrences are proximal enough that the observed butterflies were likely to have come from the same population (Service 2003a). All post-listing butterfly observations are classified as occurrence complexes, and the only one considered extirpated is Harford Springs. Occurrence complexes may expand due to new observation locations, or contract due to habitat loss (e.g. occurrence complexes defined in part by development, see Service 2003a). Information regarding habitat within and contiguous with an occurrence complex must be used to estimate population distributions associated with occurrence complexes (Service 2003a).

Long-distance movement in bay checkerspot butterflies has been documented as far as 4 mi (6.4 km; 1 male) (Murphy and Ehrlich 1980), 3.5 mi (5.6 km; 1 male), and 2 mi (3 km; 1 female) (Harrison 1989). White and Levin (1981) conducted the only mark-recapture movement study including Quino checkerspot butterflies. White and Levin (1981) studied within-habitat patch movement of the Quino and bay checkerspot butterfly subspecies. They concluded that patterns of dispersal changed "dramatically" from year to year (White and Levin 1981), and Quino checkerspot butterflies were less sedentary than the more heavily studied bay checkerspot butterflies (White and Levin 1981). The high rate of dispersal observed by White and Levin (1981), when it occurs during outbreak events, would result in expansion of existing population

distributions, and recolonization of habitat patches where subpopulations have been extirpated within a metapopulation distribution, as hypothesized by Murphy and White (1984).

Although the average mark-recapture distance traveled by a Quino in White and Levin's (1981) study was only 305 ft (93 m), recorded movement distances were limited by the local study area. White and Levin (1981) stated, "It seems likely from the lower rate of return in 1972 and from the observed pattern of out-dispersal that many marked animals dispersed beyond the area covered by our efforts that year. This out-dispersal might make the value for average distance [traveled] in 1972 an underestimate of significant magnitude" (1981). According to recorded Edith's checkerspot butterfly movement distances (Gilbert and Singer 1973; Harrison *et al.* 1988; Harrison 1989), occurrence complexes appropriately describe the area within which a significant proportion of the habitat patch associated with individual observed butterflies is likely to occur (Service 2003a). The size of occurrence complexes is defined as the total area encompassed by all 1.2 mi (2 km) movement radii from individual butterfly observation locations. New occurrence information since 2002 supports expanding some occurrence complexes and/or merging some separate occurrence complexes that were previously described in the Quino recovery plan.

Some occurrence complexes were identified in the recovery plan (Service 2003a) as "core." Core occurrence complexes are those that, based on geographic size, number of reported individuals, and repeated observations, appear to be centers of population density. Such population density centers are likely to contain "source" habitat (supporting "source" subpopulations) for a Quino metapopulation (Murphy and White 1984; Ehrlich and Murphy 1987; Mattoni *et al.* 1997), or "source" populations for megapopulations (a group of populations also dependent on one another, but on a time scale greater than that of subpopulations; Service 2003a). A source population is one in which the emigration rate typically exceeds the immigration rate (therefore a source of colonists for unoccupied habitat patches within a population footprint), although they are not necessarily more stable than non-source populations (Service 2003a).

Threats

When Quino was listed on January 16, 1997, the primary threats to the subspecies thought to be responsible for its decline were reduction and fragmentation of habitat by urban and agricultural development and recreational activities, over-collection, vandalism, fire, and drought. Additional threats to the species and its habitat include trash dumping, nitrogen deposition, elevated atmospheric carbon dioxide concentrations, and climate change, were listed as active or probable threats in the final designation of critical habitat (Service 2002) published April 15, 2002.

Current threats to the subspecies and management needs were described in detail in the recovery plan (Service 2003a). They are: (1) loss and fragmentation of habitat and landscape

connectivity; (2) invasion by non-native plants; (3) off-road vehicle activity; (4) grazing; (5) fire; (6) enhanced soil nitrogen; (7) increasing atmospheric carbon dioxide concentration; and (8) climate change. Scientific research indicates all threats individually, and interactively, cause loss or reduced availability of Quino host plants, nectar sources, and suitable areas for necessary behaviors (e.g., mating, basking, hilltopping, etc.) (Service 2003a). This results in a loss of PCEs. For example, increased atmospheric carbon dioxide concentration resulted in an approximate 30 percent loss in seed production of *Plantago lanceolata* (Jablonski et al. 2002), and increased temperatures caused an approximate 5 percent reduction in reproductive duration (Sherry et al. 2007), indicating reduced host plant density and phenological availability under current and predicted climate conditions (Service 2003a). In addition, development activities can result in the loss of open, woody-canopy native scrublands and hilltops (space for normal behavior and larval diapausing sites) and fragmentation of habitat and landscape connectivity.

Management needs and actions recommended by the recovery plan that may be required to protect and maintain Quino include: (1) reestablishment and maintenance of habitat and landscape connectivity within and between populations (Service 2003a); (2) habitat restoration and control of invasive non-native species (Service 2003a); (3) monitoring of ongoing habitat loss and non-native plant invasion (Service 2003a); (4) phased replacement of grazing with non-native invasive plant control (Service 2003a); (5) carefully controlled burn experiments to assess effectiveness for control of non-native plant invasion and protection of PCEs from wildfire destruction (Service 2003a); (6) reduction of local nitrogen emissions from sources such as high-traffic roads (Service 2003a); (7) management of off-road vehicle activity (Service 2003a,), including outreach and partnerships with local off-road vehicle clubs and organizations (Service 2003a); (8) reduction of firearm use and trash dumping in habitat (Service 2003a); and (9) prudent design of managed habitats to include landscape connectivity (habitat) and ecological connectivity (wildlands that may not currently include habitat) (Service 2003a).

Critical Habitat

On April 15, 2002, the Service designated approximately 171,605 acres of land in Riverside and San Diego counties, California, as critical habitat (67 FR 18356). In March 2005, the Homebuilders Association of Northern California, *et al.*, filed suit against the Service challenging the merits of the final critical habitat designations for several species, including Quino. In March 2006, a settlement was reached that required the Service to re-evaluate five final critical habitat designations, including critical habitat designated for Quino. The settlement stipulated that any proposed revisions to the Quino designation would be submitted for publication to the *Federal Register* on or before December 7, 2007. An amendment to the settlement agreement extended this deadline to the *Federal Register* to January 8, 2008. In compliance with the settlement agreement, the Service proposed a revision to Quino critical habitat on January 17, 2008, including 98,487 acres of land in Riverside and San Diego counties, California (Service 2008). All areas currently designated under the April 15, 2002, final remain

designated pending completion of the revised final critical habitat rule, due to the *Federal Register* by December 7, 2008.

The 2008 proposed revision to critical habitat for Quino, if adopted, would result in a decrease of 73,118 acres from currently designated critical habitat for this subspecies. Changes from previously designated critical habitat are primarily based the use of new occupancy and habitat information gathered since the 2002 designation resulting in the merging or expanding of identified core occurrence complexes and the reclassification and subsequent removal of non-core occurrence complexes (Service 2008).

According to the April 15, 2002, critical habitat designation, the primary constituent elements (PCEs) required by Quino include: (1) grassland and open-canopy woody plant communities, such as coastal sage scrub, open red shank chaparral, and open juniper woodland, with host plants or nectar plants; (2) undeveloped areas containing grassland or open-canopy woody plant communities, within and between habitat patches, utilized for Quino mating, basking, and movement; or (3) prominent topographic features, such as hills and/or ridges, with an open woody or herbaceous canopy at the top

The PCEs outlined in the January 17, 2008, proposed revisions to critical habitat (73 FR 3328) include the following: (1) open areas within scrublands at least 21.5 square feet (2 square meters) in size that: a) contain no woody canopy cover; and b) contain one or more of the host plants *Plantago erecta*, *Plantago patagonica*, *Antirrhinum coulterianum*, or *Collinsia concolor* (determined to be a primary host plant species after proposed revisions to critical habitat were published; Pratt 2008a and 2008b); or c) contain one or more of the host plants *Cordylanthus rigidus* or *Castilleja exserta* that are within 328 feet (100 meters) of the host plants *Plantago erecta*, *Plantago patagonica*, *Antirrhinum coulterianum*, or *Collinsia concolor*; or d) contain flowering plants with a corolla tube less than or equal to 0.43 inches (11 millimeters) used for Quino growth, reproduction, and feeding; (2) open scrubland areas and vegetation within 656 feet (200 meters) of the open canopy areas (PCE 1) used for movement and basking; and (3) hilltops or ridges within scrublands, linked by open areas and natural vegetation (PCE 2) to open canopy areas (PCE 1) containing an open, woody-canopy area at least 21.5 square feet (2 square meters) in size used for Quino mating (hilltopping behavior) (73 FR 3328).

ENVIRONMENTAL BASELINE

Status of the Species in the Action Area

Within the Planning Area, extant occurrences of Quino are only known from private lands near the City of Jacumba. While a historic 1947 sighting of this species occurs within the Table Mountain National Cooperative Land and Wildlife Management Area (Service 2003), few surveys have been conducted on BLM lands in the Planning Area. Four studies have been conducted recently on BLM-administered lands in the Planning Area. In 2005, BLM (2005)

conducted a habitat assessment of all BLM-administered lands within the Southeast San Diego recovery unit identified as important for Quino recovery in the recovery plan developed for the subspecies (Service 2003). This habitat assessment identified and mapped the distribution of primary host plants and nectar sources on BLM lands in McCain Valley, Table Mountain, and Round Mountain. Areas containing primary host plants (*Plantago erecta*, *P. patagonica*, *Antirrhinum coulterianum*, *Cordylanthus rigidus*, and *Castilleja exserta*) were then identified as the focus of future adult Quino surveys. Based on the results of the habitat assessment, BLM concluded that suitable habitat is present in some of the chaparral and shrubland habitats, particularly on Table Mountain and on Round Mountain (BLM 2005).

Also in 2005, a habitat assessment was conducted along eight linear miles of ridgelines in McCain Valley and Thing Valley (Osborne 2005). This assessment evaluated habitat conditions and potential for Quino in an area being considered for future wind energy development. While conditions on the central and southeastern portions of McCain Valley suggest the possible occurrence of host plants, only a few dried remnants of a previous year were found. Given the absence of host plants, Osborne (2005) concluded that Quino has very little chance of occurring on any portion of the specific project area.

In 2006, BLM hired contractors to conduct focused adult flight season surveys in the Table Mountain area (Osborne 2006) and the Lark Canyon Study Site (Tierra Environmental Services 2006). While no primary host plants were observed in Lark Canyon during BLM's 2005 habitat assessment, the BLM considers this area to have a "high habitat potential" for Quino (Tierra Environmental Services 2006). Surveys conducted in these areas deviated from the Service's Quino survey protocol but instead focused on hilltops and ridgelines in the vicinity of known primary host plant resources areas on Table Mountain as documented during BLM's 2005 habitat assessment (Osborne 2006, Tierra Environmental Services 2006). No primary host plants and only moderate nectar sources were observed during these survey efforts. However, given the prevailing drought conditions occurring at the time of the surveys (2006) and the absence of Quino from nearby reference sites in Jacumba during the same time period, both survey efforts concluded that the absence of Quino adults or larvae in the study areas was inconclusive (Osborne 2006, Tierra Environmental Services 2006).

As stated above, these four studies focused on areas within the Southeast San Diego recovery unit identified as important for Quino recovery in the subspecies' recovery plan (Service 2003). However, the remainder of the Planning Area north of the Southeast San Diego recovery unit has not been well surveyed for Quino and/or its potential habitat. Also, since Chinese houses (*Collinsia concolor*) was recently documented as a larval host plant (2008), its presence may have been overlooked during these survey efforts. As outlined in the Quino Checkerspot Butterfly Survey Protocol Information, the Service recommends that site assessments be conducted for all projects within the recommended survey area which indicates areas of known and/or potential occupancy based on vegetation mapping (Service 2002; 2005). Over half of the BLM lands in the Planning Area, including 2002 designated critical habitat, are within this

recommended survey area. Approximately 116 acres of critical habitat designated in 2002 for Quino occurs on BLM-administered lands within the Planning Area. While the 2008 revised proposed critical habitat for Quino occurs within the Planning Area, there is no overlap with BLM-administered lands.

Factors Affecting the Species' Environment within the Action Area

The primary factors affecting Quino within the action area include loss and fragmentation of habitat and landscape connectivity, invasion by non-native plants, off-road vehicle activity, grazing, and fire.

Peninsular Bighorn Sheep (*Ovis canadensis*; PBS)

Status of the Species/Critical Habitat

Listing Status

The Peninsular bighorn sheep was federally listed as endangered on March 18, 1998 (Service 199863). A recovery plan was approved in October 2000 and 844,897 acres of critical habitat were designated on February 1, 2001 (Service 2001). The decision to list PBS was made because of declining population numbers and continuing habitat loss, degradation, and fragmentation throughout a significant portion of bighorn sheep habitat within the Peninsular Ranges. In addition, periods of depressed recruitment, likely associated with disease, and high predation, coincided with low population numbers endangering the continued existence of these animals in southern California. The California Fish and Game Commission listed bighorn sheep inhabiting the Peninsular Ranges as "rare" in 1971. In 1984, the designation was changed to "threatened" by the CDFG to conform to the terminology in the amended California Endangered Species Act.

Species Description

Bighorn sheep inhabiting the Peninsular Ranges were once considered a separate subspecies (*Ovis canadensis cremnobates*) and were one of the 4 desert subspecies (*O. c. nelsoni, O. c. mexicana, O. c. cremnobates*, and *O. c.weemsi*) recognized by Cowan (1940). The validity of these subspecies delineations was questioned and reassessed when modern techniques became available. Based on morphometric and genetic results, Wehausen and Ramey (1993) placed Peninsular bighorn within the *O. c. nelsoni* subspecies, which is the current taxonomy. The range of *O. c. nelsoni* or Nelson bighorn sheep is relatively widespread covering much of Nevada, Utah, southern California, and northwest Arizona (Monson and Sumner 1980). Consequently, bighorn sheep in the Peninsular Ranges of the U. S. were listed as a distinct population segment under the Act, and not as a separate subspecies. However, bighorn sheep inhabiting the Peninsular Mountain Ranges are still commonly referred to as Peninsular bighorn sheep.

The Peninsular Ranges of California are northern extensions of the mountain ranges of Baja California, Mexico, and in recent years the majority of PBS have been located in Mexico (DeForge *et al.* 1993; Rubin *et al.*1998). Peninsular bighorn sheep are found along steep, east-facing escarpments in the desert regions of the Baja Peninsula, south to the Las Virgenes Mountains near the town of San Ignacio (Weaver 1975; DeForge *et al.* 1999). The mountain ranges of Baja are remote and rugged, thus obtaining accurate population estimates is very difficult. Biologists currently estimate that approximately 2,500 PBS inhabit northern Baja (DeForge *et al.* 1999), much less than the estimates of over 28,000 from the turn of the century. The problems facing Peninsular bighorn in Baja are different than the challenges facing them in the United States. Habitat loss resulting from housing, resort, and golf course development does not currently pose the same level of threat present in the United States, but poaching, competition with domestic and feral livestock, predation, and diseases introduced from domestic livestock continue to impact these herds (DeForge *et al.* 1999).

Distribution

Though the overall range of PBS extends from the San Jacinto Mountains near Palm Springs, California south to into Baja California, Mexico, only the distinct vertebrate population segment within the United States is listed as endangered and addressed in this document. For a population to be listed under the Act as a distinct vertebrate population segment, three elements are considered (61 FR 4722): (1) the discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs, and (3) the population segment's conservation status in relation to the Act's standards for listing. Within the United States, the range extends along the Peninsular Ranges from the San Jacinto Mountains of southern California south to the United States - Mexico border. Peninsular bighorn sheep habitat in the Peninsular Ranges of California is restricted to the east facing, lower elevation slopes typically below 4,600 feet along the northwestern edge of the Colorado Division of the Sonoran Desert.

An examination of past records and current data suggests that the distribution of PBS in California has been altered during the past 25 years. Ewe groups in the northern San Jacinto Mountains (north of Chino Canyon) were apparently extirpated in the late1980's (DeForge *et al* 1997; Rubin *et al.* 1998). DeForge *et al.* (1997) suggested disturbance and habitat fragmentation were the primary factors driving the changes in bighorn distribution in the northern San Jacinto Mountains. Blong (1967) reported that construction of the Tram Road through Chino Canyon severely reduced bighorn movement in this area. Ewes ceased regularly occupying the northern San Jacinto Mountains about 20 years after construction of the Palm Springs Aerial Tramway in Chino Canyon, though rams continued to occasionally cross Chino Canyon and use the area formerly occupied by the ewe group (DeForge *et al.* 1997). However, ewes were recently documented crossing Chino Canyon in 2005, and were regularly located within Chino Canyon during 2007 (Bighorn Institute 2005, unpublished data 2007).

In the northern Santa Rosa Mountains, the number and distribution of PBS is substantially reduced from the 1970's and 80's, with formerly important use areas, such as Carrizo and Dead Indian Canyons (Blong and Pollard 1968), currently supporting few animals (DeForge and Scott 1982; DeForge *et al.* 1995; Bighorn Institute 1998, 1999). Rubin *et al.* (1998) suggested that in portions of the range, roads or increased traffic have contributed to habitat fragmentation by restricting ewe movement, as evidenced by 4 ewe groups having home ranges delineated by roadways. In the 1970's, ewes were observed crossing Highway 74 in the Santa Rosa Mountains (V. Bleich, pers. comm.; D. Jessup, *in litt.* 1999). However, no radio-collared ewes were observed crossing this road from 1993 to 2001 (DeForge *in litt.* 1997). California Department of Transportation records indicated Highway 74 traffic approximately tripled from 1970 onward. In addition, the attraction of PBS to urban sources of food and water in conjunction with increased human traffic on the Dunn Road caused bighorns to reduce their home ranges in the northern Santa Rosa Mountains (Ostermann *et al.* 2001).

Little information exists on the status of PBS occupying the Jacumba Mountains between Interstate Highway 8 and the US-Mexico border. Ewe groups along the Mexican border were believed to be extirpated in the late1980's (DeForge *et al.* 1997; Rubin *et al.* 1998). Construction of the interstate in the mid-1960's, railroad activity, livestock grazing, poaching, and fire suppression appear to be the most likely factors contributing to the isolation and decline of PBS in the area (Rubin *et al.* 1998). However, evidence of PBS occurrence near the international border was provided in 2007 as part of a proposed California Department of Transportation project to seismically retrofit bridges at Myers and Devil canyons in the Jacumba Mountains. This evidence included scat and tracks collected from the canyons near these two bridges. Anecdotal observations by CBP agents in Davies Valley (the large north-south valley in the Jacumba Mountains near the border) and Pinto Wash have also added to the Service's knowledge of PBS south of Interstate Highway 8. Most recently in March 2008, CBP agents observed a group of seven PBS, including one lamb, on the Jeep Trail near Interstate 8 (pers. comm., Kurt Roblek, Service, 2008). In April 2008, Service biologists located PBS scat in four separate areas in Pinto Canyon near the international border in Davis Valley (Southern Jacumba Mountains).

Habitat Affinities

Bighorn sheep in the Peninsular Ranges and throughout the desert southwest have important habitat requirements that relate to topography, visibility, water availability, and forage quality and quantity. Bighorn sheep evolved predator evasion behaviors that use escape terrain, which is generally defined as steep, rugged slopes (Hansen 1980c, Cunningham 1989). Escape terrain is critical because bighorn sheep typically do not depend upon speed alone to outrun their predators, but use their exceptional climbing abilities to out maneuver predators on steep, rocky outcrops and talus slopes (Geist 1971, McQuivey 1978). When ewes are ready to give birth they will typically seek out the most precipitous terrain, where they and their lambs will be safest (Geist 1971). The presence of such steep terrain for predator evasion and lambing is, therefore, a

crucial component of bighorn sheep habitat. Variation in slope and aspect also help bighorn sheep to survive in a harsh environment. During hot weather, desert bighorn seek shade under boulders, over hanging rock, and cliffs, or they may move to north facing slopes (Merritt 1974, Andrew 1994) where temperatures are moderated. During inclement weather bighorns may again seek protected caves, overhangs, or slopes that are protected from strong winds, and on cold winter days bighorns may move to sunny, south facing slopes (Andrew 1994).

The predator evasion behavior of bighorn sheep also depends on the ability to visually detect danger at a distance. Bighorn sheep will avoid habitat in which dense vegetation reduces visibility (Risenhoover and Bailey 1985, Etchberger *et al.* 1989). This appears to be the case in the Peninsular Ranges, where bighorn sheep usually remain below the elevation of chaparral and other dense vegetation associations. In the Peninsular Ranges, bighorn sheep habitat occurs along the east-facing desert slopes, typically below approximately 1,400-meter (4,600-foot) elevations (Jorgensen and Turner 1975, DeForge *et al.* 1997). The elevational patterns of vegetation associations in the Peninsular Ranges, in combination with bighorn sheep predator avoidance behavior, result in habitat use patterns that are more restricted to lower elevations than in most other bighorn populations. The available habitat of PBS can, therefore, be visualized as a long, narrow band that runs north-south along the lower elevations of the Peninsular Ranges.

In addition to mountainous terrain, other types of habitat are crucial to bighorn sheep populations. Areas of gentle terrain, such as valley floors, serve as important linkages between neighboring mountainous regions, thereby providing bighorn sheep temporary access to resources (e.g., forage, water, or lambing habitat) in neighboring areas, and allowing gene flow to occur between subpopulations (Krausman and Leopold 1986, Schwartz *et al.* 1986, Bleich *et al.* 1990a, Bleich *et al.* 1996). Alluvial fans and washes contain a greater diversity of browse species than steeper terrain, and this diverse vegetation furnishes important sources of high quality forage (Leslie and Douglas 1979). In summer and times of drought, wash vegetation remains green longer than vegetation in other areas, providing forage higher in nutrients and digestibility than the dry, brown forages found on the mountainsides under these conditions (Andrew 1994). Leslie and Douglas (1979) noted that these areas became increasingly important to bighorn sheep not only in summer, but during any period of limited forage availability. Bighorn sheep in the Peninsular Ranges have been observed foraging on alluvial fans for extended periods of time in Coyote Canyon and other undeveloped washes and alluvial fans within Anza-Borrego Desert State Park (Ostermann, Rubin, Jorgensen unpublished data). In the northern Santa Rosa and San Jacinto Mountains, much of the alluvial fan and wash habitat has been lost to residential and golf course development (Service 2000).

In hot, arid deserts, water is an important resource for bighorn sheep (Jones *et al.* 1957, Blong and Pollard 1968, Leslie and Douglas 1979, Turner and Weaver 1980, Elenowitz 1984, Cunningham and Ohmart 1986). A number of studies have shown that desert bighorn sheep will concentrate around water sources in the summer, with most animals found within a 3- to 5-kilometer (2- to 3-mile) radius of water (Jones *et al.* 1957, Leslie and Douglas 1979,

Cunningham and Ohmart 1986). During periods of more abundant rainfall and cooler temperatures, sheep distribution is less coincident with permanent water sources (Leslie and Douglas 1979). Apparently, bighorn sheep obtain enough water from forage to meet their requirements during cooler, wetter portions of the year. Lactating ewes and lambs appear to be more dependent on free-standing water and are often found closer to water sources (Blong and Pollard 1968, Leslie and Douglas 1979, Bleich *et al.* 1997). Water sources are most valuable to bighorn sheep if they occur in proximity to adequate escape terrain with good visibility. Therefore, the juxtaposition of open escape terrain to water sources is an important factor in their utilization (Cunningham 1989, Andrew 1994). The critical importance of free-standing water to bighorn sheep has been questioned (Krausman and Leopold 1986, Broyles 1995), and some small populations apparently exist without free-standing water (Krausman *et al.* 1985, Krausman and Leopold 1986, Broyles 1995). However, in most populations, bighorn sheep will drink regularly when water is available and concentrate near water sources during the warmer months. In the Peninsular Ranges, bighorns migrate seasonally during the hot season, leaving mountain ranges where no standing water is known to exist, such as the Coyote Mountains, and moving to adjacent mountain ranges where standing water is available year-round. They then center their activity on standing water for the hot season, and this behavior may indicate that vegetation alone does not provide sufficient water during the hot season, and at least in some mountain ranges, standing water is a requirement.

In the Peninsular Ranges, bighorn sheep use a wide variety of plant species as their food source (Weaver *et al.* 1968, Jorgensen and Turner 1973). Turner (1973) recorded the use of at least 43 species, with browse being the food category most frequently consumed. Cunningham and Ohmart (1986) determined that the bighorn sheep diet in Carrizo Canyon (at the south end of the U.S. Peninsular Ranges) consisted of 57 percent shrubs, 32 percent forbs, 8 percent cacti, and 2 percent grasses. Scott (1986) and Turner (1976) reported similar diet compositions at the north end of the range. Diet composition varied among seasons (Cunningham and Ohmart 1986, Scott 1986), presumably because of variability in forage availability, selection of specific plant species during different times of the year (Scott 1986), and seasonal movements of bighorn sheep.

The time period surrounding late gestation, lambing, and nursing is very demanding in terms of the energy and protein required by bighorn ewes. Failure to acquire sufficient nutrients during late gestation and during nursing adversely affects the survival of newborn ungulates (Thorne *et al.* 1976, Julander *et al.* 1961, Holl *et al.* 1979). Crude protein and digestible energy values of early green-up species are usually much higher than those of dormant forages during the critical late gestation, lambing, and rearing seasons. With their high nutrient content, even minor volumes of these forages within the overall diet composition may contribute important nutritional value at critical life stages (Wagner 2000). However, during the reproductive season, due to the varied topography of bighorn sheep habitat, these forages typically are concentrated on specific sites, such as alluvial fans and washes, where more productive soils support greater herbaceous growth than steeper, rockier soils. Furthermore, forage green-up follows an elevational gradient with lower elevations beginning spring growth earlier than higher elevations (Wehausen 1980,

Berger 1991). Access to a range of elevations provides bighorn sheep enhanced opportunities to acquire nutrients during critical seasons.

Life History

The movement patterns and habits of ewes are learned by their offspring (Geist 1971). By following older animals, young bighorn sheep gather knowledge about escape terrain, water sources, foraging areas, and lambing habitat (Geist 1971). As young rams reach 2 to 4 years of age, they begin to follow older rams away from their natal group (Geist 1971, Festa-Bianchet 1991). Because bighorn sheep rely on vigilance to detect predators, they benefit from gregariousness and group alertness (Geist 1971, Berger 1978).

The adult sexes tend to loosely segregate during much of the year, coming together primarily during the rut (Geist 1971, Bleich *et al.* 1997), which typically peaks from August through October in the Peninsular Ranges (Rubin *et al.* 2000). During the rut, rams join the ewe groups and compete to breed with receptive ewes. The largest rams presumably are the most successful breeders, but smaller rams have been reported to breed as well (Hogg 1984). During the period of sexual segregation, ewes and their lambs are typically found in steeper, more secure habitat, while rams may be found in less steep or rugged terrain (Geist 1971, Bleich *et al.* 1997).

Desert bighorn sheep are primarily diurnal (Krausman *et al.* 1985) but may be active at any time of day or night (Miller *et al.* 1984). Their daily activity pattern includes alternating feeding and resting/ruminating periods. Forage quality influences activity patterns because when forages are low in digestibility, bighorn sheep must spend more time ruminating and digesting forage. Consequently, bighorn sheep may establish a cycle of feeding and ruminating that reflects forage quality and optimizes nutrient intake (Wagner and Peek 1999, Wagner 2000).

In general, bighorn sheep are wide-ranging species that require large swaths of relatively pristine land. For example, in the San Jacinto Mountains, fixed-kernel home range sizes averaged 25 km^2 for rams and 20 km^2 for ewes (DeForge *et al.* 1997). Large home ranges allow for animals to move in response to variation in predation pressure and changes in resource availability. The size of individual or group home ranges depends on the juxtaposition of required resources (water, forage, escape, or lambing habitat) and, therefore, varies geographically. Home range size also is affected by forage quantity and quality, season, sex, and age of the animal (Leslie 1977, McQuivey 1978). Although most desert bighorn sheep do not seasonally migrate along elevational gradients like many populations in higher latitude mountain ranges, they do exhibit seasonal differences in habitat use patterns. In many populations, animals will have a smaller home range in summer (McQuivey 1978, Leslie and Douglas 1979, Elenowitz 1983), presumably due to their limited movement away from permanent water sources. During the cooler or wetter months of the year, bighorn sheep often exhibit an expanded range as animals move farther from water sources (Simmons 1980). Ewes generally display a higher degree of philopatry to their seasonal home ranges than do rams. Rams tend to range more widely, often moving among ewe

groups (Boyce *et al.* 1997, DeForge *et al.* 1997, Rubin *et al.* 1998). In most populations of desert bighorn sheep, ram home ranges have been found to be larger than those of ewes (Simmons 1980, DeForge *et al.* 1997).

The gregarious and philopatric behavior of ewes limits their dispersal and exploratory ability relative to those of rams (Geist 1967, 1971). Geist (1971) theorized, however, that a young ewe might switch to a new ewe group if she encountered neighboring sheep and followed them away from her natal ewe group. In the Peninsular Ranges, movement of radio-collared ewes between ewe groups is rare however, inter-group movement does occasionally occur. During a 3-year study, one ewe moved over 30 kilometers (18.6 miles) and temporarily joined another ewe group (Rubin *et al.* 1998). No emigration of ewes has been observed even though radio-collared animals have been regularly monitored in the northern Santa Rosa Mountains since 1981 (Ostermann *et al.* 2001) and throughout the range since 1993 (E. Rubin, pers. comm.; DeForge *et al.* 1997). Bighorn sheep evolved movement patterns that were adapted to exploiting stable patches of habitat, consequently compared to other North American ungulates they are regarded as poor dispersers (Geist 1971). Nevertheless, dispersal and exploratory movements do occur, and genetic analyses reflect a low rate of ewe dispersal across the Peninsular Ranges in the evolutionary past (Boyce *et al.* 1999). In 2005, two yearling ewes crossed Chino Canyon, and temporarily occupied the area north of the canyon in an exploratory movement documented by the Bighorn Institute.

The breeding period, or rut, occurs in the late summer and fall months. In the Peninsular Ranges, ewes estimated to be between 2 and 16 years of age have been documented to produce lambs (Rubin *et al.* 2000, Ostermann *et al.* 2001). As parturition approaches, ewes seek secluded sites with shelter, escape terrain, and unobstructed views (Turner and Hansen 1980). They isolate themselves from other females while bearing their lambs (Etchberger and Krausman 1999). Lambs are born after a gestation of approximately 6 months-171 to 185 days (Turner and Hansen 1980, Shackleton *et al.* 1984, Hass 1995). During a 4-year (1993 to 1996) study conducted in the Peninsular Ranges south of the San Jacinto Mountains, the lambing season extended from February through August; however, 87 percent of the lambs were born from February to April, and 55 percent of the lambs were born in March (Rubin *et al.* 2000). DeForge *et al.* (1997) and Cunningham (1982) reported a similar onset of the lambing season in the San Jacinto Mountains and in Carrizo Canyon, respectively. In the San Jacinto and northern Santa Rosa Mountains, ewe groups, the lambing season begins in January during some years (Bighorn Institute 1997). Lambs usually are weaned by 6 months of age (Hansen and Deming 1980, Wehausen 1980).

From 1993 to 1996, the reproductive patterns of five ewe groups (Carrizo Canyon, south San Ysidro Mountains, north San Ysidro Mountains, Santa Rosa Mountains [Deep Canyon], and northern Santa Rosa Mountains) were monitored and annual lamb production averaged 77 percent (0.77 lambs born per "ewe-year") for the 4-year period (E. Rubin, pers. comm.). Using a fecal-based enzyme immunoassay, Borjesson *et al.* (1996) determined that in the fall of 1992, at

least 85 percent of sampled adult ewes were pregnant. Both of these observations suggest that conception rates are not currently limiting population growth in the Peninsular Ranges.

Lamb survival (to 6 months of age) was variable among groups and across years. A year of high lamb survival in one group was not necessarily a high survival year in another group (Rubin *et al.* 2000). Of the four groups studied the northern Santa Rosa Mountains group typically had the lowest lamb survival, while the neighboring Deep Canyon group, located less than 8 kilometers (5 miles) away, had the highest lamb survival. Lamb recruitment in the northern Santa Rosa Mountains was found to be very low between the years of 1977 and 1997 (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982; Ostermann *et al.* 2001). Shorter periods of low lamb to ewe ratios, as well as clinical signs of pneumonia among lambs, have occasionally been observed in Anza-Borrego Desert State Park (Jorgensen and Turner 1973, Jorgensen and Turner 1975, Hicks 1978), but years of high lamb to ewe ratios (Cunningham 1982; M. Jorgensen, pers. comm.) have been observed in these areas as well (Rubin *et al.* 2000).

Wehausen (1992) suggested that periods of low recruitment may not warrant alarm because long-lived animals such as bighorn sheep can exist in viable populations if periods of low offspring recruitment are interrupted by periodic pulses of high offspring recruitment. Most ewe groups in the Peninsular Ranges appear to have exhibited such pulses of high recruitment but declining population trends suggest that they have not been sufficient to balance adult mortality over longer time periods.

In ruminants, reproductive success is related to the mother's body weight, access to resources, quality of home range, and age (Etchberger and Krausman 1999). Survival of offspring also depends on birth weight and parturition date. Festa-Bianchet and Jorgenson (1996) found that female sheep reduce the care of lambs when resources are scarce to favor their own nutritional requirements over their lamb's development. Ewes that fail to acquire a minimum level of energy reserves (i.e., body weight) may not conceive (Wehausen 1984) or will produce smaller offspring with a poorer chance of survival (Price and White 1985). Several studies have documented a positive relationship between winter precipitation and lamb recruitment in the following year (Douglas and Leslie 1986, Wehausen *et al.* 1987). However, the relationships between climate, lamb recruitment, and population trends likely differ among different bighorn sheep populations, and are not fully understood (Rubin *et al.* 2000).

Lamb and yearling age classes experience high mortality rates relative to adult bighorns. After reaching adulthood at two years of age, bighorn sheep survival is high until ten years of age (Hansen 1980b), or until shortly before the age of ecological longevity (Cowan and Geist 1971). However, observed values of annual adult survivorship in PBS appears low relative to other reported desert populations. During November 1992 to May 1998, survivorship of 113 adult radio-collared bighorn sheep (97 ewes and 16 rams) was monitored between Highway 74 (in the Santa Rosa Mountains) and the U.S.-Mexico border. During this period, overall annual adult survival was 0.79, with no significant difference among three age classes of adults (Hayes *et al*

2000). Annual survivorship of individual ewe groups ranged from 0.70 to 0.87, and a year of high survivorship in one group was not necessarily a year of high survivorship in other groups (Rubin *et al.* 1998). In the northern Santa Rosa Mountains ewe group, adult survivorship was monitored during a 14-year period (1985 to 1998), and was found to range between 0.50 and 1.00 annually (Ostermann *et al.* 2001). In the San Jacinto Mountains, DeForge *et al.* (1997) monitored the survival of adult (2 or more years of age) radio-collared bighorn sheep during 1993 to 1996 and estimated annual adult survival to be 0.75.

Survival of desert bighorn sheep in greater southeastern California averaged 0.91 (Andrew 1994), 0.86 or greater in northwest Arizona (when highway mortalities were excluded, (Cunningham and deVos 1992), 0.82 in New Mexico (Logan *et al.* 1996), and 0.85 or greater for four populations studied in the Mojave Desert (Wehausen 1992).

Population Trends

Bighorn sheep have been documented in the Peninsular Ranges since early explorers, such as Anza, observed them in the 1700's (Bolton 1930). Grinnell and Swarth (1913) described the area of Deep Canyon in the southern Santa Rosa Mountains, "...well worn trails, footprints, and feces were plentiful. In places it looked as though a herd of domestic sheep had been over the region." Rangewide population estimates were not made until the 1970's. Published estimates were as high as 971 in 1972 (Weaver 1972), and 1,171 in 1974 (Weaver 1975). Range-wide population estimates in the U.S. were 570 in 1988 (Weaver 1989), 400 in 1992 (Service 1992), and between 327 and 524 in 1993 (Torres *et al.* 1994). Starting in 1994 a biennial helicopter census has been conducted throughout the Peninsular Ranges using radio-collared animals to estimate sighting probabilities. The range-wide population estimates were 347, 276, 334, 400, 667, 708, and 793 for the years 1994-2006, respectively. From the historic highs of the 1970's, population estimates declined to a low of 276 adults in 1996 (Service 2000); since 1996, the population has steadily increased. Currently, at least 8 ewe groups (also referred to as subpopulations) exist in the overall range in the U.S., however, the population trajectory of each ewe group appears to be determined independently (Rubin *et al.* 1998). Climatic patterns are correlated across the Peninsular Ranges, suggesting that other local factors specific to each ewe group play important roles in determining long-term abundance trends (Rubin *et al.* 1998). Independent population trends also were observed among ewe groups in the Mojave Desert (Wehausen 1992). Bighorn sheep are relatively long-lived animals that have the potential to reproduce over an extended period of time (2-16 years). Therefore, periods of above average recruitment may compensate for periods of low recruitment (Wehausen 1992). Forage quality and quantity vary with environmental conditions; therefore, female condition, and conception, parturition and lamb survival rates reflect this natural variation. However, if mortality agents begin impacting adult survival, then subpopulation levels may drop dramatically, endangering the existence of a ewe group. Consequently, a ewe group's persistence is always vulnerable to disease outbreaks, high levels of predation, mortality caused by urbanization, and habitat loss from development and human disturbance.

An important consideration in the natural history of bighorn sheep is their behavioral response to human activity. Bighorn sheep were classified as a wilderness species by Aldo Leopold (1933) because they usually declined when confronted with expanding human developments and activities. Over the past 75 years, numerous other scientists and land managers have expressed concerns regarding the impact of human activities on bighorn sheep populations (Horesji 1976, Hicks and Elder 1979, Graham 1980, Leslie and Douglas 1980, Hamilton *et al.* 1982, Stemp 1983, Miller and Smith 1985, Gionfriddo and Krausman 1986, Krausman and Leopold 1986, Smith and Krausman 1988, Etchberger *et al.* 1989, Krausman *et al.* 2001, Papouchis *et al.* 2001). These concerns have been echoed in the Peninsular Ranges where bighorn sheep have altered their movement and habitat use patterns in response to human activity (Jorgensen and Turner 1973, Hicks 1978, Olech 1979, Cunningham 1982, DeForge and Scott 1982, Gross 1987, Sanchez *et al.* 1988). The impacts of human development extend beyond the urban edge into bighorn sheep habitat. A growing human population and increased activity adjacent to and within bighorn sheep habitat have the potential to adversely affect bighorn sheep.

Bighorn sheep have fared poorly when urban areas have expanded around and within their ranges. In the Sandia Mountains of New Mexico and the Santa Catalina Mountains of Arizona, two populations of desert bighorn sheep faced situations very similar to the one now challenging the bighorn sheep inhabiting the Peninsular ranges of California. The bighorn sheep population in the Sandia Mountains declined to extinction, and the population in the Santa Catalina Mountains appears to be extinct (Krausman *et al.* 2001). Factors, such as predation or disease, do not appear to have played a significant role in either of the above extinctions. Instead, in both cases the level of human activity appears to have been too great for bighorn sheep to survive. In the Sandia Mountains, human activity doubled from 1975 to 1990, as hiking trails, ski areas, restaurants, and a tramway were built (Krausman *et al.* 2001). In the Santa Catalina Mountains, real estate development eliminated bighorn sheep habitat (Krausman 1993), hiking activity, dog use, and other recreational activities increased in more remote areas (Schoenecker 1997), and fire suppression allowed the vegetation in some areas to become too dense for bighorn sheep (Gionfriddo and Krausman 1985, Krausman *et al.* 1996). As a result, Krausman *et al.* (2001) concluded that based on this experience and the extirpation of bighorn sheep in the Sandia Mountains near the City of Albuquerque, that "When development occurs adjacent to and in mountain sheep habitat, the sheep eventually decline and ultimately become extinct. Society is faced with a difficult choice: either restrict suburban expansion and control human activities within sheep habitat or accept the reality that sheep and expanding developments are simply not compatible".

The ewe groups adjacent to the urbanized Coachella Valley have experienced greater challenges maintaining population levels. In the San Jacinto Mountains where bighorn are adjacent to the city of Palm Springs, the subpopulation declined from historic estimates of over 200 animals, then remained approximately stable (17-33 individuals) between 1992 and 2004, however the unbalanced sex ratio caused concern (Bighorn Institute 2000). In 2005, the San Jacinto Mountains ewe group was estimated to number 23 adult bighorn (10F, 13M), with only four

ewes originating from wild sheep and the remaining six ewes being captive-releases (Bighorn Institute, unpublished data). In the nearby Santa Rosa Mountains, the three ewe groups declined 69 percent from 1984 to 1990, remained stable at 115-120 individuals from 1990-1995, and declined in 1996 to approximately 95 adults. Currently, these 3 ewe groups total approximately 391 adults (CDFG 2006 helicopter surveys, unpublished data), with only 49 adults occurring in the northern Santa Rosa Mountains, the area with the greatest urban/wildland interface. The ewe groups in the northern Santa Rosas and southern San Jacinto Mountains continue to receive intensive monitoring from the Bighorn Institute, and both have periodically been augmented with captive-reared individuals.

Helicopter surveys south of the Santa Rosa Mountains, indicated a 28 percent decline in ewe numbers in a 2-year period (from an estimate of 141 females in 1994 to 102 females in 1996; Rubin *et al.* 1998), and a statistically non-significant increase (from approximately 102 to 112 females) from 1996 to 1998 (Rubin *et al.* 1999). Ewe groups in Coyote Canyon, North San Ysidro Mountains, and South San Ysidro Mountains, and the Vallecitos/Fish Creeks now number approximately 236 individuals, with approximately 145 adult bighorn inhabiting Carrizo Canyon (CDFG 2007). These subpopulations occur largely within Anza-Borrego Desert State Park, and have not faced the same challenges and problems associated with living next to rapidly expanding urban areas experienced by the bighorn in the San Jacinto and northern Santa Rosa Mountains. Nevertheless, three of these subpopulations, Coyote Canyon, South San Ysidro, and Vallecitos/Fish Creeks, declined slightly from 2004 to 2006.

Threats

Threats to bighorn sheep in the Peninsular Ranges include habitat loss and fragmentation, urban sources of mortality, human disturbance, disease, and mountain lion predation (Service 2000). As discussed above, the population dynamics of ewe groups operate independently, and threats to the various ewe groups vary spatially and temporally.

Habitat loss is a leading cause of current species extinctions and endangerment worldwide (Burgman *et al.* 1993). It represents a particularly serious threat to PBS, because they live in a narrow band of lower elevation habitat that represents some of the most desirable real estate in the California desert, and it is being developed at a rapid pace. At least 18,500 acres (7,490 hectares or about 30 square miles) of suitable habitat has been lost to urbanization and agriculture within the range of the three ewe groups that occur along the urban interface between Palm Springs and La Quinta, and development is spreading southward towards Anza-Borrego Desert State Park. Within the narrow band of habitat, bighorn sheep make use of sparse and sometimes sporadically available resources found within their home ranges. As humans encroach into this habitat, these resources are eliminated or reduced in value, and the survival of ewe groups is threatened. Bighorn sheep are also sensitive to habitat loss or modification because they are relatively poor dispersers (Geist 1967, 1971), largely learning their ranging patterns from older animals. When habitat is lost or modified, the affected group is likely to

remain within their familiar surroundings but with a reduced likelihood of population persistence, due to the reduced quantity and/or quality of resources.

Development and human populations along the eastern slope of the Peninsular Ranges continue to grow at a rapid pace at the lower and upper elevational boundaries of PBS habitat. The Coachella Valley Association of Governments anticipates that by the year 2010, the human population in the Coachella Valley will increase from 227,000 to over 497,000, not including 165,000 to 200,000 seasonal residents. In recent years, bighorn population declines within the Peninsular Ranges have been most pronounced in ewe groups adjoining the urban interface in the Coachella Valley (DeForge *et al.* 1994; Rubin *et al.* 1998). These ewe groups may have gone extinct without intensive management efforts, such as releasing captive-reared individuals, voluntary trail closures, and the purchase of land for conservation purposes.

Encroaching urban development and anthropogenic disturbances have the dual effect of restricting animals to a smaller area and severing connections between ewe groups. Fragmentation poses a particularly severe threat to species with a metapopulation structure, such as PBS, because overall survival depends on interaction among subpopulations. Isolated, small groups of animals are subject to greater risks of extinction, while inter-connected, small groups acquire much of the resilience of larger populations. The movement of rams and occasional ewes between ewe groups maintains genetic diversity and augments populations of individual ewe groups (Brown and Kodric-Brown 1977, Soulé 1980, Krausman and Leopold 1986, Schwartz *et al.* 1986, Burgman *et al.* 1993). Temporary moves by females between neighboring ewe groups could also provide new habitat knowledge facilitating future range expansion (Geist 1971). Increased fragmentation reduces such possibilities and increases the risk of ewe group extinction.

Beyond physical barriers to movement, fragmentation also can result from less obvious forms of habitat modification. Increased traffic on roads apparently make bighorn sheep, especially ewes, hesitant to cross these roads (Rubin *et al.* 1998; Epps *et al.* 2005). Animals that do cross suffer an additional risk of mortality from automobile collisions (Turner 1976, McQuivey 1978, Cunningham and deVos 1992, DeForge and Ostermann 1998b, Bighorn Institute 1999), with the result that a group whose range is bisected by a road can have reduced viability in the long-term (Cunningham and deVos 1992).

Bighorn sheep in the northern Santa Rosa Mountains became attracted to urban sources of food and water as housing developments moved up from the valley floor invading their home ranges. Over time these bighorn became accustomed to entering the housing developments and began displaying atypical feeding and behavioral patterns. Although often thought to be the product of releasing captive-reared animals into the wild, bighorn sheep habituation to urban areas began in the 1950's around Rancho Mirage, several decades before population augmentation began in 1985 (Tevis 1959, DeForge and Scott 1982, Ostermann *et al.* 2001, V. Bleich, pers. comm.).

Bighorns frequenting housing developments experienced mortality associated with urban areas in addition to their usual natural mortality sources, such as predation and disease.

A study of cause-specific mortality conducted from 1991 to 1996 revealed that 34 percent of mortalities were directly caused by urbanization and 28 percent were caused by predation, mainly by mountain lions (DeForge and Ostermann 1998b). The remaining mortalities were due to disease (3 percent) and undetermined causes (34 percent). Of the 11 adult mortalities attributed to urbanization, 5 were due to automobile collisions, 5 were caused by exotic plant poisoning, and 1 bighorn ram was strangled in a home-made wire fence. An additional four bighorn sheep were struck but not killed by vehicles. Toxic plants causing mortality included oleander (*Nerium oleander*) and laurel cherry (*Prunus* sp.)(Bighorn Institute 1995, 1996).

Preliminary results from a study of radio-collared lambs indicate that urbanization also affected lamb survival in this ewe group. Of the nine lamb mortalities recorded in 1998 and 1999, eight occurred within 300 meters (980 feet) of the urban interface (Bighorn Institute 1999). Five of these mortalities were attributed to coyote or bobcat predation, one to mountain lion predation, and three to the direct and indirect effects of urbanization (automobile collisions and drowning in a swimming pool). Dogs also have been observed to chase bighorn ewes and their lambs near residential areas (E. Rubin, pers. comm.). Dogs likely caused the death of 2 yearlings in April 2001, and were observed attacking a young ram in December 2007 (J. DeForge, pers. comm.).

The combined effects of natural and urban-caused sources of mortality likely contributed to the decline of the bighorn sheep population in the northern Santa Rosa Mountains. In 2002, a bighorn sheep-proof fence was constructed along the urban-wildland interface to exclude bighorn sheep from urban areas. Subsequent to completion of the fence, lamb and adult survival in the northern Santa Rosa Mountains increased dramatically (Bighorn Institute 2004). Bighorn rapidly reverted to a natural diet of desert vegetation, and began expanding their movement patterns to utilize more of the available habitat. As development moves southward and continues to abut or invade bighorn sheep habitat, there is a potential for urban sources of mortality to become a factor in population dynamics. Other instances of human-caused mortality have been documented throughout the Peninsular Ranges: train collisions (Jorgensen and Turner 1973), automobile collisions (Turner 1976, Hicks 1978), and poaching (Jones *et al.* 1957, Jorgensen and Turner 1973, Cunningham 1982).

Mountain lion predation is another important threat to PBS. Though mule deer (*Odocoileus hemionus*) are the primary prey of mountain lions in North America (Anderson 1983), and the range of bighorn sheep in the Peninsular Ranges largely avoids overlap with mule deer, lion predation may threaten individual ewe groups in the Peninsular Ranges (Hayes *et al.* 2000), and has the potential to affect population recovery. From November 1992 to May 1998, Hayes *et al.* (2000) found the primary cause of death of radio-collared adult bighorn sheep between Highway 74 (in the Santa Rosa Mountains) and the U.S.-Mexico border was predation by mountain lions. Lion predation accounted for at least 69 percent of the 61 adult mortalities and occurred in each

of the ewe groups in this portion of the range (Hayes *et al.* 2000). Annually, lion predation accounted for 50 to 100 percent of the bighorn sheep mortality, and did not exhibit a decreasing or increasing trend during 1993 to 1997. Lion predation appeared to show a seasonal pattern, with the majority of incidents occurring during the cooler and wetter months of the year. A bighorn sheep's risk of predation did not appear to be related to its age. Cause specific mortality in the San Jacinto Mountains was studied from 1992 to 2004 (DeForge *et al.* 1997; Bighorn Institute 1997-2004). During this period, 22 adult bighorn mortalities were recorded. Of these 22 mortalities, 16 were native sheep and 6 were captive-reared at Bighorn Institute. A total of 50 percent of the native bighorn deaths and 33 percent of captive-reared bighorn deaths were attributed to mountain lion predation.

It is unknown how current levels of lion predation observed throughout the Peninsular Ranges compare to historic levels. Reported incidents of lion predation were not common in the past and predation was not considered to be a serious risk to bighorn sheep (Weaver and Mensch 1970, Jorgensen and Turner 1975, Cunningham 1982). It is important to note that the increase in the number of radio-collared bighorn sheep since 1993 has greatly increased the detection of such mortalities, and it is possible that other factors influencing PBS and alternate prey species have altered the proportion of mortalities caused by lion predation. Since 2000, the number of radio-collared animals has remained relatively high, but losses to lion predation have moderated in most ewe groups. High levels of mountain lion predation appear to occur in sporadic bursts in the Peninsular Ranges and other areas of western North America. Apparently, in the Peninsular Ranges only some lions drop down to lower elevations and learn to specialize on bighorn sheep. However, when such a specialist predator focuses on a particular ewe group, the losses of breeding age adults can dramatically affect population dynamics and extinction risk.

Bighorn sheep evolved in the presence of predators, and developed effective physical and behavioral mechanisms for dealing with them. Similar to other desert bighorn populations, sheep in the Peninsular Ranges have likely experienced varying levels of lion predation for thousands of years. However, when other factors, such as drought, habitat loss and fragmentation due to urbanization, diseases, and other mortality factors reduce populations to low levels and/or alter the abundance and distribution of alternate prey species, such as mule deer, then the influence of predation on population dynamics may increase (Logan and Sweanor 2001). For example, prey populations frequently respond to the presence of mountain lions by changing their distribution at a landscape scale (Hornocker 1960). Where habitats have become fragmented by human developments, bighorns may not be able to move away from areas of high predation risk. In the Peninsular Ranges coyotes (*Canis latrans*), golden eagles (*Aquila chrysaetos*) and bobcats (*Lynx rufus*) are also potential predators of bighorn sheep (Weaver and Mensch 1970, Jorgensen and Turner 1975, DeForge and Scott 1982).

The westward spread of Europeans and their domestic livestock across North America was thought to play a significant role in reducing the distribution and abundance of bighorn sheep due to the introduction of new infectious diseases (Spraker 1977, Onderka and Wishart 1984). In

particular, domestic sheep have been repeatedly implicated in *Pasteurella* pneumonia die-offs of bighorn sheep. It has been hypothesized that disease has played an important role in the population dynamics of bighorn sheep in the Peninsular Ranges (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982, Wehausen *et al.* 1987). Numerous pathogens have been isolated or detected by serologic assay from bighorn sheep in these ranges. These pathogens include bluetongue virus, contagious ecthyma virus, parainfluenza-3 virus, bovine respiratory syncytial virus (BRSV), *Anaplasma*, *Chlamydia*, *Leptospira*, *Pasteurella*, *Psoroptes*, and *Dermacentor* (DeForge *et al.*, 1982; Clark *et al.* 1985, 1993; Mazet *et al.* 1992; Elliott *et al.* 1994; Boyce 1995; Crosbie *et al.*, 1997; DeForge *et al.* 1997).

DeForge *et al.* (1982) found multiple pathogens (contagious ecthyma virus, blue tongue, *Pasteurella*, and parainfluenza virus) and low lamb recruitment in association with overall population declines. Between 1982 and 1998, 39 lambs showing signs of illness (lethargy, droopy ears, nasal discharge, and lung consolidation) were collected from the Santa Rosa (northern and southern), Jacumba, and In-Ko-Pah Mountains for disease research and rehabilitation at the Bighorn Institute (Ostermann *et al.* 2001). Additionally, DeForge *et al.* (1995) documented a population decline throughout the Santa Rosa Mountains during 1983 to 1994, resulting from inadequate recruitment. Although a cause and effect relationship between disease and population decline has not been clearly established in the Peninsular Ranges, results from several studies provide support for this hypothesis (DeForge *et al.* 1982, Clark *et al.* 1985, Wehausen *et al.* 1987, Clark *et al.* 1993, Elliot *et al.* 1994, DeForge *et al.* 1995). Analysis of spatial variation in pathogen exposure among bighorn sheep sampled between 1978 and 1990 showed that PBS populations and other populations in southern California have higher levels of pathogen exposure than other populations of bighorn sheep in the State (Elliott *et al.* 1994). The presence of feral goats in portions of the Santa Rosa Mountains until the late 1970's to early 1980's may have contributed to exposure of wild bighorn to disease during this period of population decline (D. Jessup, *in litt.* 1999). All evidence indicated that the influence of disease in the Peninsular Ranges subsided during the 1990s. Sampling and examination of bighorn sheep throughout the range during the 1990s indicated that most animals were clinically normal (Boyce 1995; DeForge *et al.* 1997; Bighorn Institute 1997, 1998, 1999).

A disease outbreak occurred in the San Jacinto and northern Santa Rosa Mountains in 2005. During July and August 2005, the Bighorn Institute recovered 7 dead adult bighorn from the San Jacinto Mountains (SJM; $n = 1$) and Santa Rosa Mountains (SRM; $n = 6$). Necropsies were performed on 6 of the animals: 4 at the California Animal Health and Food Safety (CAHFS) Laboratory in San Bernardino, and 2 in the field. The sixth animal was not radiocollared and was found several days after its death. Necropsy results confirm bronchopneumonia with a bacterial etiology to be the cause of death of 6/7 of the animals. Three of the 7 dead animals were captive-reared yearlings released during spring 2005; the remaining four were wild-born adults (2-7 years of age). As part of an investigation of the disease outbreak, results of interest included the increasing distribution of BRSV titers in the Santa Rosa Mountains between 2004 and 2005, although titers to BRSV were not present in the San Jacinto Mountains. Titers to adenovirus

were widespread, but the implications of these titers are unknown at this point. Data analysis of the disease testing results is underway.

Additional research is necessary to better understand the relationship between disease and population trajectories. Furthermore, it appears that risk of disease and parasites might differ among ewe groups based on their exposure and habitat use patterns, therefore future research should address these questions at the level of the ewe group and population. Although an epizootic does not currently appear to be occurring in the Peninsular Ranges, diseases pose a threat that could potentially occur at any time, especially if sheep experience chronic levels of disturbance or exposure to domestic sheep and goats (Geist 1971, Hamilton *et al.* 1982, Spraker *et al.* 1984, King and Workman 1986, Festa-Bianchet 1988, Desert Bighorn Council 1992). Disease problems have periodically caused die-offs of bighorn sheep herds throughout North America, and the Peninsular Ranges have not escaped this problem (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982, Wehausen *et al.* 1987). The most virulent pathogens appear to originate from domestic livestock, and are not endemic to bighorn sheep. Consequently, bighorns have not evolved with these pathogens and have little resistance compared to domestic livestock. The threat of novel strains of previously experienced pathogens and entirely new ones is always present. Potential vectors for disease transmission vary from domestic livestock and insects to other native wild ungulates. For example, if the current foot and mouth disease being experienced in Europe eventually reaches North America, then white-tailed deer and mule deer may become infected. This scenario could eventually lead to a serious problem for all North American ungulates. Chronic wasting disease is currently a problem within commercial cervid operations and currently exists within wild cervid populations in the central Rocky Mountains. This disease could potentially spread westward, and its ecosystem level effects could cause major problems for all native wild ungulates.

Numerous bighorn sheep biologists and land managers have felt compelled to write about their experiences and observations concerning the impacts of human activity on bighorn sheep. These scientists and mangers developed their opinions by and large independently over a lengthy period of time (approximately 75 years). The overwhelming majority expressed concern, recounted increases in human activity with accompanying changes in bighorn sheep behavior, and at times decreased population levels. They almost universally recommended management of human activity in bighorn sheep habitat.

The strength of inference varies within the literature, ranging from simple opinion to reporting expensive and difficult to conduct field studies in peer-reviewed scientific publications. The most compelling evidence available is the local extinctions of bighorn sheep populations living next to expanding urban areas where bighorns experienced high levels of human activity within their home ranges (Krausman *et al.* 2001). Occasional encounters with humans that result in flight or other behavioral and physiological reactions are probably well within the abilities of bighorn sheep to tolerate. Bighorn sheep have evolved to deal with occasional disruptions of their usual behavioral patterns, such as the presence of a predator. However, it appears beyond a

certain level of human activity, bighorns can simply be overwhelmed, and a number of factors interact in determining the effects of human activity on bighorn sheep.

Bighorn response to human activity is variable and depends on many factors, including but not limited to: the type and predictability of the activity, presence of domestic dogs, the animal's previous experience with humans, size or composition of the bighorn sheep group, location of bighorn sheep relative to the elevation of the activity, distance to escape terrain, and distance to the activity (Weaver 1973; McQuivey 1978; Hicks 1977, 1978; Hicks and Elder 1979; MacArthur *et al.* 1979, 1982; Wehausen 1980; Hamilton *et al.* 1982; Whitacker and Knight 1998; Papouchis *et al.* 1999). However, the history of sheep and human interactions has shown that not all bighorn sheep react in the same way to human disturbance. As in humans, there are individual differences in behavior and different groups of sheep have had different experiences with humans and exhibit different "cultures" of behavior (King and Workman 1986). Ewes with lambs typically are more sensitive to disturbance (Light and Weaver 1973, Wehausen 1980). A portion of the individuals in some populations do not react as strongly to disturbance (Hicks and Elder 1979, Leslie and Douglas 1980, Papouchis *et al.* 2001) and can habituate (the waning of a response to a repeated, neutral stimuli; Eibl-Eibelsfeldt 1970) to certain human activities, eventually losing their natural aversion to human presence. Attraction, habituation, and avoidance are behavioral events that should be placed in careful context with descriptions of the conditions under which the animal displayed a particular response. Individual animals or populations should not be labeled based on the limited responses of a few animals (Whittaker and Knight 1998).

Although the reactions of bighorn sheep to human activity are complex, for communication purposes it is useful to divide them into habitat effects and physiological effects. Habitat effects refer to the relocation of bighorn sheep away from human activity, and this can also be considered spatial displacement. The end result of moving away from humans reduces the options bighorns have for meeting their resource needs. Physiological effects refer to changes that occur within bighorn sheep when they perceive and react to danger or disturbance, such as elevated heart rate or the additional energy expended in moving away from sources of concern. In reality, habitat and physiological effects are not mutually exclusive, and both usually occur when sheep act to avoid danger or disturbance.

A variety of recreational activities such as hiking, mountain biking, hang gliding, horseback riding, camping, hunting, dog-walking, and use of aircraft and off-road-vehicles have the potential to disrupt normal bighorn sheep social behaviors and use of essential resources, and cause bighorn sheep to abandon traditional habitat (Graham 1971, Jorgensen 1974 and 1975, McQuivey 1978, MacArthur *et al.* 1979, Olech 1979, Wehausen 1979, Graham 1980, Leslie and Douglas 1980, Monson and Sumner 1980, Wilson *et al.* 1980, MacArthur *et al.* 1982, Bates and Workman 1983, Wehausen 1983, Miller and Smith 1985, Cunningham 1986, Krausman and Leopold 1986, Armentrout and Brigham 1988, Krausman *et al.* 1989, Goodson 1999, Papouchis *et al.* 1999). For example, Graham (1971) found that areas with more than 500 visitor-days of

use per year resulted in a decline of use by bighorn sheep. Jorgensen (1974) reported that PBS use of an area of Anza Borrego Desert State Park was reduced by about 50 percent on days when more recreational vehicle traffic occurred, versus periods of low or no vehicle use. Etchberger *et al.* (1989) found that habitat abandoned by bighorn sheep in the Pusch Ridge Wilderness had greater human disturbance and differences in vegetation and visibility as a result of fire suppression when compared to currently occupied habitat. In addition to recreation, construction, industrial, and agricultural activities may also disturb bighorn sheep. For example, Etchberger and Krausman (1999) observed the abandonment of lambing habitat while construction activities were ongoing within the home range of the ewe group. Ewes eventually returned to the area following cessation of construction activities.

Cases have been cited in which bighorn sheep populations did not appear to be greatly affected by human activity. However, even when bighorn sheep appear to be tolerant, continued and frequent human use of an area can cause them to eventually avoid the area, interfering with use of resources, such as water, mineral licks, lambing or feeding areas, or use of traditional movement routes (Jorgensen and Turner 1973, McQuivey 1978, Graham 1980, Leslie and Douglas 1980, DeForge and Scott 1982, Hamilton *et al.* 1982, Krausman and Leopold 1986, Rubin *et al.* 1998).

In addition to spatial displacement, human activity can result in physiological responses, such as elevated heart rate, even when no behavioral response is discernable, and the cumulative energetic cost of such responses may potentially affect the nutritional status of individuals and potentially populations (Stemp 1983, MacArthur *et al.* 1979, 1982). Responses can range from cautious curiosity to immediate flight. Cardiac and behavioral responses of bighorn sheep to an approaching human were determined to be greatest when a person was accompanied by a dog or approached from over a ridge (MacArthur *et al.* 1979, 1982). When individuals perceive danger, changes can occur within the endocrine system along with increased heart rates. These changes are actually adaptive and evolved to deal with imminent danger, such as a mountain lion attack. However, long-term chronic activation of this "flight or fight" mechanism may cause physiological reactions that impair immune function, endocrine regulation, and growth and development (Desert Bighorn Council 1991). Additionally, bighorn sheep prevented from using their normal habitat or activity patterns by frequent human disturbance or dogs may be subject to nutritional deprivation, which can also adversely affect the immune system (Festa-Bianchet 1988, Wagner and Peek 1999).

Similar to predation, prolonged drought is a natural factor that can have negative impacts on desert bighorn sheep populations, either by limiting water sources or by affecting forage quality and quantity (Rosenzweig 1968, Hansen 1980a, Monson 1980, Douglas and Leslie 1986, Wehausen *et al.* 1987). During drought years, the concentration of bighorn sheep near remaining water sources may increase competition for forage as well as water, thereby limiting population growth through density dependent regulation (Caughley 1977, Gotelli 1995). In addition,

increased density potentially renders animals more susceptible to diseases or parasites (Anderson and May 1979, May and Anderson 1979).

Domestic livestock and feral animals can reduce the availability and quality of resources (water and forage) required by bighorn sheep, and can function as potential vectors for diseases such as bluetongue virus (Mullens *et al.* 1986). In portions of the range, water has been pumped from aquifers and diverted away from springs for use by ranches and private residences, reducing and eliminating the water sources upon which bighorn sheep in the Peninsular Ranges depend (Tevis 1961; Blong 1967; Turner 1976; M. Jorgensen, pers. comm., Anza-Borrego State Park).

In the Peninsular Ranges, the presence of tamarisk (*Tamarix* sp.), also known as saltcedar, represents a serious threat to bighorn sheep. This exotic plant consumes large amounts of water and has rapid reproductive and dispersal rates (Sanchez 1975, Lovich *et al.* 1994), enabling it to out compete native plant species in canyon bottoms and washes. It has the following negative effects on bighorn sheep: (1) it reduces or eliminates the standing water on which bighorn sheep depend; (2) it out competes plant species on which bighorn sheep feed; and (3) it occurs in thick, often impenetrable stands that block access to water sources and provide cover for predators.

Fire suppression can influence the distribution and habitat use patterns of bighorn sheep by causing avoidance of areas with low visibility (Risenhoover and Bailey 1985, Wakelyn 1987, Etchberger *et al.* 1989, Etchberger *et al.* 1990, Krausman 1993, Krausman *et al.* 1996). Long-term fire suppression results in taller, denser stands of vegetation, thereby reducing openness and visibility making bighorn sheep more susceptible to predation (Sierra Nevada Bighorn Sheep Interagency Advisory Group 1997). In addition, Graf (1980) suggested that fire suppression reduces forage conditions in some bighorn sheep ranges. In the Peninsular Ranges, changes in vegetation succession are evident in some portions of bighorn sheep range, primarily in higher elevation chaparral and pinyon-juniper habitats, and have apparently decreased bighorn sheep use of certain canyons and springs (M. Jorgensen, pers. comm.).

The number of illegal immigrants entering the U.S. from Mexico continues to increase despite the efforts of the U.S. Customs and Border Protection. Some of these immigrants travel through the Peninsular Ranges and camp at water sources where they may occasionally kill and consume bighorn sheep, or displace them. Customs and Border Protection is also increasing its activity along the border and in the southern Peninsular Ranges. Consequently the level of human disturbance in the area is increasing. This scenario may cause bighorn sheep to avoid areas they once utilized and may potentially sever bighorn sheep population connectivity between the United States and Mexico.

Critical Habitat

On February 1, 2001, the Service designated approximately 844,897 acres of land in Riverside, San Diego, and Imperial counties, California, as critical habitat for PBS. This designation was

based primarily on the prior delineation of essential habitat in the Recovery Plan (Service 2000). At the time of listing and preparation of the Recovery Plan, the PBS population was near its historic low point. One of the primary goals outlined in the Recovery Plan was protecting sufficient space within essential habitat to support the population growth needed to reach the recovery criteria of maintaining subpopulations of at least 25 adult ewes within each of nine designated recovery regions, which corresponded to known and potential ewe groups, and an overall population level of 750 adults and yearlings.

On March 7, 2005, the Agua Caliente Band of Cahuilla Indians filed a complaint against the Service alleging that the economic analysis developed for our February 1, 2001, designation used a methodology similar to that ruled to be insufficient by the Tenth Circuit Court in *New Mexico Cattle Growers Association v. U. S. Fish and Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001). Other parties subsequently intervened as plaintiffs in the case. A July 31, 2006, court-approved consent decree enacted a limited partial vacatur of Tribal, mining, and Desert Riders lands (29,925 acres) and remanded the critical habitat designation back to the Service for new rulemaking. In compliance with the July 31, 2006, consent decree, the Service proposed a revision to critical habitat for PBS on October 10, 2007, including 384,410 acres of land in Riverside, San Diego, and Imperial counties, California (Service 2007a).

All areas currently designated under the February 1, 2001, final rule except for the 29,925 acres of Tribal, mining, and Desert Riders lands included in the partial vacatur, remain designated pending completion of the revised final critical habitat rule, due to the *Federal Register* by September 30, 2008.

The 2007 proposed revision to critical habitat for the PBS, if adopted, would result in a decrease of 460,487 acres from currently designated critical habitat for this subspecies. The reduction in total area from the 2001 final critical habitat designation is primarily the result of using a revised methodology to delineate critical habitat in this proposed revision. .

According to the February 1, 2001, critical habitat designation, the primary constituent elements required by PBS includes: (1) space for the normal behavior of groups and individuals; (2) protection from disturbance; (3) availability of various native desert plant communities found on different topographic slopes, aspects, and landforms, such as steep slopes, rolling foothills, alluvial fans, and canyon bottoms; (4) a range of habitats that provide forage, especially during periods of drought; (5) steep, remote habitat for lambing, rearing of young, and escape from disturbance and/or predation; (6) water sources; and (7) suitable linkages allowing individual bighorn to move freely between ewe groups and maintain connections between subpopulations. These primary constituent elements were recognized as essential to meet the biological needs of feeding, resting, reproduction and population recruitment, dispersal, connectivity, and isolation from detrimental disturbances (Service 2001).

The primary constituent elements outlined in the October 10, 2007, proposed revision to critical habitat are similar to those outlined in the 2001 designation and include the following: (1) Moderate to steep, open slopes (20 to 60 percent) and canyons, with canopy cover of 30 percent or less [below 4,600 feet (1,402 meters) elevation in the Peninsular Ranges] that provide space for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups; (2) Presence of a variety of forage plants, indicated by the presence of shrubs (e.g., *Ambrosia* spp., *Caesalpinia* spp., *Hyptis* spp., *Sphaeralcea* spp., *Simmondsia* spp.), that provide a primary food source year round, grasses (e.g., *Aristida* spp., *Bromus* spp.) and cacti (e.g., *Opuntia* spp.) that provide a source of forage in the fall, and forbs (e.g., *Plantago* spp., *Ditaxis* spp.) that provide a source of forage in the spring; (3) Steep, rugged, slopes (60 percent slope or greater) [below 4,600 feet (1,402 meters) elevation in the Peninsular Ranges] that provide secluded space for lambing as well as terrain for predator evasion; (4) Alluvial fans, washes, and valley bottoms that provide important foraging areas where nutritious and digestible plants can be more readily found during times of drought and lactation and that provide and maintain habitat connectivity by serving as travel routes between and within ewe groups, adjacent mountain ranges, and important resources areas, such as foraging areas and escape terrain; and (5) Intermittent and permanent water sources that are available during extended dry periods and that provide relatively nutritious plants and drinking water (Service 2007a).

Synopsis of Status

Since listing in 1998, biennial range-wide surveys have estimated that the PBS population has increased from about 280 adult and yearling sheep in 1996 to over 700 sheep in 2006 (Torres 2007). Over this time frame, mountain lion predation has become less pronounced in the Anza-Borrego Desert State Park area compared to predation rates observed in the mid-1990s (Hayes *et al.* 2000). The apparent absence of major disease outbreaks in the same area has benefited recruitment of lambs into the breeding population. This combination of improved adult survivorship and lamb recruitment appear to be the primary factors contributing to population expansion in the southern ranges. Please refer to the "Environmental Baseline" section below for a summary of the status of the ewe groups in the project area.

ENVIRONMENTAL BASELINE

Status of the Species in the Action Area

As discussed above in the "Status of the Species" section, PBS occupy habitat along the Peninsular Ranges from the San Jacinto Mountains in southern California, south to into Baja California, Mexico. Though formerly thought to be extirpated, recent scat and visual observations by a variety of sources indicate the Jacumba Mountains are currently inhabited by PBS, most likely individuals of the Carrizo Canyon ewe group or from the closest northern Baja California ewe group.

Four of the eight recognized ewe groups (subpopulations) occur within the Planning Area: Carrizo Canyon, Vallecito Mountains, South San Ysidro Mountains, and North San Ysidro Mountains (Service 1999b). The Carrizo Canyon and Vallecito Mountain subpopulations occur primarily on BLM-administered land, while the North and South San Ysidro Mountain subpopulations occur primarily within Anza-Borrego Desert State Park.

Of the 844,897 acres of critical habitat designated in 2001 for PBS, approximately 53,000 acres (6.3 percent of the total) overlap with BLM-administered lands in the Planning Area. Of the 384,410 acres of the 2007 proposed revised critical habitat (not including acres proposed for exclusion), approximately 12,000 acres (3.3 percent) overlap with BLM-administered lands in the Planning Area. Most of the overlap is within the Carrizo Gorge Wilderness Area. Much of the Carrizo Gorge Wilderness Area also overlaps with the In-Ko-Pah Mountains ACEC. Thus, BLM's bighorn sheep management responsibilities in the Planning Area pertain mainly to the Carrizo Canyon and Vallecito Mountain subpopulations and that component of critical habitat within the Carrizo Gorge Wilderness Area. Population estimates in 2006 for the four ewe groups are as follows: North San Ysidro Mountains, 79; South San Ysidro Mountains, 38; Vallecito and Fish Creek Mountains, 77; and Carrizo Canyon, 145 (Torres 2007). These estimates have risen substantially over the last decade, consistent with the recent population expansion of most ewe groups in the US. Improved recruitment rates, coincident with declining predation rates and favorable weather conditions, are thought to the primary contributing factors to recent population trends.

Existing and proposed critical habitat in this unit contains features that are essential to the conservation of the PBS, including a range of vegetation types, foraging and watering areas and alluvial fans, and steep to very steep, rocky terrain with elevations and slopes that provide for sheltering, lambing, mating, movement among and between ewe groups, and predator evasion, all recognized primary constituent elements (PCEs) identified in the 2001 final rule and 2007 revised proposed rule. These PCEs may require special management considerations or protection to decrease the direct and indirect effects of human disturbance, primarily due to recreational and other human activities.

Factors Affecting the Species' Environment within the Action Area

Factors that may be limiting the distribution and abundance of PBS on public lands in the Planning Area are not well understood but are probably related to many of the influences commonly thought to affect sheep throughout their range, such as density-dependent sources of mortality, including disease and predation, as well as annual variation in precipitation, and various types of human-related disturbance. Though unstudied in the recent past, the PBS subpopulation between Interstate 8 and the international border is probably affected by unauthorized immigrant traffic and border enforcement activities.

EFFECTS OF THE ACTION

This biological opinion analyzes the BLM's land use plan for the ESDRMP. Because a reasonably similar plan has been in existence since 1981, past implementation provides a reasonable indication of likely effects in the future.

Though this biological opinion addresses the effects of the Proposed Action on known and potentially occupied habitat for LBV, Quino, and PBS, survey efforts throughout the Planning Area have not been sufficient to determine the actual extent of use across the area. As reflected in the Biological Assessment (RECON 2007), no systematic surveys have been conducted across BLM lands on historical and potentially suitable habitats throughout the Planning Area. Given limited survey effort, little is known of the current status of breeding populations or migratory habitats. This lack of knowledge precludes a comprehensive analysis of effects of the action. Consequently, extant breeding populations that are currently unknown may be adversely affected by implementation of the proposed ESDRMP. Such populations may be in historically known or previously unsurveyed habitats. Similarly, new populations that establish in the future could be adversely affected unless periodic surveys are conducted to inform management decisions. Therefore, the effects of the action on any currently unknown or potential future breeding populations can not be determined in this opinion; accordingly, reestablishment of populations in historic breeding areas, or the discovery of previously unknown breeding populations, would constitute new information that could require reinitiation of consultation as per 50 CFR 402.16.

Land use decisions for most of the resource areas discussed below are at the resource management plan level rather than a project-specific level and are not expected to have an effect on listed species within the Planning Area until/unless specific projects are proposed and permitted in the future under separate discretionary approval. Nonetheless, the generic effects of future projects potentially allowed under each of these resource areas are analyzed for consistency under the section 7(a)(2) standard. However, the designation of routes of travel and continued authorization of select casual uses (e.g., noncommercial recreational activities) under the proposed plan represent project-specific activities that are not deferred to future consultation and are analyzed in this opinion. The effects of all resource area land use decisions on LVB, Quino and its 2002 designated critical habitat, and PBS and its 2001 designated critical habitat and 2007 proposed revised critical habitat are addressed in the analysis below (see "Description of the Proposed Action" section above for more detailed descriptions of actions proposed under each resource area). There is no designated critical habitat for LBV in the Planning Area and while 2008 revised proposed critical habitat for Quino occurs within the Planning Area, there is no overlap with BLM-administered lands.

Rangeland Health Standards Management: The ESDRMP proposes to continue to use existing National Fallback Standards for grazing allotments.

General Species Effects: While the ESDRMP proposes to continue to use existing National Fallback Standards for grazing allotments, public lands within the Planning Area would no longer be subject to grazing. Thus, with the proposed cessation of grazing, we do not anticipate adverse effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats under the proposed plan.

Air Resources Management: The ESDRMP proposes to maintain or improve air quality as established by the National Ambient Air Quality Standards and California Ambient Air Quality Standards through cooperative management of emissions with industry, the State of California, and Federal agencies.

General Species Effects: BLM proposes to comply with the National Ambient Air Quality Standards and California Ambient Air Quality Standards for proposed actions that would contribute to particulate matter emissions in the air as a result of actions taken in this ESDRMP. With proper implementation of these standards, we do not anticipate adverse effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats under the proposed plan.

Soil Resources Management: The ESDRMP proposes to take steps to control erosion on authorized vehicle routes, burned areas, riparian areas, and grazed areas by allowing plant growth to resume in these areas after catastrophic events such as fires and floods.

General Species Effects: To minimize effects, BLM proposes to employ Best Management Practices (BMPs) including but not limited to, revegetation, rocking, and creating water turn-outs along roads to control erosion. BLM proposes to minimize surface disturbance from authorized activities and post-activity and restore surfaces to a pre-disturbance or stable condition. Construction activities would be restricted based on risk of erosion or level of moisture to avoid soil compaction. With proper implementation of the BMPs, we do not anticipate adverse effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats at the programmatic level.

Water Resources Management: The ESDRMP proposes to maintain existing proper functioning of watersheds and prevent or reduce water quality degradation by applying BMPs or other specific mitigation measures, when applicable.

General Species Effects: To minimize effects, BLM proposes to apply BMPs and adhere to State and Federal standards for water quality. With proper implementation of the BMPs, the State and Federal standards for water quality, and maintenance of properly functioning watersheds, we do not anticipate adverse effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats at the programmatic level.

Vegetation Resource Management: The ESDRMP strives to maintain the health of desired vegetation communities thru actions including but are not limited to avoiding adverse impacts, restoring surface disturbance, and requiring minimum impact approaches. Other actions include using native plant materials for landscaping, treating and/or removal of non-native invasive plant species, protecting desired plant communities, implementing protection, restoration, and mitigation measures where necessary, and banning wood cutting in the Planning Area.

General Species Effects: Vegetative management activities such as mechanical and/or herbicidal vegetation removal could result in habitat degradation by altering vegetative composition and promoting competition with non-native invasive plant species. The use of prescribed fire for vegetation management could result in habitat degradation as well (see "Wildland Fire Management" section below for a detailed discussion of the potential effects of prescribed fire). The historic establishment of some invasive species, like cheatgrass and other brome grasses, is thought to have changed the fire regimes in some habitats by providing a ground fuel that carries fire more frequently and earlier in the season than probably occurred naturally. Repeated fires can interfere with the survival success of native species (Stephenson and Calcarone 1999). Vegetation removal may also render habitats unusable for foraging, breeding, and cover by native wildlife species while native vegetation regenerates.

Least Bell's Vireo: The ESDRMP proposes to conduct vegetation management activities to improve wildlife habitat, including non-native vegetation removal (e.g., tamarisk), in occupied and potential riparian habitat. The removal of tamarisk may result in a reduction of suitable nesting habitat (habitat structure) for the LBV. Available nesting habitat would likely be reduced and there may be an increase in brown-headed cowbird nest parasitism and resource competition.

Quino Checkerspot Butterfly: The ESDRMP proposes to conduct vegetation management activities, including non-native vegetation removal (e.g., tamarisk), in order to improve wildlife habitat in occupied and potential habitat and designated critical habitat. In addition to the general effects of vegetative management activities outlined above, potential effects to Quino also include the unintentional conversion from native vegetation to non-native annual grassland resulting in the potential displacement of larval host plants and replacement of nectar plants, including dominant shrubs. The removal of the non-native invasive plant species may result in impacts to Quino through direct crushing or trampling of larvae or adults during removal activities. Removal activities may also result in incidental destruction or damage to host or nectar sources or temporary alterations to soil characteristics due to prescribed fire activities.

Peninsular Bighorn Sheep: The ESDMRP proposes to conduct vegetation management activities, including non-native vegetation removal (e.g., tamarisk), in occupied habitat, including revised proposed and designated critical habitat. The removal of the non-native invasive plant species from springs and seeps may result in impacts to bighorn sheep through increased human disturbance, causing individuals to temporarily abandon these water sources.

Avoidance and Minimization Measures: Impacts to listed species from vegetation management activities would be minimized through the following measures included in the proposed plan: (1) adverse impacts to special status species would be avoided; (2) surface disturbance (e.g., ROW construction or illegal trespass) would be restored with rehabilitation measures including invasive plant removal; (3) removal of tamarisk and other non-native invasive plant species would be conducted using mechanical and herbicide applications in accordance with existing BLM approved protocols previously approved by the Service, BLM policy on minimum tools in Wilderness, and other applicable final policies; and (4) the introduction of non-native plants would be limited through an education program.

Impacts to LBV from vegetation management would be further minimized through implementation of the following measures included in the proposed plan: (1) commercial and non-commercial surface-disturbing activities within riparian areas would be avoided; (2) revegetation projects that promote proper functioning condition of riparian areas and recruitment of oaks in adjacent uplands; (3) rehabilitation of riparian areas and habitats that support Special Status Species would be priority; (4) mechanical and herbicide application for non-native invasive plant removal would be conducted outside of the breeding season (mid-March thru mid-September); (5) tamarisk removal would be staggered over a time period to allow for nesting to continue in the same area where birds once nested while native vegetation is given the opportunity to grow in place of the tamarisk; and (6) cowbird trapping by adjacent land mangers or other agencies would be authorized by BLM on a case-by-case basis. Also, site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. While LBV may be impacted by vegetation management activities in the short-term, the species is likely to benefit from these activities designed to improve habitat in the long-term. With proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP, we do not anticipate significant adverse effects to LBV due to vegetation management at the programmatic level.

Impacts to Quino and its 2002 designated critical habitat due to vegetation management activities would be further minimized through implementation of the following measures included in the proposed plan: (1) rehabilitation of habitats that support Special Status Species would be priority, and (2) non-native invasive plant species would be removed through mechanical and/or herbicidal removal and prescribed fire to restore degraded native plant communities and to prevent non-native species infestations following fire events. Also, site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. While Quino may be impacted by vegetation management activities in the short-term, the species is likely to benefit from these activities since they would be designed to improve habitat in the long-term. With proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional

measures outlined in the proposed ESDRMP that benefit the subspecies and its habitat through rehabilitation and management of its required primary constituent elements, we do not anticipate significant adverse effects to Quino or the function and conservation role of its 2002 designated critical habitat due to vegetation management at the programmatic level.

Impacts to bighorn sheep and its 2001 designated and 2007 revised proposed critical habitat due to vegetation management activities would be further minimized through implementation of the following measures included in the proposed plan: (1) rehabilitation of desert fan palm oases, desert wash, and habitats that support Special Status Species would be priority; (2) the use of domestic sheep and goat grazing for vegetation management would be prohibited within nine miles of bighorn sheep designated critical habitat to avoid disease transmission; and (3) use of local native plants would be required for all restoration and landscaping projects to prevent sickness or death of bighorn sheep from toxic landscape plants. Also, site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. While PBS and its 2001 designated and 2007 revised proposed critical habitat may be impacted by vegetation management activities in the short-term, the species is likely to benefit from these activities deigned to improve habitat in the long-term. With proper implementation of the avoidance and minimization measures outlined in this section and additional measures outlined in the proposed ESDRMP that benefit the bighorn sheep and its habitat through rehabilitation and management of its required primary constituent elements, we do not anticipate significant adverse effects to bighorn sheep or the function and conservation role its 2001 designated and 2007 revised proposed critical habitat due to vegetation management at the programmatic level.

Wildlife Resource Management: The ESDRMP proposes to promote and maintain healthy habitats and associated wildlife assemblages thru actions including but are not limited to authorizing reintroductions, transplants, and supplemental stockings in current or historic ranges in cooperation with the California Department of Fish and Game (CDFG) and/or the Service, managing non-native invasive and pest species, prohibiting livestock grazing when native wildlife forage or water sources would be adversely affected, designing and implementing vegetation, fire and fuels, and watershed resource management-related project that would promote enhancement of existing habitat conditions or restoration of degraded habitat conditions for native wildlife species, and pursuing land acquisition option to consolidate important wildlife habitats.

General Species Effects: A discussion of the potential impacts to LBV, Quino, and bighorn sheep and their revised proposed and/or designated critical habitat associated with Wildlife Resource Management activities is encompassed in the discussions of effects associated with other resource management areas provided in this "Effects of the Action" section.

Special Status Species Management: The ESDRMP proposes to maintain, enhance, and restore terrestrial and riparian habitats for the survival and recovery of special status species thru actions including but are not limited to maintaining or restoring appropriate amount, distribution, and characteristics of life-stage habitats, reducing or eradicating non-native plant species in occupied and potential special status plant habitat, authorizing reintroductions, transplants, and supplemental stockings in current or historic ranges in cooperation with CDFG and/or the Service, and no permitting activities or projects on BLM lands that would jeopardize the continued existence of federally-listed plant or animal or species proposed for listing.

General Species Effects: A discussion of the potential impacts to LBV, Quino, and bighorn sheep and their revised proposed and/or designated critical habitat associated with Special Status Species Management activities is encompassed in the discussions of effects associated with other resource management areas provided in this "Effects of the Action" section.

Cultural Resource Management: The ESDRMP proposes to identify, preserve, and protect significant cultural resources, districts and landscapes and ensure that they are available for appropriate uses by present and future generations.

General Species Effects: To minimize effects, proposed activities would not be approved until compliance with applicable State and Federal laws has been completed and documented. As a result, we do not anticipate significant effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats at the programmatic level.

Paleontological Resource Management: Under the ESDRMP, all lands in the Planning Area are classified based on their potential to contain fossils. The majority of lands within the Planning Area are classified as being low (Class 1) and moderate (Class 2) sensitivity, indicating areas not likely to contain recognizable fossil remains or not likely to contain fossils at all, respectively. Only a small area is classified as being moderate sensitivity (Class 3) and having some potential to contain fossil remains. Class 3 areas require sufficient mitigation to determine whether significant resources occur in the proposed project area.

General Species Effects: Based on compliance with existing regulations and policies and since the majority of the Planning Area is classified as having low to moderate potential for paleontological resources, we do not anticipate adverse effects to listed species or the function and conservation role of revised proposed and/or designated critical habitats at the programmatic level.

Visual Resource Management (VRM): Under the ESDRMP, WAs and WSAs are classified as Class I indicating areas in which the level of change to the landscape should be very low and must not attract attention in order to preserve the existing character of the landscape. ACECs are classified as Class II indicating areas in which the level of change to the landscape should be low and to retain the existing character of the landscape. The majority (about 87 percent; 89,941

acres) of the Planning Area is classified as Class I or II. Less than 1 percent (693 acres) of the Planning Area is classified as Class III, indicating areas in which the level of change should be moderate to partially retain the existing character of the landscape and about 12 percent (12,236 acres) is classified as Class IV, indicating areas in which the level of change to the landscape can be high to provide for management activities that require major modification of the existing character of the landscape. While WAs and WSAs (Class I) and ACECs (Class II) are excluded, land use authorizations including renewable energy generation would be allowed in Class II areas outside of ACECs and in Class III and IV areas. See "Lands and Realty Management" section below for a discussion of land use authorizations, including renewable energy generation.

General Species Effects: Given the objective to preserve the existing character of the landscape, the classification of lands as VRM Class I and Class II in WAs, WSAs, and ACECs would provide additional protections for listed species and revised proposed and/or designated critical habitats. However, land use authorizations, including renewable energy generation, on lands classified as VRM Class II outside of WAs, WSAs, and ACECs, Classes III and IV may impact listed species. Please refer to the "Lands and Reality Management" section below for a detailed discussion of potential impacts to listed species associated with land use authorizations, including renewable energy generation.

Recreation Resource Management: Under the ESDRMP, three Special Recreation Management Areas (SRMAs) would be designated: Boulevard/Jacumba Destination SRMA (42,673 acres), Julian Destination SRMA (15,170 acres), and Sawtooth Destination SRMA (45,026.). These SRMAs would be managed to promote continued use of lands outside of WAs and WSAs for recreational activities including, but not limited to, camping, OHV-use, equestrian use, target shooting, hunting, mountain biking, hiking and backpacking, wildflower and wildlife viewing, birdwatching, rock climbing, photography, astronomy, rock hounding, and pleasure touring.

General Species Effects: Recreational activities could directly impact listed species through trampling or crushing of sensitive habitat and individuals, particularly species with life stages that are small and immobile. Effects of recreational activities also include the disturbance of individuals and habitat; reduced reproductive success due to chronic disturbance during the breeding season; habitat abandonment due to prolonged disturbance; disturbance, injury, or death of individuals as a result of domestic dogs; and habitat alteration associated with ongoing surface disturbance. Recreation areas may also facilitate the establishment of non-native invasive plant species via ground disturbance and transfer of seeds.

Least Bell's Vireo: The ESDRMP proposes to designate occupied habitat adjacent to San Felipe, Vallecito, and Willow creeks and potential habitat in the Planning Area within destination SRMAs, which would be managed as regional or national destinations through collaborative partnerships. In addition to the general effects of recreation outlined above, potential effects to LBV also include alteration of riparian vegetation, destruction of nests, and disturbance to individuals.

Quino Checkerspot Butterfly: The ESDRMP proposes to designate occupied and potential habitat and 2002 designated critical habitat within destination SRMAs, which would be managed as regional or national destinations through collaborative partnerships. In addition to the general effects of recreation outlined above, potential effects to Quino also include crushing of host plants by vehicle or foot traffic that occur near recreation sites, which could result in the death of Quino larvae or eggs if they had colonized those plants.

Peninsular Bighorn Sheep: The ESDRMP proposes to designate areas of 2001 designated critical habitat and 2007 revised proposed critical habitat within destination SRMAs, which would be managed as regional or national destinations through collaborative partnerships. In addition to the general effects of recreation outlined above, potential effects to bighorn sheep include reduced reproductive success due to chronic disturbance during the breeding season and habitat abandonment due to prolonged disturbance.

Avoidance and Minimization Measures: Impacts to the LBV due to recreational management activities would be minimized for the following reasons: (1) the majority of occupied habitat would be within a special designation area (WA or WSA), limiting the extent of recreational opportunities allowed in these areas (see "Special Designation Management" section below for a detailed discussion of effects of recreational activities allowed in these areas), and (2) while in an area designated for limited OHV-use, there are no existing or proposed routes of travel in occupied habitat along San Felipe Creek and therefore, no legal motorized access to that area. Despite these measures, individual LBV could be negatively impacted by ongoing recreation in potential habitat through alteration of riparian vegetation, destruction of nests, and disturbance to individuals associated with general human presence. However, the relatively low numbers of LBVs known within the Planning Area, coupled with the relative lack of vehicular access, and the presence of a relatively limited non-motorized trail network, suggests that few individual LBV would be impacted by recreational activities. Also, as discussed in the "Vegetation Resources Management" section above, the proposed ESDRMP prioritizes the restoration and protection of riparian habitat within the Planning Area. As a result of these factors, and with proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP, we do not anticipate significant adverse effects to LBV due to recreation management at the programmatic level.

Impacts to Quino and its 2002 designated critical habitat due to recreational activities would be minimized for the following reasons: (1) the majority of potential habitat would be within special designation areas (WA, WSA, or ACEC), limiting the extent of recreational opportunities allowed in these areas (see "Special Designation Management" section below for a detailed discussion of effects of recreational activities allowed in these areas), and (2) while not in a special designation area and in an area designated for limited OHV-use, there are no existing or proposed routes of travel in 2002 designated critical habitat, and therefore, no legal motorized access. Despite these measures, individual Quino checkerspot butterflies could be negatively

impacted by ongoing recreation management through crushing of host plants by vehicle or foot traffic that occur near recreation sites, which could result in the death of Quino larvae or eggs if they had colonized those plants. However, the planning area has a relative lack of vehicular access, and the presence of a relatively limited non-motorized trail network. Based on these factors, the overall human visitation rates are likely limited to roughly current levels, which have not been postulated to be sufficiently intrusive to limit Quino population growth. As a result of this and with proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit the subspecies and its habitat through management of its required primary constituent elements, we do not anticipate significant adverse effects to Quino or the function and conservation role of its 2002 designated critical habitat due to recreation management at the programmatic level.

Impacts to PBS and its 2001 designated and 2007 revised proposed critical habitat due to recreational activities would be minimized for the following reasons: (1) the majority of the 2001 designated critical habitat and all of the 2007 revised proposed critical habitat on BLM-administered lands in the Planning Area would be within special designation areas (WA, WSA, or ACEC), limiting the extent of recreational opportunities allowed in these areas (see "Special Designation Management" section below for a detailed discussion of effects of recreational activities allowed in these areas); (2) the Table Mountain and In-Ko-Pah ACEC boundaries would be expanded to include critical habitat designated in 2001, providing additional habitat protections; (3) motorized vehicle use in sensitive areas, such as critical habitat or recovery areas or areas used for lambing, would be limited through incorporation of seasonal closure of designated routes, as appropriate; (4) surface disturbance from discretionary activities and illegal trespass would be restored; and (5) the use of domestic sheep and goat grazing for vegetation management or as pack animals would be prohibited within nine miles of bighorn sheep designated critical habitat to avoid disease transmission. Despite these measures, PBS could be negatively impacted by on-going recreation management activities due to their general sensitivity to human-related disturbance resulting in chronic disturbance throughout the year. However, there is a relatively low level of vehicular access and a relatively limited non-motorized trail network in the Planning Area. Based on these factors, the overall human visitation rates are likely limited to roughly current levels, which have not been postulated to be sufficiently intrusive to limit bighorn sheep population growth. As a result of this and with proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit the bighorn sheep and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects to PBS or the function and conservation role of its 2001 designated or 2007 revised proposed critical habitat due to recreation management at the programmatic level.

Lands and Realty Management: The Land and Realty Management Program proposed in the ESDRMP consists of four parts that include: land tenure, land use authorization (including renewable energy), withdrawals, and utility corridors.

Land tenure: Land tenure focuses on disposing of and acquiring lands or interests in lands. The ESDRMP identifies 490 acres of land available for disposal within the Planning Area. Disposal of these lands would be considered on a case-by-case basis and would be accomplished by the most appropriate authority. The acquisition of specific lands or interests in lands is not proposed in the ESDRMP; however, BLM will consider acquisition of lands from willing sellers or donors.

Land use authorization: Land use authorization focuses on public requests for permits, leases, and easements for community expansion needs (e.g., airports, parks, hospitals, and community centers), ROWs, and communications facilities. Within the Planning Area, there are two existing communication sites (Table Mountain and Banner Grade). No specific areas for community expansion projects or communications sites were identified in the proposed plan. Land use authorization also includes rights-of-way for production and distribution of renewable energy. The ESDRMP proposes to make 34,259 acres of land outside of WAs, WSAs, ACECs, and designated critical habitat available for wind and/or geothermal energy development.

Withdrawals: A withdrawal removes an area of Federal land from settlement, sale, location, or entry under some or all of the general land laws to maintain other public values in the area or reserving the area for a particular public purpose or program. Basically, any application that could lead to the lands leaving Federal control or ownership would be rejected based on the withdrawal order. The ESDRMP proposes to withdraw the Table Mountain ACEC and those portions of the In-Ko-Pah ACEC that are outside of designated WAs from surface entry (e.g., settlement, sale, and exchange), mining (locatable minerals), and mineral leasing.

Utility corridor: The ESDRMP proposes to locate all new utility ROWs of the following types within an existing 1.5 mile long by 1.5 mile wide designated corridor along the southern boundary of the Interstate 8 ROW: new electrical transmission towers and cables of 161 kV or above; all pipelines with diameters greater than 12 inches; coaxial cables for interstate communications; and major aqueducts or canals for interbasin transfers of water.

General Species Effects: In general, the acquisition of lands or interests in lands would positively affect the LBV, Quino, and the PBS since these areas would then be managed under the proposed plan, which prioritizes conservation of sensitive species and habitat. The withdrawal of Table Mountain ACEC and those portions of the In-Ko-Pah ACEC that are outside of designated WAs would also positively affect these species by adding additional prohibitions against certain activities currently allowed on those lands. However, the disposal of lands that provide important habitat function and value could negatively affect the species by decreasing the recovery potential for listed species. The construction, operation, and maintenance of community expansion projects, renewable energy facilities, communications facilities, and new and expanded facilities within existing utility corridors would negatively affect listed species, if present, by eliminating habitat, causing death or injury from crushing and burying of individuals.

Least Bell's Vireo: None of the lands identified in the ESDRMP for disposal, or designated utility corridors are known to be occupied by LBV. However, these areas may contain suitable habitat for the species that would be determined by parcel-specific surveys prior to any BLM realty actions. Of the areas known to be occupied by the species, those along Vallecito Creek not within a special designation area are identified as available for wind and geothermal energy development. In addition to the general effects outlined above, potential effects to LBV include collisions with communications or renewable energy facilities, particularly wind turbines, during dispersal or migration between occupied areas or within potentially suitable habitat.

Quino Checkerspot Butterfly: None of the lands identified in the ESDRMP for disposal, designated utility corridors, or wind and geothermal energy development are within designated critical habitat for this species, nor are these lands known to be occupied by this species. However, the majority of these lands are within the Service's recommended survey area for Quino, indicating areas of known and/or potential occupancy. In addition to the general effects outlined above, potential effects to Quino include crushing of host or nectar plants during construction, operation, and maintenance of community expansion projects and communications or renewable energy facilities, which could result in the death of Quino larvae or eggs if they had colonized those plants, and collisions with wind turbines during dispersal. However, the risk of collisions with wind turbines is likely very low because Quino typically fly near ground level.

Peninsular Bighorn Sheep: None of the lands identified in the ESDRMP for disposal, designated utility corridors, or wind and geothermal energy development are within revised proposed or designated critical habitat. However, in addition to the general effects outlined above, bighorn sheep could be impacted by construction, operation, and maintenance of community expansion projects and communications facilities due to abandonment of otherwise suitable habitat due to activities, especially during the lambing season (January 1 - June 30). In addition, communications facilities are typically situated on prominent locations where access routes place disturbance at higher elevations than surrounding terrain, and this may discourage bighorn sheep from using lower areas within sight of the facility. Consequently, bighorns may select less than optimum habitat with greater predation risk, less access to water, and fewer opportunities to acquire adequate nutrition. As a result, mortality rates may be higher, and body condition may decline, thus lowering the reproductive potential of bighorn ewes. Furthermore, the total amount of available habitat is incrementally reduced by communications facilities, utilities, and associated access roads.

Avoidance and Minimization Measures: Impacts to the LBV due to land disposal, construction, operation, and maintenance of community expansion projects, communications and renewable energy facilities, and new and expanded facilities within existing utility corridors would be minimized for the following reasons: (1) lands occupied by listed species would not have potential for disposal unless another entity is better qualified to protect the sensitive resources or with concurrence of the withdrawing agency and (2) the majority of occupied habitat would be within special designation areas (WA or WSA), either withdrawn from all forms of land entry or

excluded from all types of land use authorizations including community expansion projects and communications or renewable energy facilities. Despite these measures, LBV known to occur in areas along Vallecito Creek could be negatively impacted due to collisions with communications or renewable energy facilities, particularly wind turbines, during dispersal or migration between occupied areas or within potentially suitable habitat. However, since site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service, potential impacts associated with wind and geothermal energy development in occupied habitat will be determined during a separate consultation. Also, the relatively low numbers of LBVs known within the Planning Area suggest that few individuals would be at risk of collisions, and that the probability of collisions would be very low. Therefore, with proper implementation of the avoidance and conservation/additional measures outlined in the proposed ESDRMP, we do not anticipate significant adverse effects to LBV due to lands and realty management activities at the programmatic level.

Impacts to Quino and its 2002 designated critical habitat due to land disposal, construction, operation, and maintenance of community expansion projects, communications facilities, and renewable energy facilities, and new and expanded facilities within existing utility corridors would be minimized for the following reasons: (1) lands occupied by listed species would not have potential for disposal unless another entity is better qualified to protect the sensitive resources or with concurrence of the withdrawing agency; (2) the majority of potential habitat would be within special designation areas (WA, WSA, and ACEC) would be withdrawn from all forms of land entry or excluded from all types of land use authorizations including community expansion projects and communications sites; (3) 2002 designated critical habitat would be withdrawn from all forms of land entry or excluded from all types of land use authorizations including community expansion projects and communications or renewable energy facilities; and (4) site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. Despite these measures, Quino could be negatively impacted by disposal, designated utility corridors, or wind and geothermal energy development since the areas identified for these uses is within potential habitat. Quino could also be negatively impacted by construction, operation, and maintenance of community expansion projects and communication facilities if these activities occur in potential habitat. However, with proper implementation of the avoidance and conservation/additional measures outlined in the proposed ESDRMP that benefit the subspecies and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects to Quino or the function and conservation role of its 2002 designated critical habitat due to these activities at the programmatic level.

Impacts to PBS and its 2001 designated or 2007 revised proposed critical habitat due to land disposal, construction, operation, and maintenance of community expansion projects, communications and renewable energy facilities, and new and expanded facilities within existing utility corridors would be minimized for the following reasons: (1) lands occupied by listed species would not have potential for disposal unless another entity is better qualified to protect the sensitive resources or with concurrence of the withdrawing agency; (2) the majority of the 2001 designated critical habitat and all of the 2007 revised proposed critical habitat on BLM-administered lands within the Planning Area would be within special designation areas (WA, WSA, or ACEC), withdrawn from all forms of land entry or excluded from all types of land use authorizations, including community expansion projects, designated utility corridors, and communications and renewable energy facilities; and (3) site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. With proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit the bighorn sheep and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects at the programmatic level to PBS or the function and conservation role of its 2001 designated or 2007 revised proposed critical habitat due to land disposal, construction, operation, and maintenance of community expansion projects, communication sites, and renewable energy facilities, and new and expanded facilities within existing utility corridors.

Mineral Resource Management: The ESDRMP proposes to manage mineral resources in accordance with BLM's National Mineral Policy, the Energy Policy Act, and the National Energy Policy.

Leasable and salable minerals: Under the Proposed Action, all designated critical habitat, WSAs, and ACECs would be closed to all leasable and salable mineral extraction. Also, WAs would be withdrawn from all forms of entry subject to valid existing rights.

Locatable minerals: Management would involve the withdrawal of the In-Ko-Pah and Table Mountain ACEC from mineral entry. WAs would be withdrawn from all forms of entry subject to valid existing rights and mineral entry in WSAs would continue to be subject to Interim Management Policy. Designated critical habitats would be available for mineral entry under the Mining Law, subject to section 7 and section 106 consultations.

General Species Effects: Direct impacts from mining and prospecting may occur as claimants access their claims as well as through ground-disturbing activities (*e.g.*, drilling, blasting, and digging, sluicing, panning, storing and piling soil) or indirectly as hydrological features of the landscape are changed. Impacts from mining activities include direct removal of plants and seeds in the soils, trampling, destruction of habitat, changes in hydrology, burial under

overburden and spoils, losses of habitat as access roads are developed, and interference with pollination and seed dispersal mechanisms.

Least Bell's Vireo: In addition to the general effects of mineral resource management activities outlined above, potential effects to LBV include physical destruction of the substrate and vegetation along stream banks. However, impacts to stream banks due to mineral extraction are not authorized.

Quino Checkerspot Butterfly: In addition to the general effects of mineral resource management activities outlined above, potential effects to Quino include trampling of adults or larvae and destruction of host plants and nectar sources.

Peninsular Bighorn Sheep: In addition to the general effects of mineral resource management activities outlined above, potential effects to PBS include reduced reproductive success due to chronic disturbance during the breeding season and habitat abandonment due to prolonged disturbance.

Avoidance and Minimization Measures: Impacts to the LBV due to mineral resource management activities would be minimized for the following reasons: (1) occupied habitat along San Felipe Creek adjacent to the San Felipe WSA and along the Vallecito and Willow creeks in the Sawtooth and Carrizo Gorge WA would be closed to all leasable and salable mineral extraction, and (2) while occupied habitat along Vallecito Creek outside of the Sawtooth WA has no special designation, it is within an area containing no existing or proposed routes of travel, making this area closed to legal motorized access, and therefore, less likely to be used for significant mineral extraction. Also, while locatable mineral extraction may occur in special designation areas (WA and WSA), site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. With proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP, we do not anticipate significant adverse effects to LBV due to mineral resource management activities at the programmatic level.

Impacts to Quino and its 2002 designated critical habitat due to mineral resource management activities would be minimized for the following reasons: (1) the majority of potential habitat in the Planning Area would be within special designation areas (WA, WSA, or ACEC) that would be withdrawn from or closed to leasable and salable mineral extraction, and (2) while not in a special designation area, there are no existing or proposed routes of travel in 2002 designated critical habitat and therefore, no legal motorized access to that area. Also, while locatable mineral extraction may occur in special designation areas (WA, WSA, and ACEC), site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. With proper implementation of the avoidance and

minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit the subspecies and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects to Quino or the function and conservation role of its 2002 designated critical habitat due to mineral resource management activities at the programmatic level.

Impacts to PBS and its 2001 designated or 2007 revised proposed critical habitat due to mineral resource management activities would be minimized for the following reasons: (1) the majority of the 2001 critical habitat and all of the 2007 revised proposed critical habitat on BLM-administered lands within the Planning Area would be within special designation areas (WA, WSA, or ACEC) that would be withdrawn from or closed to leasable and salable mineral extraction; (2) the Table Mountain and In-Ko-Pah ACEC boundaries would be expanded to include 2001 designated critical habitat, increasing the amount of habitat closed to leasable and salable mineral extraction; (3) while locatable mineral extraction may occur in special designation areas (WA, WSA, ACEC, and designated critical habitat), site-specific habitat evaluations and species-specific biological surveys would be conducted prior to initiation of ground-disturbing activities to determine the status of listed species for project proposals that may require consultation with the Service. Also, while several parcels of designated and revised proposed critical habitat are not within special designation areas, there are no existing or proposed routes of travel in the majority of these parcels. Therefore, since there is no legal motorized access to these parcels, significant mineral extraction is unlikely to occur in these areas. With proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit the bighorn sheep and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects to PBS or the function and conservation role of its 2001 designated or 2007 revised proposed critical habitat at the programmatic level due to mineral resource management activities.

Wildland Fire Management: The ESDRMP proposes to protect human life and communities, property, and the natural resources on which they depend; reduce hazardous fuels around communities at risk; provide appropriate management response; and maintain natural biological processes through the use of fire as a natural disturbance.

General Species Effects: Prescribed fires have the potential to cause short-term impacts to species and their habitats by causing direct mortality and destruction of streamside or hillside/mountain slope vegetation. Erosion can increase following fires and cause changes in stream morphology, reducing the number and sizes of pools and affecting reproductive efforts. Other potential effects due to prescribed burning include direct mortality to species caught in the fire and indirect impacts due to smoke. Specific effects from fires would depend on the time of year, fire frequency, soil, topography, and fire intensity. Prescribed burning can also reduce wildfire intensities where historic fire suppression has led to unnatural fuel accumulation.

Mechanical fuels reduction projects have the potential to impact avian species through alteration of perching or roosting habitat, including removal/burning of perch trees that are deemed potential falling hazards to structures, facilities, roads, and/or public use areas; removal/burning of dead vegetation and logs in night roost habitat where high fuel-loading necessitates; and thinning/burning of some green trees in night roosts where stands are overstocked and/or unhealthy. Mechanical fuels reduction projects can result in direct impacts such as crushing and indirect impacts such as sedimentation and siltation of aquatic habitats. Fuelbreak maintenance can have adverse effects to listed species, particularly plants that occur within or near the fuelbreak. Butterflies can possibly become established on fuelbreaks in periods between maintenance activities. Fuelbreaks are typically located on ridgelines and thus seldom cross streams or rivers. However, fuelbreaks can cause some erosion and the delivery of sedimentation into water courses off of steep slopes. Long-term benefits can also occur from fuels reduction projects that reduce the potential for catastrophic wildfire.

Fire suppression activities include fire line construction; fire retardant and water drops; establishment of temporary fire camps, staging areas, parking sites, safety zones, and helipads; and post-fire rehabilitation. Safety zone and fire line construction can involve using bulldozers to clear vegetation down to bare soil. Parking areas and fire camps result in heavy trampling and soil compaction from equipment and vehicles. Fire camps and fire suppression activities may also tax nearby water supplies for putting out fires (as well as supplying fire camp). Fire lines cut through habitat can alter hydrological patterns as well as destroy individual plants and kill animals and encourage the establishment of non-native species. All of these activities can result in adverse effects if in or near occupied habitat.

Least Bell's Vireo: In addition to the general effects of wildland fire management outlined above, potential effects to LBV also include disturbance of individuals due to noise and/or smoke and alteration of riparian vegetation.

Quino Checkerspot Butterfly: In addition to the general effects of wildland fire management outlined above, potential effects to Quino include crushing or burning of host plants and individuals by vehicle or foot traffic.

Peninsular Bighorn Sheep: In addition to the general effects of wildland fire management outlined above, potential effects to bighorn sheep include disturbance of individuals due to noise and/or smoke and alteration of foraging vegetation.

Avoidance and Minimization Measures: Impacts to these species and designated and revised proposed critical habitats would be minimized through implementation of the following measures proposed in the plan: (1) prescribed burning would be conducted to benefit wildlife habitat and allowed only on a case-by-case basis; (2) in consultation with the Service, BLM would develop a Fire Management Plan that includes all known locations of listed species, critical habitat, and suitable habitat within the Planning Area; (3) the Fire Management Plan and any resulting BAER Plans after wildfire would incorporate measures to avoid and minimize

impacts to listed species to the extent feasible, and include offsetting measures to restore habitat conditions adversely affected by wildfire, suppression, and BAER activities; (4) restoration would only include the use of local native plants. While likely beneficial in the long-term, wildland fire management activities may result in short-term impacts to LBV, Quino, PBS and their designated and revised proposed critical habitats. However, with proper implementation of the avoidance and minimization measures outlined in this section and conservation/additional measures outlined in the proposed ESDRMP that benefit listed species and their habitat through management of their required primary constituent elements, we do not anticipate significant adverse effects to listed species or their designated or revised proposed critical habitats due to wildland fire management activities at the programmatic level.

Special Designation Management: Special designations proposed under the ESDRMP include Wilderness Areas (WAs), Wilderness Study Areas (WSAs), National Scenic Trails (NSTs), and Areas of Critical Environmental Concern (ACECs).

Wilderness Areas: Management of WAs would involve the continuation of monitoring, signing, and restoration as necessary. WA would be withdrawn from mineral entry, mineral leasing, and mineral sales. No use of motor vehicles, motorized equipment, or other form of mechanized transport would be allowed. No structures or other installations would be allowed. Administrative use of vehicles and structures would be the minimum necessary for the administration of these areas. Prescribed fire may be used: (1) to reintroduce or maintain the natural condition of a fire-dependent ecosystem; (2) to restore fire where past fire control measures had interfered with natural ecological processes; (3) where a primary value of a given wilderness would be perpetuated as a result of burning; or (4) where it would perpetuate threatened and endangered species (MS-8560.35).

Wilderness Study Areas: The BLM would continue to manage WSA under BLM's Interim Management Policy until Congress designates them as wilderness or releases them from WSA status. WSA would not be leased for oil and gas or geothermal extraction. Use of motor vehicles, motorized equipment, or other forms of mechanical transport would not be allowed off boundary roads or newly constructed trails since 1976 within the WSAs. Conditions and uses in and around WSA would be monitored to identify actions or uses that impair the wilderness values of the Planning Area.

Areas of Critical Environmental Concern: The Proposed Action would adjust the In-Ko-Pah ACEC to exclude the area that overlaps the Carrizo Gorge Wilderness and Carrizo Gorge WSA, and expand it to include the adjacent bighorn sheep designated critical habitat along the western and southern boundaries. The Table Mountain ACEC would also be expanded to include bighorn sheep designated critical habitat that is to the north between the northern boundary of the ACEC and the southern boundary of the Table Mountain WSA. This would result in an additional layer of protection for 1,631 acres of PBS critical habitat (designated in 2001) on BLM-administered lands within the Planning Area (Figure 2-1 of the BA). The protection of

relevant and important values would take precedence over authorized land uses. The BLM would retain the ACEC in public ownership and seek to acquire non-Federal lands and interests in lands within the ACEC from willing sellers by purchase, exchange, or donation. Future acquisitions of in-holdings and edge-holdings would be managed in accordance with the designated ACEC. Treatment for hazardous fuels and non-native invasive or pest species would be allowed. All ACEC would be closed to wood collection, but traditional use by Native Americans would be allowed. Resources within the ACEC would be monitored to detect change and prevent future deterioration.

National Scenic Trail (Pacific Crest National Scenic Trail): Approximately 68 miles of the Pacific Crest NST occur in the Planning Area, 15 miles of which occur on BLM-administered lands within Chariot and Rodriguez Canyons and the San Felipe Hills WSA. Motorized vehicles and mountain bikes are not allowed on the Pacific Crest NST. The ESDRMP and Final EIS would continue to manage the portion of the Pacific Crest NST within BLM-administered lands in accordance with the existing management plan and the existing Memorandum of Understanding (MOU) with the U.S. Forest Service.

General Species Effects: In general, the continuing management of existing WAs, WSAs, and ACECs and the expansion of ACEC's positively affects the LBV, Quino, and the PBS since recreation and use are further limited in these areas. However, authorized recreational use in these areas may adversely affect species as described in the "Recreation Resource Management" section above.

Avoidance and Minimization Measures: See "Recreation Resources Management" section above for a discussion of measures to avoid and minimize impacts associated with "Special Designation Management".

Livestock Grazing Management: The ESDRMP proposes to make all allotments unavailable to grazing. This would make approximately 34,291 acres of grazing lands within PBS critical habitat unavailable for grazing (Figure 2-2 of the BA). If necessary to protect resource values, grazing may still be used as a vegetation management tool subject to further environmental analysis and consultation with Service.

General Species Effects: Effects to listed species can occur from direct trampling of individuals, trampling of stream banks which can result in soil compaction, sedimentation, direct mortality, and loss or reduction in vegetative bank cover. Livestock grazing can also result in the invasion of non-native plant species.

Least Bell's Vireo: In addition to the general effects of livestock grazing outlined above, potential effects to LBV also include destruction of nests and the alteration of riparian vegetation. Livestock grazing can also impact the LBV through cowbird parasitism.

Quino Checkerspot Butterfly: In addition to the general effects of livestock grazing outlined above, potential effects to Quino include host plant destruction, egg and larval trampling, cryptogamic crust degradation.

Peninsular Bighorn Sheep: In addition to the general effects of livestock grazing outlined above, potential effects to bighorn sheep include the transmission of disease from domestic sheep or goats.

Avoidance and Minimization Measures: To avoid impacts to listed species and designated and revised proposed critical habitats, the ESDRMP proposes to discontinue livestock grazing on all BLM lands in the Planning Area with the exception of using grazing as a vegetation management tool. The potential effects of using grazing for vegetation management are discussed in detail in the "Vegetation Resources Management" section above. The elimination of livestock grazing from the Planning Area would benefit LBV and Quino primarily by reducing direct trampling of individuals and habitat degradation, and would benefit PBS by reducing habitat degradation and the potential transmission of disease.

Transportation and Public Access Management: The ESDRMP proposes to designate all BLM-administered lands as open, closed, or limited to motorized travel, allowing OHVs and general vehicle travel on routes designated for motorized vehicles. However, emergency vehicles may utilize a drivable wash to access a site. Where no roads exist, vehicles would be authorized on a case-by-case basis to travel cross-country to avoid the need for road building. Where new roads must be built, roadbeds would be no wider than needed for reliable access.

BLM's strategy for restoring non-motorized routes or trespasses would be accomplished as rapidly as funding permits. Sensitive resources in immediate danger or those that have been damaged by vehicle trespass would be a high priority for restoration. Typically, the restoration would be limited to that portion of the route of trespass that is in line of sight from an open route. Each route would be evaluated on a case-by-case basis, and the most appropriate method of restoration would be used based on geography, topography, soils, hydrology, and vegetation.

One implementation level decision included in the Proposed Action is the identification of routes of travel. All routes of travel have been classified as motorized or non-motorized. Motorized routes may be open to all vehicles, including OHVs. Some motorized routes may have additional limitations on use, including vehicle size, vehicle type, and season of use. Non-motorized routes would be closed to motorized vehicles, including OHVs, but open to biking, hiking, and equestrian use. The ESDRMP proposes designating 3.2 miles of existing motorized routes to non-motorized routes within PBS critical habitat.

General Species Effects: Motorized road use affects listed species through crushing or striking individuals caught in travelways and spillage of oil, fuel, or other toxic substances into waterways. Road maintenance activities have similar effects. Roads can also impact listed

species by bringing human activity into habitat. Increased recreational access afforded by trails may cause disturbance, avoidance of foraging and breeding sites, and flushing of nesting birds. These problems may lead to higher predation and nest abandonment rates. Impacts related to non-motorized trail use are similar to those discussed in the "Recreation Resources Management" section above.

Least Bell's Vireo: See "General Species Effects" section above.

Quino Checkerspot Butterfly: In addition to the general effects of motorized and non-motorized road use outlined above, potential effects to Quino also include removal or crushing of host plants that encroach into areas of road maintenance, which could result in the death of larvae or eggs of the Quino if they had colonized those plants. Adult Quino checkerspot butterflies may be injured or killed by moving vehicles. Use and maintenance of roads and motorized trails may also facilitate the establishment of invasive non-native plant species. The seeds of invasive, non-native plants could be spread into Quino habitat by way of shoes, maintenance equipment, and vehicle tires.

Peninsular Bighorn Sheep: In addition to the general effects of motorized and non-motorized road use outlined above, potential effects to bighorn sheep also include chronic disturbance during the lambing and rearing season and habitat abandonment due to prolonged disturbance.

Avoidance and Minimization Measures: Impacts to listed species due to the use of existing motorized and non-motorized routes of travel would be minimized through implementation of the following measures in the proposed plan: (1) WAs and WSAs would be designated as closed areas for mechanized and motorized vehicle use; (2) travel within the rest of the Planning Area, outside of special designation areas, would be limited to designated routes; (3) route designations would be based on recreational, cultural, and biological importance; (4) motorized vehicle use in sensitive areas, such as critical habitat or recovery areas, would be limited through incorporation of seasonal closure of designated routes; and (5) surface disturbance from discretionary activities and illegal trespass would be restored. Avoidance and minimization measures related to non-motorized trail use are similar to those discussed in the "Recreation Resources Management" section above.

Impacts to the LBV due to the use of existing motorized and non-motorized routes of travel would be further minimized for the following reasons: (1) the majority of occupied habitat would be within special designation areas (WA or WSA), which are closed to motorized vehicle use, and (2) the area of occupied habitat along San Felipe Creek not within a special designation area is within an area containing no existing or proposed motorized or non-motorized routes of travel. With proper implementation of the avoidance and minimization measures outlined in this section and additional measures outlined in the proposed plan, we do not anticipate significant adverse effects to LBV due to the use of existing routes of travel at the implementation level.

Impacts to Quino and its 2002 designated critical habitat due to the use of existing motorized and non-motorized routes of travel would be further minimized for the following reasons: (1) while in an area designated for limited OHV-use, there are no existing or proposed routes of travel in 2002 designated critical habitat and therefore, no legal motorized access in that area; (2) the majority of potential habitat would be within special designation areas (WA or WSA), that would be closed to motorized vehicle use; and (3) the majority of the routes of travel proposed in potential habitat that are not within a special designation area would be designated for non-motorized vehicle use only. Despite these measures, individual Quino checkerspot butterflies and its 2002 designated critical habitat could be negatively impacted by ongoing use of existing motorized and non-motorized routes of travel in potential habitat areas through crushing of host plants by vehicle or foot traffic that occur near recreation sites, which could result in the death of Quino larvae or eggs if they had colonized those plants. However, the relative lack of vehicular access, and the presence of a relatively limited non-motorized trail network in Quino potential and designated habitat, would function together in limiting overall human visitation rates to roughly current levels, which have not been postulated to be sufficiently instrusive to limit population growth. As a result of this and with proper implementation of the avoidance and minimization measures outlined in this section and additional measures outlined in the proposed ESDRMP that benefit the subspecies and its habitat through management of its required primary constituent elements, we do not anticipate significant adverse effects to Quino or its 2002 designated critical habitat due to the use of existing routes of travel at the implementation level.

Impacts to PBS and its 2001 designated or 2007 revised proposed critical habitat due to the use of existing motorized and non-motorized routes of travel would be further minimized for the following reasons: (1) the majority of the 2001 designated critical habitat and the 2007 revised proposed critical habitat would be within special designation areas (WA, WSA, or ACEC) that would be closed to motorized vehicle use, and (2) the Table Mountain and In-Ko-Pah ACEC boundaries would be expanded to include critical habitat designated in 2001, providing additional habitat protections in these areas. Despite these measures, bighorn sheep could be negatively impacted by on-going recreation management activities due to their general sensitivity to human-related disturbance resulting in chronic disturbance throughout the year. However, the relative lack of vehicular access, and the presence of a relatively limited non-motorized trail network in bighorn sheep habitat, would function together in limiting overall human visitation rates to roughly current levels, which have not been postulated to be sufficiently intrusive to limit population growth. As a result of this and with proper implementation of the avoidance and minimization measures outlined in this section and additional measures outlined in the proposed ESDRMP that benefit the bighorn sheep and its habitat through protection and management of its required primary constituent elements, we do not anticipate significant adverse effects to PBS or its 2001 designated or 2007 revised proposed critical habitat due to the use of existing routes of travel at the implementation level.

Public Health and Safety Management: The ESDRMP proposes to address the following public health and safety concerns in the Planning Area: abandoned mines, unexploded ordnance (UXO), international border issues, and hazardous materials.

General Species Effects: Many law enforcement activities have beneficial effects on listed species (e.g., enforcing area closures and regulations that are designed to protect species and habitats). However, law enforcement actions can have adverse effects as well. When pursuing violators, agents sometimes need to drive or hike cross-country. This can result in direct impacts such as the trampling or destruction of plants, animals, and habitat and the disturbance of breeding behavior. Surveillance and apprehension of suspects and evidence and follow-up resource rehabilitation activities associated primarily with the illegal growing or manufacture of illegal substances can result in adverse effects to listed species. Due to the changing locations of these activities a variety of sites may be affected. The potential impacts to species and critical habitat from law enforcement activities are similar to the impacts that may result from recreational activities as discussed above, but of a lesser magnitude because of the relatively lower enforcement presence than levels of casual use.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the Proposed Action are not considered in this section because they require separate section 7 consultation.

The following cumulative effects analysis of foreseeable State, tribal, local, and private actions may provide some insight into the current environmental baseline and likely trends that may affect the species addressed in this biological opinion. Resident human populations within and adjacent to the range of the LBV, PBS, and Quino in the Planning Area appear to be expanding at a slow rate, especially compared to more urban areas. However, certain human activities appear to be growing at a faster rate, including utility line construction, renewable energy development, groundwater pumping, and perhaps recreational use of adjacent State and private lands. Though these types of activities are anticipated in the future, we are not aware of specific proposals currently being planned or proposed in the action area. Given the proximity of the Planning Area to the U.S./Mexico international border, the movement of illegal immigrants through the area is also likely to increase over time.

The Service is currently aware of one action reasonably certain to occur within the Planning Area: the preparation of the San Diego East County Multiple Species Conservation Plan (MSCP). The proposed MSCP would address the public and private land conservation needs of numerous listed and unlisted species, including the three covered by this Biological Opinion. BLM has volunteered assistance to the County of San Diego during the preparation of the MSCP, which is intended to develop a habitat conservation plan for the county-administered lands in the eastern portion of the county. The MSCP is a cooperative effort among the County, the Service, and CDFG. Implementation of this program will result in the issuance of a permit to the County for incidental "take" of threatened and endangered species in locations outside designated conservation areas. The overall effect of the MSCP is the creation of a large connected habitat

system that addresses the regional habitat needs for a number of species. BLM lands in the ESDRMP Planning Area would contribute to the size and configuration of these reserves.

The MSCP will potentially provide coverage for many sensitive species found in the eastern portion of the county. All of the federally and state listed species and nine of the 13 BLM sensitive species found within the ESDRMP Planning Area are included on the draft list of species proposed for coverage under the MSCP.

While the ECMSCP is still in the planning phase, the focus by specific stakeholders and other interested land owners and entities would be to reduce any significant cumulative impacts on the special status species from activities located within the ESDRMP Planning Area. Given the large amount of land within the ESDRMP Planning Area owned and managed by USFS, California State Parks, and the intent of the MSCP to address the public and private land conservation needs of sensitive species, future implementation of the ECMSCP should minimize the cumulative impacts of activities associated with increased human activity on LBV, PBS, and Quino. However, as stated above, since the MSCP is still in the planning phase, we are unable to evaluate the extent to which it will minimize cumulative impacts to these species at this time.

CONCLUSION

The proposed ESDRMP provides a framework for managing BLM lands in East County San Diego and provides general guidance that largely benefits the conservation of the species addressed in this biological opinion. The proposed ESDRMP prescribes numerous avoidance, minimization, and offsetting measures to future activities that may adversely affect these species. After reviewing the current status of these species, environmental baseline for the action area, effects of the Proposed Action, and cumulative effects, it is our biological opinion that implementation of ESDRMP is not likely to jeopardize the continued existence of the LBV, Quino, or PBS, nor destroy or adversely modify designated or revised proposed critical habitat of the PBS or designated critical habitat for Quino. We reached these conclusions for the following reasons:

1. The ESDRMP provides a program-level framework useful for tracking changes to the environmental baseline that can be used to develop an assessment and monitoring program for future conservation management.

2. Except as noted in #3 below, all discretionary activities that affect listed species would be addressed under subsequent section 7 consultations on a project by project basis. All future discretionary actions require section 7 consultation, which would provide opportunities to evaluate project-specific effects and implement alternative designs and avoidance, minimization, and offsetting measures.

3. Levels of habitat loss and disturbance by existing/anticipated casual uses, and the designation of routes of travel, are not expected to significantly affect the listed species addressed herein. As discussed in the "Effects of the Action" section above, the limited amount of disturbance associated with these activities is not expected to appreciably change the numbers, distribution, or population growth of these listed species, nor appreciably affect the primary constituent elements of designated and revised proposed critical habitat.

4. As described above in the "Description of the Proposed Action" and "Effects of the Action" sections above, BLM would implement numerous protective measures that reduce potential adverse effects of permitted activities to a level that the is not expected to appreciably change the numbers, distribution, or population growth of these listed species, nor appreciably affect the primary constituent elements of designated and revised proposed critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harassment is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM fails to assume and implement the terms and conditions below, or fails to require adherence to the terms and conditions through enforceable stipulations in any permit or grant issued under authority of this opinion, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

The ESDRMP contemplates numerous activities for which separate authorization by BLM would be needed. Though we have evaluated the general nature of the effects of these actions, we cannot assess the potential effects of future specific actions because data on the locations, timing, size, purpose, and other aspects are not known at this time. Consequently, we cannot provide an exemption from the prohibitions against take, as described in section 9 of the Act, for the incidental take that may result from these actions. Given this limitation, this programmatic biological opinion provides an exemption from the prohibitions against incidental take that may result from the designated routes of travel identified in the proposed ESDRMP that do not require separate discretionary approval by BLM. Incidental take caused by unauthorized activities that are out of compliance with BLM management plans are not exempted by this biological opinion.

Amount or Extent of Take Anticipated

Least Bell's Vireo

Based on the best available information, LBV have been documented from several locations within the Planning Area. However, the lack of recent survey effort on BLM lands and the absence of field work in preparation of the Biological Assessment (RECON 2007) of the ESDRMP do not rule out the potential for additional extant populations to remain undetected. Recent nesting records indicate that these birds could currently be nesting or begin nesting again where suitable habitat occurs, reestablishing populations in former breeding habitats or colonizing new areas. However, according to the ESDRMP, there are only small areas of potential habitat present in remote canyons that have dense understory vegetation. Given the relative lack of motorized vehicle access, the presence of a relatively limited non-motorized trail network, and the relatively low numbers of LBVs known and likely to be within the Planning Area, the Service anticipates few individuals would be impacted by the use of designated motorized and non-motorized routes of travel or related casual uses. Also, many of the potential impacts associated with the use of designated routes of travel are expected to be minimized through implementation of appropriate avoidance and minimization measures. As a result, the Service anticipates that the number of LBV in the Planning Area would not change measurably due to use of designated motorized and non-motorized routes of travel, and that incidental take is unlikely to occur.

Quino Checkerspot Butterfly

Based on the best available information, Quino have been documented on private lands but not on BLM-administered lands in the Planning Area. However, recent survey efforts have not been conducted on many BLM lands and the Biological Assessment (RECON 2007) does not rule out the potential for additional extant populations to remain undetected, particularly given that suitable habitat occurs within the Planning Area. Given the relative lack of vehicular access coupled with the presence of a relatively limited non-motorized trail network in Quino suitable

habitat and the proposed implementation of measures to avoidance and minimization impacts to this species, the Service anticipates that incidental take of Quino is unlikely to occur from casual uses and the designation of motorized and non-motorized routes of travel in the Planning Area.

Peninsular Bighorn Sheep

The precise level or extent of anticipated incidental take associated with the use of designated routes of travel in terms of individual PBS is difficult to determine when adverse effects largely result from the behavioral response of individuals to human disturbance. The net result is a functional loss of habitat that may eventually be reflected in the population dynamics of the species. Since a population decrease may be gradual and populations naturally fluctuate to a certain degree, humans may not recognize that their actions are the ultimate cause of the decline or take. Bighorn sheep are wide-ranging animals and demographic changes may not be immediately apparent, however, the positive and negative effects of implementing the Proposed Action potentially would contribute to, and be reflected by, the population trends of individual ewe groups. Bighorn sheep conservation strategies typically focus on ewe groups as the basic unit of demographic management; therefore, tracking ewe group population levels and management practices, offers a means of evaluating the effects of the Proposed Action and associated incidental take.

The CDFG, in cooperation with the Park and Service, conducts aerial surveys of the Carrizo Canyon and Vallecito ewe groups every other year, and the Jacumba Mountains south of Interstate 8 are included when resources are available. Aerial survey results are adjusted for sightability bias, thus yielding reliable estimates with confidence intervals. The ability to construct confidence intervals is important to the success of this approach because population estimates are significantly different when their confidence intervals do not overlap. Therefore, statistically significant population changes would cause concern and provide an appropriate opportunity to review the situation and determine if additional measures are required to protect bighorn sheep. Changes in population levels that are not statistically significant typically would not warrant a review of ongoing management. Accordingly, small, statistically non-significant population declines, indicative of usual fluctuations in environmental conditions and population trajectories, would not cause unnecessary reevaluation of management actions.

As discussed in the "Effects of the Action" section above, the relative lack of vehicular access, and the presence of a relatively limited non-motorized trail network in bighorn sheep habitat, would function together in limiting overall human visitation rates to roughly current levels, which have not been postulated to be sufficiently intrusive to limit population growth. Also, many of the potential impacts associated with the use of designated routes of travel are expected to be minimized through implementation of appropriate avoidance and minimization measures. As a result, the Service anticipates that ewe group population trajectories would not change appreciably and therefore, does not anticipate take of Peninsular bighorn sheep due to the use of designated motorized and non-motorized routes of travel or other casual uses in the Planning Area.

Reasonable and Prudent Measures

Given the anticipated lack of incidental take discussed above, the Service does not offer any reasonable and prudent measures to minimize the impact of the taking.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, BLM must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are non-discretionary. However, given the anticipated lack of incidental take discussed above, the Service does not offer any terms and conditions to minimize the impact of the taking.

Disposition of Sick, Injured, or Dead Specimens

The Service's Carlsbad Fish and Wildlife Office (760) 431-9440 must be notified within three working days should any LBV, Quino, or PBS be found injured or dead in the action area. To the extent known, written or verbal notification should include the date, time, and location of the incident; number of discovered specimens; cause of injury or death; and any other pertinent information. Injured animals, if deemed treatable, should be transported under humane conditions to a qualified veterinarian or certified wildlife care facility, with the Service apprised of the final disposition. Any dead specimens may be: (1) reposited with the closest Service field office or with an educational/research institution possessing the appropriate State and Federal permits; or (2) marked, photographed, and left in the field. In either case, the finding and relevant details should be immediately reported to the Service.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities to minimize or avoid adverse effects of a Proposed Action on listed species or critical habitat or to help implement recovery plans, or to develop information for conservation purposes. The Service recommends the following:

1. BLM should ensure that adequate staff and financial resources are available to effectively implement the protective measures outlined in the Proposed Action.

2. BLM should coordinate activities with adjacent land management agencies that also have a stake in the management of habitat within and adjacent to the Planning Area boundaries. Coordination of protective management strategies with neighboring

jurisdictions would serve to better protect habitat, and result in a more effective understanding of land use patterns that have the potential to degrade habitats and species.

3. BLM should regularly patrol lands under its administration to ensure that the public complies with the BLM's vehicular access guidelines, especially in known areas of more popular use.
4. BLM should conduct vegetation monitoring surveys to determine where invasive species may be a problem to natural plant communities.

5. BLM should expand its educational efforts concerning listed species. Informational guides should be expanded in their next edition to include listed species and specific measures for reducing impacts should be addressed, such as the importance of avoiding habitat during sensitive periods (i.e., the breeding season) and of concentrating activities in previously disturbed sites.

6. BLM should coordinate with the Service and Anza-Borrego Desert State Park regarding the need for a cowbird control program in known and potential breeding habitat for the LBV.

7. BLM should cease dispensing brochures that have the effect of attracting recreation to ACEC's unless management plans address species requirements and funding is adequate to provide an effective management presence.

8. BLM should review all rights-of-way grants, permits, easements, leases, etc., within 1 year of the date of this opinion, to determine its discretionary authorities/section 7 responsibilities relative to tenure, expiration, and renewal of these agreements to protect species and prevent the degradation of habitat from maintenance and repair activities for existing facilities. Subject to available authority and potential for adverse effects, the BLM should initiate section 7 consultation to address the effects of operation and maintenance procedures on existing facilities.

9. BLM should continue to work with the Service and the County of San Diego on the San Diego East County MSCP. Upon completion of the MSCP, BLM should adopt management measures in support of the MSCP for the public lands within the Planning Area. Public lands, identified as important to species coverage under the MSCP reserve system should not be considered for disposal.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

ESDRMP Plan Consistency with Recovery Plans

The ESDRMP encompasses portions of the geographic range of three listed species and (1) supports certain areas delineated in recovery plans as recovery units, and/or designated as critical habitat; (2) provides habitat areas with potential to support larger populations with improved management; and (3) supports feeding and resting habitat for these species. However, the ESDRMP, as written, is structured to a great degree to rely on section 7(a)(2) consultation to avoid jeopardy or adverse modification of critical habitat, rather than to establish a program that promotes recovery of listed species in conformance with section 7(a)(1) of the Act. To address the extent to which the ESDRMP would promote conservation of the three listed species covered by this biological opinion, we have excerpted pertinent recovery tasks from approved or draft recovery plans, as appropriate, and compared them with measures in the Description of the Proposed Action and other accomplishments to date.

Draft Least Bell's Vireo Recovery Plan (Service 1998): The recovery actions outlined in the recovery plan include: protecting and managing riparian habitat and adjacent upland habitats; restoring habitat; and conducting research and monitoring.

As discussed in the "Species Accounts" section above, small areas of potential habitat for LBV are present in the Planning Area in remote canyons that have dense understory vegetation. The BLM mapped 32 riparian areas, covering a total of approximately 97 acres, in the Planning Area, of which several are currently known to be occupied by the subspecies.
As discussed above, the ESDRMP proposes to (1) continue to manage the majority of occupied habitat within special designation areas (WA or WSA), thereby continuing to limit the extent of recreational opportunities allowed in these areas and maintaining the withdrawal of these areas from all forms of land entry or exclude them from all types of land use authorizations, including community expansion projects, communications or renewable energy facilities, and leasable and salable mineral extraction; (2) prioritize rehabilitation of habitats that support Special Status Species using methods such as invasive species control and prescribed burning, as appropriate; (3) conduct revegetation projects that promote proper functioning condition of riparian areas and recruitment of oaks in adjacent uplands; (4) authorize cowbird trapping by adjacent land mangers or other agencies on a case-by-case basis; (5) discontinue livestock grazing on all BLM lands in the Planning Area with the exception of using grazing as a vegetation management tool; (6) develop a Fire Management Plan that includes all known locations of listed species and suitable habitat within the Planning Area; and (7) restore surface disturbance from discretionary activities and illegal trespass. While not explicitly discussed in the ESDRMP, the BLM has an ongoing public education program that promotes, among other subjects, awareness of sensitive habitats and species, including listed species.

The implementation of these and other actions proposed in the ESDRMP and other accomplishments to date would promote conservation of LBV and assist in achieving the goals of several recovery actions. However, funding for periodic monitoring and adaptive monitoring, including the need for cowbird management, on BLM lands is needed to provide for effective management of this subspecies within the Planning Area.

Quino Checkerspot Butterfly (Service 2003): The recovery criteria outlined in the recovery plan include: protecting occupied habitat in recovery units and occurrence complexes and dispersal areas between occurrence complexes; restoring or enhancing habitat; and conducting research and monitoring. As discussed in the "Species Accounts" section above, none of the BLM-administered lands within the Planning Area are known to be occupied by Quino; however, the southern portion of the ESDRMP is within the Southeast San Diego Recovery Unit, containing the Jacumba Occurrence Complex. Also, over half of the BLM lands in the Planning Area, including critical habitat designated in 2002 on and adjacent to Round Mountain, are within the Service's recommended survey area, indicating areas of known and/or potential occupancy.

As discussed above, the ESDRMP proposes to (1) continue to manage the majority of potential habitat in the Planning Area within special designation areas (WA, WSA, or ACEC) and proposes to expand the areas covered by an ACEC, thereby continuing to limit the extent of recreation activities allowed in special designation areas and maintaining and expanding the withdrawal of these areas from all forms of land entry or exclude them from all types of land use authorizations, including community expansion projects, communications and renewable energy facilities, and leasable and salable mineral extraction; (2) prioritize rehabilitation of habitats that support Special Status Species using methods such as invasive species control and prescribed burning, as appropriate; (3) discontinue livestock grazing on all BLM lands in the Planning Area with the exception of using grazing as a vegetation management tool; (4) develop a Fire Management Plan that includes all known locations of listed species and suitable habitat within the Planning Area; and (5) restore surface disturbance from discretionary activities and illegal trespass. While not explicitly discussed in the ESDRMP, the BLM has an ongoing public education program that promotes, among other subjects, awareness of sensitive habitats and species, including listed species.

The implementation of these and other actions proposed in the ESDRMP and other accomplishments to date would promote conservation of Quino and assist in achieving the goals of several of the recovery criteria. However, funding for monitoring and adaptive management is needed to provide information for effective management of this subspecies within the Planning Area.

Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (Service 2000): The recovery actions outlined in the recovery plan include: promoting population increase; protecting and restoring essential habitat, reducing or eliminating direct and indirect human impacts on the subspecies; conducting research and monitoring; and developing and implementing education and public awareness programs.

As discussed in the "Species Accounts" section above, four of the eight recognized ewe groups (subpopulations) occur within the Planning Area: Carrizo Canyon, Vallecito Mountains, South San Ysidro Mountains, and North San Ysidro Mountains (Service 1999b). The Carrizo Canyon and Vallecito Mountain subpopulations occur primarily on BLM-administered land, while the North and South San Ysidro Mountain subpopulations occur primarily within Anza-Borrego Desert State Park. Of the 844,897 acres of critical habitat designated in 2001 for PBS, approximately 53,000 acres (6.3 percent of the total) overlap with BLM-administered lands in the Planning Area.

As discussed above, the ESDRMP proposes to (1) continue to manage the majority of occupied habitat in the Planning Area with special designation areas (WA, WSA, or ACEC) and proposes to expand the areas covered by an ACEC, thereby continuing to limit the extent of recreation activities allowed in these areas and maintaining and expanding the withdrawal of these areas from all forms of land entry or exclude them from all types of land use authorizations, including community expansion projects, designated utility corridors, communications, renewable energy facilities, and leasable and salable mineral extraction; (2) include a large portion of the critical habitat designated in 2001 and all of the critical habitat included in the 2007 revised proposed critical habitat designation within a special designation area (WA, WSA, or ACEC) that would be closed to motorized vehicle use; (3) limit use of motorized vehicle use in sensitive areas, such as critical habitat or recovery areas or areas used for lambing, through incorporation of seasonal closure of designated routes, as appropriate; (4) prioritize rehabilitation of habitats that support Special Status Species using methods such as invasive species control and prescribed burning, as appropriate; (5) discontinue livestock grazing on all BLM lands in the Planning Area with the exception of using grazing as a vegetation management tool; (6) prohibit the use of domestic sheep and goat grazing for vegetation management or as pack animals would be prohibited within nine miles of bighorn sheep designated critical habitat to avoid disease transmission; (7) develop a Fire Management Plan that includes all known locations of listed species and suitable habitat within the Planning Area; and (8) restore surface disturbance from discretionary activities and illegal trespass. While not explicitly discussed in the ESDRMP, the BLM has an ongoing public education program that promotes, among other subjects, awareness of sensitive habitats and species, including listed species.

The implementation of these and other actions proposed in the ESDRMP and other accomplishments to date would promote conservation of PBS and assist in achieving the goal of several recovery actions. However, funding for monitoring and adaptive management is needed to provide for effective management of this subspecies within the Planning Area.

REINITIATION NOTICE

This concludes formal consultation on the Proposed Action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal

involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this biological opinion, please contact Mary Beth Woulfe or Tannika Engelhard or of the Carlsbad Fish and Wildlife Office at (760) 431-9440.

REFERENCES CITED

References cited in this biological opinion are available upon request from the Carlsbad Fish and Wildlife Service (see first page of this document for contact information).

APPENDIX C

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STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

June 19, 2008

Vicki L. Wood
Bureau of Land Management
1661 South 4th Street
El Centro, CA 92243-4361

RE: BLM 041ZA-Eastern San Diego Resource Management Plan

Dear Ms. Wood:

Enclosed you will find my concurrence in your finding of no adverse effect on historic properties by implementation of the above cited plan. I have done so by adding a signed concurrence block to your letter. Your letter clearly articulates the reasoning why implementation of the proposed undertaking would not adversely affect historic properties. I very much appreciate the effort you and your staff have made to incorporate historic properties into your planning process.

If my staff can be of any further assistance, please contact Dwight Dutschke at 916-653-9134.

Sincerely,

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Enclosures

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 South 4th Street
El Centro, California 92243-4561

RECEIVED
JUN 09 2008
OHP

June 2, 2008

In Reply Refer To: EIS CA-670-2006-22 8100/1610 (P)
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
P O Box 942896
Sacramento, California 94296-0001

BLM041213A

RE: BLM 041ZA (Eastern San Diego Resource Management Plan)

Dear Mr Donaldson;

The BLM would like to continue consultation on the Proposed Eastern San Diego Resource Management Plan and Final Environmental Impact Statement in accordance with our *State Protocol Agreement Between The California State Director of The Bureau of Land Management And The California Sate Historic Preservation Officer and The Nevada State Historic Preservation Officer* (Revised 2007) (Section II(D)(1), Page 6, and Section V(A-E), Pages 12-13) The 102,869 acres in San Diego County administered and managed by the El Centro Field Office are noncontiguous parcels within an area extending from just north of the Riverside-San Diego County line to the International Border shared with Mexico and situated between the Anza-Borrego Desert State Park on the east and the Cleveland National Forest on the west This plan will revise and update the 1981 Management Framework Plan and will reflect new land management laws, address management issues caused by population growth in San Diego County and increasing demands for public uses that compete for resources and space Critical habitat for recently listed threatened and endangered species is addressed, as is an Executive Order to designate routes of travel on public lands This proposed plan integrates data and information about resources collected by the BLM over the past twenty-five years, and incorporates the latest Best Management Practices for different land management programs, including cultural resources

Consultation with your office on this plan was initiated in December 2004 The Draft Eastern San Diego Resource Management Plan and Draft Environmental Impact Statement (DRMP/DEIS) was sent to your office in July 2007 for review, and our staffs discussed the plan informally on July 17, 2007 Additional public comments were received and the Proposed Eastern San Diego Resource Management Plan and Final Environmental Impact Statement was prepared and published in late fall 2007. Alternative E, as outlined in the Proposed Plan, represents BLM's preferred alternative for management of each resource and resource use, and provides for a balance between authorized resource use and the protection and long-term

sustainability of sensitive resources It allows visitation and development within the Planning Area while ensuring that resource protection is not compromised Key management decisions include those which determine how much land would be available for renewable energy development, livestock grazing, disposal, expansion of Areas of Critical Environmental Concern, and off highway vehicle area and route designations A summary of those key decisions is provided below (however the exact acreage available for Renewable Energy development may change as we go through the protest resolution process):

Renewable Energy

- The proposed plan would make only 6,931 acres available for wind energy development in western McCain Valley out of a possible 33,130 acres
- It would make only 7,607 acres available for geothermal leasing out of 33,132 acres

Special Designations

Wilderness and WSAs

- The proposed plan would manage these lands for their long-term protection and preservation of their wilderness character under the principle of non-degradation

Areas of Critical Environmental Concern (ACEC)

- The proposed plan expands the In-Ko-Pah cultural ACEC by approximately 800 acres
  - Eliminates 13,600 acres of overlap with existing Wilderness and Wilderness Study Areas (WSAs)
- It expands the Table Mountain cultural ACEC by approximately 900 acres

Livestock Grazing

- The proposed plan would make all livestock grazing allotments unavailable (63,800 acres)

Disposal

- The proposed plan would make 490 acres available for disposal out of a possible 1,715 acres

Recreation

- The proposed plan moves existing off highway vehicle area designations forward and designates lands either closed to motorized vehicles or limited to designated routes
  - A total area of 61,712 acres would be closed to motorized use, including Wilderness and Wilderness Study Areas. and the area north of McCain Valley Road
  - No lands are designated as open areas
  - The remaining area of 41,157 acres would be classified as limited
- 185 total miles of routes designated as motorized or non-motorized
  - 90 miles motorized.
  - 95 miles non-motorized (mostly in Wilderness/WSA)

Specific to cultural resources, six goals and objectives have been identified for the planning area These include the continued identification, preservation and protection of significant cultural resources districts and landscapes as well as the prioritization of geographic

areas for new field inventory based upon a probability for unrecorded significant resources BLM will encourage public understanding and appreciation for cultural resources through educational outreach and heritage interpretation where appropriate and through the support of research opportunities which can contribute to the understanding of the ways humans have used and influenced natural systems and processes in the planning area Finally, the reduction and resolution of potential conflict and indirect impacts to cultural resources and the maintenance of view sheds of significant cultural resources whose settings contribute to their scientific, public, traditional, or conservation values are two additional goals identified in the Plan

In support of the planning effort and the development of the final product, BLM commissioned a Class I record search and literature review of the entire planning area The results of this review demonstrate that relatively few development projects have been proposed in this area since the passage of environmental legislation, therefore archaeological surveys and excavations towards that end have not been numerous The majority of inventory work has resulted from three large scale Section 110 projects over the last 30 years The first, documented in *Archaeology and History of the McCain Valley Study Area* (Cook and Fulmer 1980), utilized a sophisticated sampling strategy based primarily on geomorphology and proximity to water resources 7,200 acres were surveyed helping to form the foundation for archaeological understandings of eastern San Diego Another large survey was conducted by the San Diego County Archaeological Society in the southern part of the planning area in the 1970s which eventually resulted in the Table Mountain Archaeological District being nominated to the Register of Historic Places in 1980 More recently, in 2006, BLM commissioned ASM Affiliates, Inc to conduct a survey of approximately 270 miles (2000 acres) of existing roads and trails in preparation for the planning process to provide up to date information about the resources throughout the public lands This study, *Archaeological Survey of Eastern San Diego County Roads, Trails, and Campgrounds* (Hector, Moslak, and Pallette, 2007) resulted in the recordation of 105 new sites and updates of 87 previously documented sites The cultural resources identified during this inventory include a variety of site types ranging from prehistoric temporary campsites, lithic scatters, and isolated bedrock milling features to historic mining locations and more complex prehistoric habitation sites The study provided a good overview of the types and conditions of sites located throughout BLM along existing travel routes throughout the planning area within eastern San Diego County

Along with the Class I record search and literature review information, the results of which were incorporated into the planning document, the BLM El Centro Field Office has embarked on an effort to integrate all legacy cultural resource data into a Geographic Information System (GIS) spatial geodatabase We are proud to report that all of the site records (almost 700 in total) and all of the inventory projects from this area have been incorporated into our cultural resources spatial geodatabase We have also been locating and converting into GIS formats other legacy and archival records, both to archive and preserve as well as enhance our ability to better manage cultural resources on public lands This GIS initiative is critical for the cultural heritage program mission In particular, it will make possible better management by the cultural heritage staff of their data and thus enable much faster responses to real time demands for GIS cultural data in planning, fire, cultural resource evaluations within the eastern San Diego area

Specific to consultation with Native American tribes, BLM managers and planning staff have been consulting, and continue to consult, throughout these planning efforts Formal and informal consultation and contacts were made with interested tribal entities at several points in the planning process BLM initially invited Native American tribes to formally consult on this project through letters, which were sent in October 2001 and again in December 2004 A letter was sent to the chairman of each band or tribe which could have cultural ties to the planning area or had expressed an interest in the planning area Letters were also sent to council members, staff, and individuals who might have an interest or special knowledge of the planning area Each letter detailed the need for a new plan, described the planning area, and requested comments on any and all issues that may have been of concern to the tribe, including religious or cultural values that may be affected by planning decisions In January 2005, BLM, several other federal agencies, and the tribes participated in two general coordination meetings and at these meetings BLM announced that development of a plan was in process In January and February 2005, BLM also followed the formal invitations to consult with telephone calls to those tribes that had not responded to the invitation to consult or provide comments on the plan In September 2006, an additional letter was sent to the tribes informing them that the planning process was still underway, and re-inviting them to participate in the planning process BLM followed by sending a copy of the DRMP/DEIS to the tribes in the spring of 2007 and the Proposed Plan and Final EIS in November 2007 Face-to-face meetings and field visits with various tribal members to discuss the plan have taken place and will continue as needed Native American tribal governments and organizations consulted are listed below:

Campo Band of Mission Indians
La Posta Band of Mission Indians
Manzanita Band of Mission Indians
Ewiiaapaayp Band of Mission Indians
Inaja-Cosmit Band of Mission Indians
Santa Ysabel Band of Mission Indians
Mesa Grande Band of Mission Indians
Los Coyotes Indian Reservation
Barona Band of Mission Indians
Jamul Indian Village
Sycuan Band of Mission Indians
Viejas Band of Mission Indians
San Pasqual Band of Mission Indians
Kwaaymii Laguna Band of Mission Indians
Quechan Indian Tribe
Torres-Martinez Desert Cahuilla Indians
Morongo Band of Mission Indians
Rincon Band of Mission Indians

Issues or concerns brought to BLM's attention through Native American consultation, either during face-to-face meetings or by letter, include preservation and protection of sites, timelines for future surveys and resurveying efforts (with Native American monitors), ACEC designations for recent land acquisitions, wild land fire management, acquisition of private land in holdings, OHV use and effects to sites, making lands available for disposal that the tribes

could acquire, wind energy development (both for and against), considering a tribal proposal to enter into a 638 contract (as part of the Indian Self Determination and Education Assistance Act) with BLM to help manage lands in the planning area, continuation and deepening of consultation, and finally, continuation of traditional gathering practices Specific to Native American interest in traditional gathering in the planning area and in keeping with the recently enacted Interagency Traditional Gathering Policy (signed by both the California BLM and US Forest Service) which has been incorporated into the Proposed Resource Management Plan, this field office held a meeting with traditional practitioners from local tribes in March 2007 Daniel McCarthy, from the US Forest Service, who is also a skilled agave harvester, knowledgeable about the traditional gathering practices utilized by the Kumeyaay tribes from this region, presented to the BLM the techniques used to harvest and roast agave Following his presentation, tribal members and BLM staff discussed agave, juncus and other plant gathering locations and procedures This meeting, as well as the results of tribal consultation, has been very instrumental in BLM's development of the plan The views and comments of the tribes, and the information they have provided, have been taken into consideration and will continue to inform the final decision record as well as implementation of the plan

Off Highway Vehicle (OHV) Management Areas and Routes of Travel Designations

The BLM may use a single land use planning/NEPA (i e., Resource Management Plan/EIS) process to make both land use planning level and implementation level decisions according to the BLM Land Use Planning Handbook H-1601-1 Under the Federal Land Policy and Management Act (43 CFR 8340-42), BLM is required to designate areas as open, limited or closed to motorized vehicles Absent area designation, roads and trails are subject to uncontrolled off highway vehicle use and designation of areas and specific networks of roads and trails in limited use areas generally has the beneficial effect of controlling impacts of motorized use on public lands, including historic properties Designation provides a purposefully designed and clearly delineated travel network, reduces the potential for user caused route proliferation, and facilitates travel management and law enforcement In the case of this Eastern San Diego County Proposed Resource Management Plan, BLM would designate all public lands as either limited or closed, with regards to motorized travel These area designations are planning level decision whereas the individual route designations which BLM is also proposing to accomplish under this planning process are implementation level decisions

Open areas are areas where all types of vehicle use is permitted at all times, anywhere in the area There are no open areas proposed for this planning area

Limited areas are restricted at certain times, in certain areas, and/or to certain vehicular use In the proposed plan, 41,157 acres of the entire planning area (102,869 acres) would be designated limited In this case, limited refers to motorized use on designated roads and trails only within a use corridor of no more than 25 feet off the road edge

Closed areas are areas where motorized vehicle use is prohibited Congressionally designated Wilderness Areas and Wilderness Study Areas are statutorily closed to motorized and mechanized use, except for purposes specifically provided for by law Within the proposed plan, over half of the BLM lands (61,712 acres) would be designated as areas closed to motorized

vehicle use, however non-motorized uses including hiking and horseback riding would be allowable throughout the area

Routes of Travel Designations

We believe the requirement that BLM designate individual routes of travel as motorized or non-motorized and provide for a travel corridor width is the one decision in the proposed plan which may have the potential to affect significant historic properties However, it is important to note that many, if not all of these routes date back to at least the 1940s and the route designations proposed in this planning process will result in no significant change in the use or potential to affect cultural resources beyond conditions that have existed over the past 60 years Within this Plan, BLM is not proposing to create any new routes of travel, but rather only designate existing routes as either available for motorized use or not Our designation process took into consideration information provided from various program areas including each route's recreational value, access issues, and sensitive resource values ASM Affiliates (Hector, Moslak, and Pallette, 2007) inventoried a 100 ft corridor of all of BLM's existing routes and trails for the presence of cultural resources and this study provided a very good baseline of cultural resource data that factored into the route designation decision making process

None of these sites within the inventoried route of travel corridors have been formally evaluated for eligibility for the National Register, although the contractor did make recommendations on a sliding scale for each site The contractor also noted the current condition of sites and in some cases impacts but often it was impossible to tell whether these were ongoing or previous impacts BLM recognizes that use of designated routes and associated activities such as dispersed camping or travel off of designated routes may occur and those actions do have the potential to directly or indirectly affect historic properties Monitoring of sites will be necessary to ascertain if there is an effect and the nature and extent of those effects Once that has been determined and the site found eligible to the National Register, in order to avoid the potential for adverse effects to historic properties, the following Standard Protection Measures will be implemented by the BLM to lessen or avoid this effect altogether on a case by case basis as the need arises

A Adoption or implementation of use controls:
   1 Signage (use restrictions, informational, etc)
   2 Closures- temporary closure of area, or long term closure
   3 Adaptive Management (protocol that proceeds through stages managed to reduce or eliminate any effect) that includes monitoring, education, signage, and closure in sequential process

B Use of vegetative screening or surface restoration treatments:
   1 broadcast seeding
   2. planting of vegetation to promote screening/natural fencing

C Installation of physical barriers and protection devices within the boundaries of historic properties:
   1. Non-intrusive barriers such as rocks/boulders or other items placed on the

surface

2 Fencing such as T-post or other type with limited ground disturbance

D Capping or placement of foreign, non-archaeological materials (e g padding or filter cloth) over archaeological deposits to prevent surface and subsurface impacts

Agency Findings and Determinations

BLM would like to proceed in offering agency findings and determinations for this Proposed Plan BLM has determined that route designation is an undertaking with potential to affect cultural properties and is therefore subject to Section 106 review The BLM has also determined that the implementation of the above described Standard Protection Measures will ensure the avoidance of adverse effects for the route designation process and is seeking your concurrence on a determination of No Adverse Effect with conditions for the proposed undertaking in accordance with 36 CFR 800 5(3)(b)

With the exception of route of travel designations, all future specific management actions proposed within the planning area which have the potential to effect historic properties will be reviewed under the Section 106 process prior to approval Each action will be evaluated for its potential to adversely affect historic properties and if there is potential, the entire project area will be surveyed, sites recorded, and sites evaluated Proposals will be modified when possible to avoid adverse effects to sites eligible for or already included on the National Register If BLM determines that an adverse action could occur, BLM will consult with SHPO per the State Protocol.

BLM requests your concurrence with our findings related to the Proposed Eastern San Diego Resource Management Plan and Final Environmental Impact Statement My staff and I are available to discuss all matters related to this consultation If you have specific questions or need any clarification, please don't hesitate to contact either Carrie Simmons, El Centro Staff Archaeologist, 760-337-4437 or Daniel Steward, El Centro Resources and Planning Supervisor, 760-337-4424 Thank you very much

Sincerely,

Vicki L Wood
Field Manager

CONCUR:

for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

6/19/08

APPENDIX D

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Typical Management Actions and Best Management Practices

Vegetation Treatments (Including Fire Management Activities)

The following chemical, mechanical, manual, biological, and fire treatment methods would be used to achieve vegetation management objectives in the Planning Area.

A. Chemical

BLM would use EPA-approved herbicides in accordance with EPA's Endangered Species Pesticide Program covered in the BLM's *Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Draft PEIS* (DOI BLM 2005b). These herbicides are: atrazine; bromacil; bromacil + diuron; 2,4-D, 2,4-DP, dicamba; dicamba +2,4-D; diruon; glyphosate; glyphosate + 2,4-D; hexazinone; fosamine, imazapyr; picloram; picloram + 2,4-D; simazine; tebuthiuron; and triclopyr.

Buffer zones would be used adjacent to dwellings, domestic water sources, agriculture land, streams, lakes and ponds. A minimum buffer zone of 100 feet wide would be provided for aerial application, 25 feet wide for vehicle application, and 10 feet wide for hand application. Any deviations must be in accordance with the label for the herbicide. Herbicides would be hand wiped on individual plants within 10 feet of water where application is critical. Additionally, in order to protect listed, proposed, and candidate species, these buffer strips would be used.

BLM would work closely with the USFWS to ensure that herbicide applications would not affect listed or proposed, threatened, and endangered species on a project-level basis. If adverse effects are anticipated during informal consultation, BLM would formally consult on these projects. If USFWS develops herbicide guidance for particular species that improves protection beyond the current BLM design features, BLM would consider and incorporate that guidance as it consults with USFWS on a project-level basis.

The chemicals can be applied by many different methods, and the selected technique depends on a number of variables. Some of these are: (1) the treatment objective (removal or reduction); (2) the accessibility, topography, and size of the treatment area; (3) the characteristics of the target species and the desired vegetation; (4) the location of sensitive areas in the immediate vicinity (potential environmental impacts); (5) the anticipated costs and equipment limitations; and (6) the meteorological and vegetative conditions of the treatment area at the time of treatment.

Herbicides are applied in several ways, depending upon the treatment objective, topography of the treatment area, target species, expected costs, equipment limitations, and potential environmental impacts. Herbicide applications would be timed to have the least impact on non-target plants and animals consistent with the objectives of the vegetation management program.

The chemicals would be applied aerially with helicopters or fixed-wing aircraft, or on the ground using vehicles or manual application devices. Helicopters are more expensive to use than fixed-wing aircraft, but they are more maneuverable and effective in areas with irregular terrain and in treating specific target vegetation in areas with many vegetation types. Manual applications are used only for treating small areas or those inaccessible by vehicle.

Rates of herbicide application would depend on the target species, other vegetation present, soil type, depth of the ground water table, and presence of other water sources. When target species occur in riparian areas, the application rate would be reduced to reduce injury to non-target species.

During aerial applications, nozzles to reduce drift would be used for all liquid applications. Liquid herbicides would not be applied, when wind speeds exceed 5 miles per hour, and granular herbicides would not be applied, when wind speeds exceed 10 miles per hour (mph). Herbicides would not be applied, when conditions stated on the herbicide label cannot be met and when air turbulence significantly affects the desired spray pattern. Buffer zones to protect water resources would be provided according to individual state regulations and guidelines and herbicide labels.

Vehicle-mounted sprayer (hand gun or boom) applications would be mainly used in open areas that are readily accessible by vehicle. The boom would be used only where feasible to treat concentrated weed infestations. The hand gun would be used for spot treatment of weeds and only up to the high water line near water bodies. Neither hand guns nor booms would be used in riparian areas where weeds are closely intermingled with shrubs and trees. Under both hand gun and boom methods, sprays would be applied in a manner that gives the best possible coverage with the least amount of drift, and only when wind velocity is below 8 mph, except in riparian areas where treatment would be applied only at wind velocities below 5 mph. Boom sprayers would not be used within 25 feet of water bodies.

Hand applications could involve backpack spraying, hand wiping application, and cyclone broadcast spreading (granular formulations). Backpack sprayers are operated at low pressure and low volume and release herbicide through a single nozzle held from 0.5 to 2.5 feet above the ground when wind velocities do not exceed 8 mph. Near water, wind velocities cannot exceed 5 mph. Contact systemic herbicides, such as glyphosate, wiped on individual plants, would be used up to the existing high water line. Granular formulations would be applied through broadcast spreaders at about 3.5 feet above the

ground and no closer than 10 feet from the high water line of streams and other water bodies.

Herbicide applications are scheduled and designed to minimize potential impacts on non-target plants and animals, while remaining consistent with the objective of the vegetation treatment program. The rates of application depend on the target species, presence, and condition of non-target vegetation, soil type, depth to the water table, presence of other water sources, and the requirements of the label.

In many circumstances, the herbicide chosen, time of treatment, and rate of application of the herbicide are different than the most ideal herbicide application for maximum control of the target plant species in order to minimize damage to the non-target plant species and to ensure minimum risk to human health and safety.

B. Mechanical

Mechanical methods of vegetation treatment employ several different types of equipment to suppress, inhibit, or control herbaceous and woody vegetation (Vallentine 1980). The goal of mechanical treatments is to kill or reduce the cover of undesirable vegetation and thus encourage the growth of desirable plants. BLM uses wheel tractors, crawler-type tractors, mowers, or specially designed vehicles with attached implements for mechanical vegetation treatments. The use of mechanical equipment to reduce fuel hazards would be conducted in accordance with BLM established procedures. Re-seeding after a mechanical treatment has been applied is important to help ensure that desirable plants would become established on the site and not invasive species. The mechanical treatment and re-seeding should occur at a time to best control the undesirable vegetation and encourage the establishment of desirable vegetation. The best mechanical method for treating undesired plants in a particular location depends on the following factors:

- Characteristics of the undesired species present such as plant density, stem size, woodiness, brittleness, and re-sprouting ability
- Need for seedbed preparation, re-vegetation, and improve water infiltration rates
- Topography and terrain
- Soil characteristics such as type, depth, amount and size of rocks, erosion potential, and susceptibility to compaction
- Climatic and seasonal conditions
- Potential cost of improvement as compared to expected results

Bulldozing is conducted with a wheeled or crawler tractor with a heavy hydraulic controlled blade. Vegetation is pushed over and uprooted, and then left in windrows or piles. Bulldozing is best adapted to removing scattered stands of large brushes or trees. There are several different kinds of blades available depending on the type of vegetation and goals of the project. The disadvantage of bulldozing is soil disturbance and damage to non-target plant species.

Disk plowing in its various forms can be used for removing shallow-rooted herbaceous and woody plants. Disk plows should only be used where all of the vegetation is intended to be killed. There are several different kinds of root plows that are specific for certain types of vegetation. In addition to killing vegetation, disk plowing is effective in loosening the soil surface to prepare it for seeding and to improve the rate of water infiltration. The disadvantage of disk plowing is that it may be expensive and usually kills all species. Also, plowing is usually not practicable on steep slopes (greater than a 35- to 45-percent slope) or rocky soil. Plant species that sprout from roots may survive.

Chaining and cabling is accomplished by dragging heavy anchor chains or steel cables hooked behind tractors in a U-shape, half circle of J-shaped manner. Chaining and cabling is effective on rocky soils and steep slopes. Chaining and cabling is best used to control non-sprouting woody vegetation such as small trees and shrubs. However, desirable shrubs may be damaged in the process. Herbaceous vegetation is normally not injured by this control method. This control method is cost effective, as large areas can be readily treated. The chains or cables also scarify the soil surface in anticipation of seeding desirable species. The disadvantage is that weedy herbaceous vegetation can survive this treatment.

There are various tractor attachments that are used for mowing, beating, crushing, chopping, or shredding vegetation depending on the nature of the plant stand and goals of the project. The advantage in using this type of equipment is that selective plants may be targeted to achieve specific goals. For example, mowing is effective in reducing plant height to a desirable condition and it usually does not kill vegetation. Mowing is more effective on herbaceous than woody vegetation. On the other hand, a rolling cutter can kill woody non-sprouting vegetation by breaking stems at ground level but leave herbaceous vegetation. Mowing, beating, crushing, chopping, or shredding usually does not disturb the soil. Rocky soil and steep slopes may limit this use of equipment.

Debris management after a mechanical control treatment application is critical in fuel reduction projects. Vegetation material that is left onsite would dry and become more hazardous than before the treatment. Herbaceous material is usually not a problem, because it would decompose relatively fast depending on soil moisture, ambient humidity, and temperature. Woody vegetation should be piled and burned under acceptable fire management practices.

Efforts repeated every 21 days during the growing season can deplete the underground food supply of some perennials. This method would be required for at least a 3-year period to attain satisfactory control and would be considered only in areas where slope is less than 10 percent and where a small percentage of the vegetation consists of shrubs. This method would also weaken non-target species in treated areas.

C. Manual

Hand-operated power tools and hand tools are used in manual vegetation treatment to cut, clear, or prune herbaceous and woody species. In manual treatments, workers would cut plants above ground level; pull, grub, or dig out plant root systems to prevent subsequent sprouting and re-growth; scalp at ground level or remove competing plants around desired vegetation; or place mulch around desired vegetation to limit the growth of competing vegetation. Hand tools such as the handsaw, axe, shovel, rake, machete, grubbing hoe, mattock (combination of axe and grubbing hoe), brush hook, and hand clippers are used in manual treatments. Axes, shovels, grubbing hoes, and mattocks can dig up and cut below the surface to remove the main root of plants such as prickly pear and mesquite that have roots that can quickly resprout in response to surface cutting or clearing. Workers also may use power tools such as chain saws and power brush saws.

Manual methods are highly labor intensive, requiring periodic retreatment, ranging from every three weeks during the growing season to annually, depending on the target species. These methods have been successful in controlling annuals and biennials, but are ineffective in controlling creeping perennials.

D. Biological

Biological methods of vegetation treatment could employ grazing by cattle, sheep or goats, but would not include the use of invertebrates or microorganisms. BLM would only use cattle, sheep, or goats when grazing, which would not adversely affect listed, proposed, or candidate species. The use of grazing as a biological control agent would be conducted in accordance with BLM procedures in the *Use of Biological Control Agents of Pests on Public Lands* (DOI BLM 1990). Grazing cattle, sheep, or goats would control few plant species.

Biological control methods using cattle, sheep, or goats would avoid erosion hazard areas, areas of compactable soils, riparian areas susceptible to bank damage, and steep erodible slopes.

Biological control methods using cattle, sheep, or goats would be applied to treat areas for short periods. When considering the use of grazing animals as an effective biological control measure, several factors would be taken into consideration including:

- Target plant species present
- Size of the infestation of target plant species
- Other plant species present
- Stage of growth of both target and other plant species
- Palatability of all plant species present
- Selectivity of all plant species present by the grazing animal species that is being considered for use as a biological agent
- Availability of the grazing animal within the treatment site area
- Type of management program that is logical and realistic for the specific treatment site.

These factors would be some of the options taken when developing the individual treatment for a specific site.

Although discussed as biological agents, cattle, sheep, and goats are not truly biological agents, but are domestic animals used to control only the top growth of certain noxious weeds. The following are some advantages of using domestic animals, mainly sheep or goats, for noxious weed control: (1) they use weeds as a food source, (2) following a brief adjustment period, they sometimes consume as much as 50 percent of their daily diet of this species, (3) average daily gains of offspring grazing certain weed-infested pastures can sometimes be significantly higher than average daily gains of offspring grazing grass pastures, and (4) sheep or goats can be used in combination with herbicides.

Some of the disadvantages of using domestic animals are: (1) they also use non-target plants as food sources, (2) the use of domestic animals, like sheep or goats, requires a herder or temporary fencing, (3) the animals may be killed by predators such as coyotes, (4) heavy grazing of some weed species, such as leafy spurge, tends to loosen the stool of the grazing animals, (5) most weed species are less palatable than desirable vegetation and would cause overgrazing, (6) they may accelerate movement of nonnative plants through seed ingestion and excretion, and (7) domestic livestock may transmit parasites and/or pathogens to resident native wildlife species.

E. Prescribed Burning

Prescribed burning is the planned application of fire to wild land fuels in their natural or modified state, under specific conditions of fuels, weather, and other variables to allow

the fire to remain in a predetermined area and to achieve site-specific fire and resource management objectives.

Management objectives of prescribed burning include the control of certain species; enhancement of growth, reproduction, or vigor of certain species, management of fuel loads, and maintenance of vegetation community types that best meet multiple-use management objectives. Treatments would be implemented in accordance with BLM procedures in *Fire Planning* (DOI BLM 1987c), *Prescribed Fire Management* (DOI BLM 1988b), and *Fire Training and Qualifications* (DOI BLM 1987d).

Prior to conducting a prescribed burn, a written plan must be prepared that takes into consideration existing conditions (amount of fuel, fuel moisture, temperatures, terrain, weather forecasts, etc.) and identifies people responsible for overseeing the fire. Natural fire that is allowed to burn also needs to be carefully monitored to ensure that it would not threaten communities, other values to be protected, and ecosystems. This may require special expertise such as the fire use management teams that have been developed to support the overall fire management program. Planning and implementation for a specific prescribed fire project entails the following four phases:

Phase 1. The Information/Assessment Phase includes identifying the area to be treated, inventorying and assessing site specific conditions (live and dead vegetation densities, dead down woody fuels loadings, soil types, etc.), analyzing historic and present fire management, identifying resource objectives from Land Use Plans, and analyzing and complying with NEPA.

Phase 2. The Prescribed Fire Plan Development Phase includes developing site specific prescribed fire plan to BLM Standards. It also includes reviews of the plan and obtaining plan approval from local BLM field office administrators.

Phase 3. The Implementation Phase includes ignition of the fire according to the plan's prescribed parameters. Implementation includes prescribed fire boundary area preparation to ensure that the fire remains in prescribed boundaries. Site preparation may take place in the form of fire line construction, road improvements, wildlife and stock trails, tree limbing, and debris clearing.

Phase 4. The Monitoring and Evaluation Phase includes assessment and long-term monitoring of the fire treatment to ensure that the prescribed fire has met the objectives of the approved prescribed fire plan. BLM fire monitoring policy is described in the BLM prescribed *Fire Management Handbook*, October 2003, Chapter 2 and Appendix 7. This policy applies to prescribed fire and wildland fire use.

F. Cultural Resources

Should cultural and/or paleontological resources be encountered during project ground-disturbing activities, work will cease in the area of the discovery, and the BLM will be notified immediately. Work may not resume until written authorization to proceed is issued by BLM.

The management of cultural resources on BLM land must be in compliance with several federal laws, including the Antiquities Act of 1906; the NHPA of 1966, as amended; the NEPA of 1969; EO 11593 *Protection and Enhancement of the Cultural Environment*, the FLPMA of 1976; the American Indian Religious Freedom Act of 1978; the ARPA of 1979; the NAGRPA of 1990; EO 13007 *Indian Sacred Sites*, and EO 13287 *Preserve America*. In addition, the BLM manages its cultural resources according to BLM Manual 8100 *Fundamentals for Managing the Cultural Program* and Arizona BLM Handbooks 8110-H *Guidelines for Identifying Cultural Resources* and 8120-H *Guidelines for Protecting Cultural Resources*.

Restrict public information about the locations of sites that are not allocated to public use, as allowed by law and regulation.

Ensure that all proposed undertakings and authorizations are reviewed and conducted in compliance with applicable federal laws including Section 106 of the National Historic Preservation Act.

Complete consultations with the California SHPOs prior to project implementation, as necessary.

Ensure that information on Native American religious and cultural issues receives good faith consideration during decision making and that government-to-government consultation procedures are carried out as appropriate for each proposed action.

G. Paleontological Resources

If vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, the user/operator shall suspend all operations that further disturb such materials and immediately contact the authorized officer. User/operators shall not resume until written authorization to proceed is issued by the authorized officer. The authorized officer would evaluate the discovery and inform the operator of actions that would be necessary to prevent loss of significant scientific values. The user/operator shall be responsible for the cost of any mitigation required by the authorized officer. Upon verification from the authorized officer that the required mitigation has been completed, the operator shall be allowed to resume operations.

H. Special Designation Areas

Guidelines and operating procedures for all management activities in WAs are provided in BLM Manual 8560 *Management of Designated Wilderness Areas* and in Wilderness Management Plans, where completed for specific WAs.

Management guidance for WSAs is provided in BLM Manual 8550 *Interim Management Policy and Guidelines for Lands under Wilderness Review*. Approved land use plans specify management procedures for areas identified in the land use plan to be managed for wilderness characteristics.

Management activities along NSTs would be conducted to assure that no adverse effects occur to those resources and values identified in the legislation designating the trail.

ACECs are established through the land use planning process. The desired conditions and management prescriptions for these special areas would be considered in implementing management activities.

Wildland Fire Management

A. Appropriate Management Response

The appropriate management response concept represents a range of available management responses to wildland fires. Responses range from full fire suppression to managing fires for resource benefits (fire use). Management responses applied to a fire would be identified in the fire management plans and would be based on objectives derived from the land use allocations; relative risk to resources, the public and fire fighters; potential complexity; and the ability to defend management boundaries. Any wildland fire can be aggressively suppressed, and any fire that occurs in an area designated for fire use can be managed for resource benefits if it meets the prescribed criteria from an approved fire management plan.

B. Fire Suppression Actions

Suppression tactics would be utilized that limit damage or disturbance to the habitat and landscape. No heavy equipment would be used (such as dozers), unless approved by the Field Office Manager.

Use of fire retardants or chemicals adjacent to waterways would be accomplished in accordance to the *Environmental Guidelines for Delivery of Retardant or Foam Near Waterways* (Interagency Standards for Fire and Aviation Operations 2003, pages 8-13).

The general and species-specific Conservation Measures listed in Appendix D would be implemented to the extent possible to minimize adverse effects to federally listed, proposed, or candidate species occurring within the action area.

For fire suppression activities, a protocol for consultation would be developed as a part of the Biological Opinion (BO). This programmatic consultation would contain conservation measures and prescriptions for use in fire suppression activities. Emergency consultation should only be needed in the future, if suppression actions fall outside of these prescriptions/measures. The BO would outline coordination needs for emergency response actions that may affect a listed/proposed species and/or critical habitat. The following protocol would apply: BLM would contact the appropriate USFWS biologist as soon as practical once a wildfire starts and a determination is made that a federally protected species and/or its habitat could be affected by the fire and/or fire suppression activities. USFWS would work with BLM during the emergency response to apply the appropriate conservation measures. When conservation measures cannot be applied during the suppression activities, BLM would, after the fact, need to consult on any suppression actions that may have affected the federally protected species or its habitat. If conservation measures are adhered to, BLM would report on the actions taken and effects to the species and its habitat following the fire, but no further consultation on that incident would be required.

In WAs, WSAs, and areas being managed for wilderness characteristics, minimum impact suppression tactics (MIST) would be applied and coordinated with WA management objectives and guidelines when fire suppression actions are required (*Interagency Standards for Fire Operations* BLM 2003).

C. Cultural Resources

All known cultural resources would be protected from disturbance to the extent possible.

Should cultural resources be encountered during wildland fire suppression, the BLM or appropriate resource advisor will be notified as soon as possible.

D. Paleontological Resources

If vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, during wildland fire suppression, the BLM or appropriate resource advisor will be notified as soon as possible.

Discretionary Construction Activities

The following measures would reduce fugitive dust impacts:

1. All unpaved construction areas shall be sprinkled with water or other acceptable San Diego APCD dust control agents during dust-generating activities to reduce dust emissions. Additional watering or acceptable APCD dust control agents shall be applied during dry weather or windy days until dust emissions are not visible.

2. Trucks hauling dirt and debris shall be covered to reduce windblown dust and spills.

3. On dry days, dirt or debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.

4. On-site stockpiles of excavated material shall be covered or watered.

5. Water rock materials undergoing rock-crushing processing at sufficient frequency. Automatic water or mist or sprinkler system should be installed in areas of rock crushing and conveyor belt systems.

6. Use low pollutant-emitting construction equipment.

7. Equip construction equipment with prechamber diesel engines (or equivalent) together with proper maintenance and operation to reduce emissions of nitrogen oxide, to the extent available and feasible.

8. Use electrical construction equipment, to the extent feasible.

A. Cultural Resources

All known cultural resources would be protected from disturbance.

Should cultural resources be encountered during project ground-disturbing activities, work will cease in the area of the discovery, and the BLM will be notified immediately. Work may not resume until written authorization to proceed is issued by BLM.

The management of cultural resources on BLM land must be in compliance with several federal laws, including the Antiquities Act of 1906; the NHPA of 1966 as amended; the NEPA of 1969; EO 11593 *Protection and Enhancement of the Cultural Environment*, the Federal Land Policy and Management Act of 1976; the American Indian Religious Freedom Act of 1978; the ARPA of 1979; the NAGPRA of 1990; EO 13007 *Indian Sacred Sites*, and EO 13287 *Preserve America*. In addition, the BLM manages its

cultural resources according to BLM Manual 8100 through 8170, and in accordance with the statewide protocol from the California SHPO and other guidelines from the SHPO.

Restrict public information about the locations of sites that are not allocated to public use, as allowed by law and regulation.

Ensure that all proposed undertakings and authorizations are reviewed and conducted in compliance with applicable federal laws including Section 106 of the NHPA.

Complete consultations with the California SHPOs prior to project implementation, as necessary.

Ensure that information on Native American religious and cultural issues receives good faith consideration during decision making and that government-to-government consultation procedures are carried out as appropriate for each proposed action.

B. Paleontological Resources

If vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, the user/operator shall suspend all operations that further disturb such materials and immediately contact the authorized officer. User/operators shall not resume until written authorization to proceed is issued by the authorized officer. The authorized officer would evaluate the discovery and inform the operator of actions that would be necessary to prevent loss of significant scientific values. The user/operator shall be responsible for the cost of any mitigation required by the authorized officer. Upon verification from the authorized officer that the required mitigation has been completed, the operator shall be allowed to resume operations.

C. Special Designation Areas

Guidelines and operating procedures for all management activities in WAs are provided in BLM Manual 8560 *Management of Designated Wilderness Areas*, and in Wilderness Management Plans, where completed for specific WAs.

Management guidance for Wilderness Study Areas is provided in BLM Manual 8550 *Interim Management Policy and Guidelines for Lands under Wilderness Review*. Approved land use plans specify management procedures for areas identified in the land use plan to be managed for wilderness characteristics.

Management activities along NSTs would be conducted to assure that no adverse effects occur to those resources and values identified in the legislation designating the trail.

ACECs are established through the land use planning process. The desired conditions and management prescriptions for these special areas would be considered in implementing management activities.

D. Visual Resources

There are numerous design techniques for Visual Resources that can be used to reduce the visual impacts from surface-disturbing projects. These techniques should be used in conjunction with BLM's visual resource contrast rating process wherein both the existing landscape and the proposed development or activity are analyzed for their basic elements of form, line, color, and texture. Design techniques are discussed in the BLM *VRM Manual* (MS 8400) in terms of fundamentals and strategies. The fundamentals and strategies are all interrelated, and when used together, can help resolve visual impacts from proposed activities or developments.

Design fundamentals are general design principles that can be used for all forms of activity or development, regardless of the resource value being addressed. Applying these three fundamentals will help solve most visual design problems:

- Proper siting or location
- Reducing unnecessary disturbance
- Repeating the elements of form, line, color, and texture

Design strategies are more specific activities that can be applied to address visual design problems. Not all of these strategies will be applicable to every proposed project or activity:

- Color selection
- Earthwork
- Vegetative manipulation
- Structures
- Reclamation/restoration
- Linear alignment design considerations

Livestock Grazing and Wildlife Habitat Activities

A. Typical Range or Habitat Improvements

Following is a discussion of typical design features, construction practices, and implementation procedures for range or habitat improvements that could be constructed following approval of the RMP/ ROD. The extent, location, and timing of such actions would be based on allotment-specific management objectives adopted through the evaluation process, interdisciplinary development and analysis of proposed actions, and funding.

Fences: All new fences would be built to BLM manual specifications. Fences would normally be constructed to provide exterior allotment boundaries, divide allotments in pastures, protect streams, and control livestock. Most fences would be three-wire or four-strand with steel posts spaced 16.5 feet apart with intermediate wire stays. Existing fences that create wildlife movement problems would be modified. Proposed fence lines would usually not be bladed or scraped. Gates or cattle guards would be installed where fences cross existing roads.

All new or reconstructed fences in big game habitat, including bighorn sheep habitat, would meet specifications in BLM Handbook 1741-1 or be designed to allow for the movement of big game, including bighorn sheep. BLM would consult with CDFG on the design and location of new fences.

Pipelines: Wherever possible, water pipelines would be buried. The trench would be excavated by a backhoe, ditch witch, or similar equipment. Plastic pipe would be placed in the trench and the excavated material would be used to backfill. Most pipelines would have water tanks spaced as needed to achieve proper livestock distribution.

Wildlife Waters and Reservoirs: Stock pond sites would be selected based on available watershed and hydrologic information. All applicable state laws and regulations would be followed. Water developments would include design features to ensure safety and accessibility to water by desirable wildlife. These features will include ramps to allow wildlife to escape, should they become trapped. Also, waters built in areas adjacent or in Peninsular bighorn sheep habitat will be designed to preclude shallow, vegetated edges that provide breeding habitat for *Culicoides* midges, an invertebrate disease vector for bluetongue virus.

Wells: Well sites would be selected based on geologic reports that predict the depth to reliable aquifers. All applicable state laws and regulations that apply to groundwater would be observed.

B. Supplemental Feedings

Supplemental feed must be authorized in advance. Supplemental feed means a feed that supplements the forage available from the public lands and is provided to improve livestock nutrition or rangeland management.

If used, salt must be placed at least 0.25 mile from water sources to disperse impacts.

Mining Activities

A. Reasonable Foreseeable Development

This appendix provides a summary of the exploration history, current lease status, and 20-year projections for reasonable foreseeable development (RFD) of leasable, locatable, and salable minerals in the Planning Area.

Three factors of analysis are considered when making mineral determinations in RMPs: (1) the potential for occurrence and development of mineral resources, (2) immediate and cumulative impacts due to RFD of mineral resources, and (3) the need to apply constraints or restrictions, known as stipulations, to the determination (DOI BLM 1985). The first factor, mineral resource potential, is discussed in the MRPR. The second factor, RFD, is discussed in this appendix. The third factor, stipulations, will be analyzed and considered in the RMP.

Leasable Minerals

a. Oil and Gas

There are no documented proven reserves of oil and gas in the Planning Area and currently only minor leasing interest. No drilling activity has occurred. The RFD for fluid mineral development estimates that six exploratory wells would be drilled within the next 15 years.

b. Carbon Dioxide and Helium

Areas having moderate CO_2/He potential in the Planning Area are assumed to be correlative with areas of moderate oil and gas potential. So far, there has been no CO_2/He exploration in the Planning Area and no leasing interest. The RFD for CO_2/He development estimates that no oil and gas exploratory wells drilled in the Planning Area would discover CO_2/He reserves, and no exclusively CO_2/He exploratory wells would be drilled. The evaluation process for the RFD assumed that an increase in oil and gas drilling would result in production tests in two oil and gas exploratory wells without

recovery of economic concentrations of CO_2/He. Therefore, there will be no disturbance or impact in the Planning Area from development of a CO_2/He field.

c. Geothermal

So far, there has been no geothermal exploration in the Planning Area and no leasing interest. There are no geothermal energy leases in the Planning Area and no indications of future leasing activity. The RFD for geothermal resource development in the Planning Area expects that no leasing, exploration, or development would occur in the next 15 years. There is no foreseeable disturbance to public lands from geothermal resource development in the Planning Area in the next 15 years.

d. Coal

There are no coal deposits reported in the Planning Area.

e. Sodium

There has been no development of sodium resources and no indications for future leasing and development activity. The absence of leasing activity for sodium resources in the Planning Area is likely due to the limited demand for sodium resources and the considerable expense to explore and develop them. The RFD for sodium resource development expects that no leasing, exploration, or development will occur in the Planning Area in the next 15 years. There is no foreseeable disturbance to public lands from sodium resource development in the Planning Area in the next 15 years.

Locatable Minerals

Mineral districts in the Planning Area are regions of known occurrence and high potential of locatable metallic and nonmetallic mineral resources. The location of these mineral districts was identified in the mineral potential maps section of the RMP. There are no active locatable mineral mines currently operating in the Planning Area

The RFD for locatable mineral resources in the Planning Area indicates that some exploration would occur in the next 15 years with two underground locatable mineral deposits being developed. The following assumptions were considered when evaluating the RFD for locatable mineral resources in the Planning Area:

- There would be two new locatable metallic lode discoveries in the next 15 years.
- Each new locatable metallic mineral discovery would include an underground mine, occupy approximately 10 surface acres, and include mining waste rock piles. In addition, these mines would produce between 25,000–50,000 tons of ore per year.

- Each new locatable non-metallic mineral discovery would include a prospecting pit, occupy approximately <1 surface acre, include mining waste rock piles. In addition, these mines would produce less than 100 pounds of gems per year.

- Where applicable, commodity ore would be transported offsite via surface roads for processing.

- The land surface would not be reclaimed during the life of the mine.

There is some foreseeable disturbance due to mining activities on public lands in the Planning Area in the next 15 years. Activities associated with the two new underground mines would impact up to 20 acres, including placement of waste rock piles. Activities associated with a gemstone mine would be small (less than one acre). Disturbance of the land surface would require reclamation at the end of the mine life.

Salable Minerals

Aggregate and Stone

Known occurrences (quarries and pits), prospects, and potential locations for salable mineral resources were identified in the mineral potential maps. Most locations are actively used for aggregate for construction operations or in some cases, for decorative stone or rip rap. The following assumptions were considered when evaluating the RFD for salable mineral resources in the Planning Area:

- The demand for salable minerals would increase during the next 15 years as population increases stimulate construction and infrastructure development.

- Based on past experience and projected future demand, no new pits / mines would be permitted / contracted in the next 15 years.

Remaining mines would require reclamation at the end of the life of the pits.

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APPENDIX E

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Grazing Criteria

1) Peninsular Bighorn Sheep Critical Habitat

- Is any part of the allotment located within Peninsular Bighorn Sheep Critical Habitat?
- Is the allotment more than ~30 percent located within Peninsular Bighorn Sheep Critical Habitat?
- Are the areas of the allotment still open after excluding Peninsular bighorn sheep?

2) What vegetation type/community is dominant on the allotment?

- Is the majority of the allotment composed of a chaparral vegetation community?
- Is critical habitat usable by cattle (is the area level, not steep?)?

3) Quino Checkerspot Butterfly Recovery Area

- Is any part of the allotment located within the Quino Checkerspot Recovery Area?
- Is the allotment more than ~30 percent located within the Quino Checkerspot Recovery Area?
- Are the areas of the allotment still open after excluding the Quino Checkerspot Recovery Area usable by cattle (is the area level, not steep?)?

4) Southwestern Willow Flycatcher Habitat

- Is there potential or known habitat for the federally endangered southwestern willow flycatcher within and/or near the allotment?
- Have southwestern willow flycatchers been located within or near the allotment?

5) Arroyo Toad Habitat

- Is there potential or known habitat for the federally endangered arroyo toad within and/or near the allotment?
- Have arroyo toads been located within or near the allotment?

6) Are there sufficient range improvements on the allotment to support grazing?

- Is the size of the allotment practical to allow grazing?
- Will the allotment support any number of cattle, while allowing 15 AUMs for deer?
- Are there sufficient livestock improvements on the allotment to support any number of cattle?
- If new range improvements or maintenance is needed on existing range improvements, would the cost/benefit ratio be appropriate?

7) Water Sources/Topography

- Are there sufficient water sources on the allotment to begin with?
- How many water sources are left on the allotment once Critical Habitat is excluded?
- Are the water sources left after exclusion of Critical Habitat reliable water sources?
- Are the water sources left after exclusion of Critical Habitat accessible to cattle?
- Are the available areas within the allotment too steep for cattle to utilize (greater than a 50-percent slope)?

8) Rangeland Health Standards

- Can all four of the Fallback Rangeland Health Standards (soils, riparian/wetland, stream function, and native species) be met on the allotment?
- After Rangeland Health Assessments are conducted, are any of the allotments Category 1 (Areas where one or more standards are not being met, and significant

progress is not being made toward meeting the standard(s), and livestock grazing is a significant contributor to the problem)?

9) Are there parties interested in the allotment?

- How many years has the allotment been vacant with no interested parties coming forward?

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APPENDIX F

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Land-Tenure Adjustment
Eastern San Diego County Planning Unit

Disposal

The public lands described below, located within eastern San Diego County, may meet the criteria outlined in FLPMA for BLM to use in determining suitability for disposal through sale or exchange, subject to NEPA requirements. They do not lie within designated critical habitat, but could contain other sensitive resources pending further evaluation.

All measured from the San Bernardino Base and Meridian:

	Acres
(A) San Felipe Valley Area	
T.11S., R.4E.,	
sec. 33, NW¼SW¼	40.00
(B) McCain Valley/Boulevard Area	
T.17S., R.7E.,	
sec. 8, SW¼SE¼	40.00
sec. 17, NW¼NE¼	40.00
sec. 21, NE¼, NE¼NW¼	200.00
(C) La Posta/Interstate 8 Area	
T.17S., R.6E.,	
sec. 4, lots 8, 10, 12	46.73
sec. 9, N½NW¼, SE¼ NW¼	120.00
TOTAL ACRES:	**486.73**

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APPENDIX G

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COPY

DONATION AGREEMENT
(Cottonwood Canyon)

This DONATION AGREEMENT (**"Agreement"**) is made as of the _____ day of _____, 2006, by and between **The Conservation Fund**, a Maryland non profit public benefit corporation (**"TCF"**), and the **BUREAU OF LAND MANAGEMENT (**"**BLM**"**)**, an agency of the Department of Interior, United States of America.

RECITALS

WHEREAS, TCF and BLM have identified certain real property in eastern San Diego County located in the Cottonwood Canyon area as possessing conservation values appropriate for protection; and

WHEREAS, TCF has acquired certain real property commonly known as the Daley Ranch/ Cottonwood Canyon Property" which is located in eastern San Diego County, comprised of approximately 1800 acres, identified by the County of San Diego Assessor's Parcel Numbers , 337-040-21, 337-070-01, 337-080-01, 337-080-02, 337-080-03, 337-080-04, 337-080-05, 337-090-01, 337-100-01, 337-100-03, 337-110-01, 337-110-02, 337-110-03, 337-110-04, and more particularly described on **Exhibit A** attached hereto and incorporated herein by reference (**"Property"**); and

WHEREAS, TCF acquired the Property with assistance from Resources Legacy Fund Foundation (**"RLFF"**), which provided TCF with a grant (Number 2005-0464) that funded the entire purchase price for the Property (**"Grant"**); and

WHEREAS, it is a requirement under the Grant (**"Grant Condition"**) for TCF to ensure the permanent protection of the Property's natural resources, and more specifically, to (a) ensure that no structure, road or other human "improvements" will be placed on the Property, or in rare exceptions, where appropriate, only to the extent minimally necessary and in all cases consistent with the overriding purposes of preserving the Property's natural resources; (b) provide for the elimination of any mining, logging (except in rare cases where needed for restoration purposes) and grazing to the extent practical; and (c) provide for the permanent protection of water and key natural resources; and

WHEREAS, TCF intends to donate the fee interest in the property to the United States of America through its managing agency, BLM, subject to the terms and conditions of this agreement; and

WHEREAS, TCF's and RLFF's vision for the future use and management of the Property in a manner that ensures permanent protection of natural resources as described above is consistent with BLM's intent for its future use and management of the Property; and

WHEREAS, it is the intention of TCF and RLFF for TCF to satisfy the Grant Condition by donating the Property to the United States, subject to the assurance of BLM to manage and administer the Property in a manner consistent with this Agreement; and

WHEREAS, the agreements of BLM in this Agreement are a condition to TCF's donation of the Property to the United States and to RLFF's making the Grant to TCF for its acquisition of the Property; and

WHEREAS, BLM desires to accept TCF's donation of the Property subject to the terms and conditions set forth below in this Agreement;

NOW, THEREFORE, based on the foregoing Recitals, the parties hereto agree as follows:

AGREEMENTS

1. **PURPOSE.** Except for activities that may be undertaken to restore and enhance habitat and natural processes on the Property, or to perform law enforcement, or fire prevention/suppression activities that are essential to BLM's mission, and provided those activities are executed in a manner to minimize adverse impacts to the natural resources contained therein, BLM intends to preserve the Property in essentially its current and natural condition, and manage the Property in a manner consistent with (a) the goals of maintaining the existing ground cover, protecting its native habitat to emphasize the protection and enhancement of sensitive species and open space values, preserving groundwater and existing water rights, allowing natural ecological processes to operate freely, and providing public use opportunities compatible with maintenance of the ecological integrity of the Property, and (b) RLFF and TCF's vision for the future use and management of the Property as described more particularly in the Recitals set forth above

2 **MANAGEMENT OF THE PROPERTY.**

(a) Land Use Planning BLM shall (i) manage the Property in accordance with the Eastern San Diego County Management Framework Plan (the "**Eastern San Diego County Resource Management Framework Plan, ESDCMFP**"), April 1981, and (ii) maintain in perpetuity a copy of this Agreement with the ESDCMFP (and any successor management plan thereto), in the El Centro Field Office and in the BLM California State Office, and/or in such other BLM future offices having jurisdiction over the management of the Property. In accordance with 43 U.S.C 1712, any change in the ESDCMFP shall allow an opportunity for public involvement and comment on the formulation of plans and programs to manage public lands, including the Property In that regard, BLM shall provide TCF reasonable advance written notice of any proposals to modify the ESDCMFP or any other management plan or document relating to the management or use of the Property and shall provide TCF with the opportunity to fully participate in such planning process as an interested party. In any public proceedings respecting any proposed modification to the ESDCMFP or any other management plan or document relating to the management or use of the Property, BLM shall fully disclose and describe the existence and effect of this Agreement and the intentions of RLFF and TCF to effect the permanent protection of the natural resources relating to the Property in connection with TCF's donation of the Property to the United States In addition, BLM shall use its best efforts to ensure that any modification to the ESDCMFP and any other management plan or document relating to the management or use of the Property be consistent with the purposes set forth in **Paragraph 1** of this Agreement and the intentions of RLFF and TCF as described more fully in the Recitals set forth above

(b) Applicable Management Prescriptions. BLM's management prescriptions for the Property shall be consistent with the purposes set forth in Paragraph 1 of this Agreement, the ESDCMFP, and other applicable plans and resource management guidelines for resources

(i) Construction of Roads, Structures, and Other Improvements. BLM shall not construct roads, structures, and other improvements on the Property, except to the extent minimally necessary and consistent with the restoration and protection of the natural resources

(ii) Motorized Vehicle Use Existing roads across the Property may be used for fire protection/suppression that are essential to that purpose, namely control and suppression of wildfires, and provided those activities are executed in a manner to minimize adverse impacts to the natural resources. Through future resource management planning subsequent to the ESDCMFP, BLM shall establish management guidance for motorized vehicle use on the Property which is consistent with the purposes set forth in Paragraph 1 of this agreement Such successor management plan shall evaluate the necessity of the existing roads, and those not necessary will be abandoned and restored. Unless necessary for fire protection / suppression or law enforcement activities, BLM agrees that existing roads on the Property will not be maintained or improved prior to completing route designation.

(iii). Groundwater Extraction or other Water Diversions. Consistent with the protection of watershed and natural values outlined in the ESDCMFP, BLM agrees that the protection of hydrologic and aquatic systems is a key element in the conservation of the Property and shall take actions consistent with these criteria

3. **AUTHORITY** BLM is entering into this Agreement under the following authorities:

(a) Section 102(a)(8) of the *Federal Land Policy and Management Act* (**"FLPMA"**), October 21, 1976 (U.S C 1701, *et* seq.), which provides, where appropriate, for the preservation and protection of public lands in their natural condition that will provide food and habitat for fish and wildlife; and

(b) Section 307(b) of FLPMA, which allows the Secretary of Interior to enter into agreements involving the management and protection of public lands.

4. **ADMINISTRATION**. Nothing in this Agreement shall be construed as affecting the authority of BLM or as requiring any actions inconsistent with the authority and obligations of BLM pursuant to its statutes, regulations and land-use plans, or to require BLM to obligate or expend any funds. Conflicts between the participants concerning procedures under this Agreement which cannot be resolved at the operational level will be referred to successively higher levels, as necessary, for resolution

5. **ENFORCEABILITY**. BLM recognizes the intent of RLFF and TCF as set forth herein. Subject to all applicable laws, policies and procedures and the provisions set forth above, BLM shall administer the Property in accordance with the intent of RLFF and TCF as set forth in the Recitals above and the purposes set forth in **Paragraph 1** above and the other specific provisions set forth above Should BLM not administer the Property in accordance with its obligations in this Agreement, TCF shall be entitled to pursue any and all legal remedies available in equity and law. If a dispute arises with respect to whether BLM has satisfied its obligations under this Agreement, the parties shall meet informally within the thirty (30) day period after the dispute arises in a good-faith effort to resolve the dispute before TCF pursues any other legal or equitable remedies This Agreement is not to be construed in any way as providing a right of reverter or any other right or power that allows for a reversion of the Property from the United States to TCF.

6. **COUNTERPARTS**. This Agreement may be signed in original counterparts each of which shall be considered an original and which together will constitute one and the same agreement

7. **TERMINATION.** This Agreement may be terminated only by an agreement in writing signed by both parties

IN WITNESS WHEREOF, the parties enter into this Agreement as of the first date set forth above

The Conservation Fund,
a Maryland nonprofit public benefit corporation

By _____ Date MARCH 30, 2006
(Signature of Authorized Officer) R.L. Erdmann, a/k/a Richard L Erdmann

Title: Sr Sec. V.P.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District

By: _____ Date 4/13/06
Vicki Wood

Title: Field Manager
El Centro Field Office

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of CALIFORNIA

County of IMPERIAL

On 4-13-06 (Date) before me, MARIA J. GARCIA, NOTARY PUBLIC (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared VICKI WOOD********** (Name(s) of Signer(s))

☐ personally known to me
XXproved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument

MARIA J GARCIA
Commission # 1384555
Notary Public - California
Imperial County
My Comm. Expires Nov 16, 2006

WITNESS my hand and official seal

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document

Description of Attached Document

Title or Type of Document: DONATION AGREEMENT LETTER

Document Date: 4-11-06 Number of Pages: 4

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name:

☐ Individual
☐ Corporate Officer
Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

Signer's Name:

☐ Individual
☐ Corporate Officer
Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

© 1995 National Notary Association • 8236 Remmet Ave. P.O. Box 7184 • Canoga Park, CA 91309-7184 Prod. No. 5907 Reorder: Call Toll-Free 1-800-876-6827

COMMONWEALTH
~~STATE~~ OF VIRGINIA)SS
COUNTY OF Arlington)

On MARCH 30, 2006, before me, GLORIA J. POMPA, Notary Public, personally appeared Richard L. Erdmann a/k/a R.L. Erdmann, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(~~s~~) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~) and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~) or the entity upon behalf of which the person(~~s~~) acted, executed the instrument

WITNESS my hand and official seal

Signature

My Commission Expires: 3/31/06

This area for official notarial seal

Notary Name: GLORIA J. POMPA

Notary Phone: 703-908-5818

Notary Registration Number: COMMONWEALTH AT LARGE

County of Principal Place of Business: Arlington, VA

LEGAL DESCRIPTION

Real property in the , County of San Diego, State of California, described as follows:

PARCEL 1:

THE WEST HALF, THE WEST HALF OF THE NORTHEAST QUARTER AND THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 16, TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA

EXCEPTING THEREFROM ALL OIL, GAS, OIL SHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND OTHER MINERAL DEPOSITS CONTAINED IN SAID LANDS. FURTHER EXCEPTING THE RIGHT TO DRILL FOR AND EXTRACT SUCH DEPOSITS OF OIL AND GAS, OR GAS, AND TO PROSPECT FOR, MINE AND REMOVE SUCH DEPOSITS OF OTHER MINERALS FROM SAID LANDS AND TO OCCUPY AND USE SO MUCH OF THE SURFACE OF SAID LANDS AS MAY BE REQUIRED THEREFORE, AS RESERVED IN A DEED RECORDED JANUARY 25, 1960, SERIES 1, BOOK 1960, RECORDER'S FILE/PAGE NO 15434 OF OFFICIAL RECORDS OF SAN DIEGO COUNTY, CALIFORNIA

PARCEL 2:

THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 2; AND THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 11, TOWNSHIP 14 SOUTH, RANGE 5 EAST SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN DEED TO BARBARA A EINER, RECORDED SEPTEMBER 30, 1969 AS DOCUMENT NO 178596 OF OFFICIAL RECORDS, DESCRIBED AS FOLLOWS:

THAT PORTION OF SAID SECTION 2, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 2; THENCE NORTH 09 DEGREES 25'11" EAST ALONG THE WEST LINE OF SAID SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER TO THE NORTHWEST CORNER THEREOF; THENCE ALONG THE NORTHERLY LINE OF THE SOUTHWEST QUARTER OF SOUTHEAST QUARTER OF SAID SECTION 2, NORTH 89 DEGREES 09'37" WEST 87.02 FEET TO THE SOUTHWEST QUARTER OF LAND DESCRIBED IN PARCEL 2 OF DEED TO BARBARA ABNEY EINER, RECORDED JULY 28, 1969 AS FILE NO. 135946 OF OFFICIAL RECORDS; THENCE CONTINUING NORTH 89 DEGREES 09'37" WEST 95 48 FEET; THENCE SOUTH 00 DEGREES 35'48" EAST 1337 40 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL 3:

THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER IN SECTION 15; THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER IN SECTION 15; ALL IN TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 4:

THE NORTH HALF OF THE NORTHEAST QUARTER; THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER; THE WEST HALF OF THE SOUTHWEST QUARTER, ALL IN SECTION 15, TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF

PARCEL 5:

THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 15, TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA,
ACCORDING TO THE OFFICIAL PLAT THEREOF

PARCEL 6:

THE SOUTH HALF OF THE NORTHEAST QUARTER; THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER IN SECTION 10, TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF

PARCEL 7:

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER; THE SOUTH HALF OF THE SOUTHEAST QUARTER; THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER IN SECTION 10; AND THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER; THE SOUTH HALF OF THE NORTHWEST QUARTER; THE NORTH HALF OF THE SOUTHWEST QUARTER; THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER; THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER, THE SOUTH HALF OF THE NORTHEAST QUARTER; THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER IN SECTION 11; AND THE WEST HALF OF THE NORTHWEST QUARTER IN SECTION 12, ALL IN TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF

PARCEL 8:

THE EAST HALF OF THE NORTHEAST QUARTER IN SECTION 16, TOWNSHIP 14 SOUTH, RANGE 5 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF

PARCEL 9:

AN EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND PUBLIC UTILITIES AS SET FORTH IN THAT CERTAIN "GRANT OF EASEMENT" RECORDED _____, AS INSTRUMENT NO 2006-_____, OF OFFICIAL RECORDS OF SAN DIEGO COUNTY, CALIFORNIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 S. 4th Street
El Centro CA 92243

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

PRIORITY MAIL
Postage and Fees Paid
Bureau of Land Management
Permit No. G-76