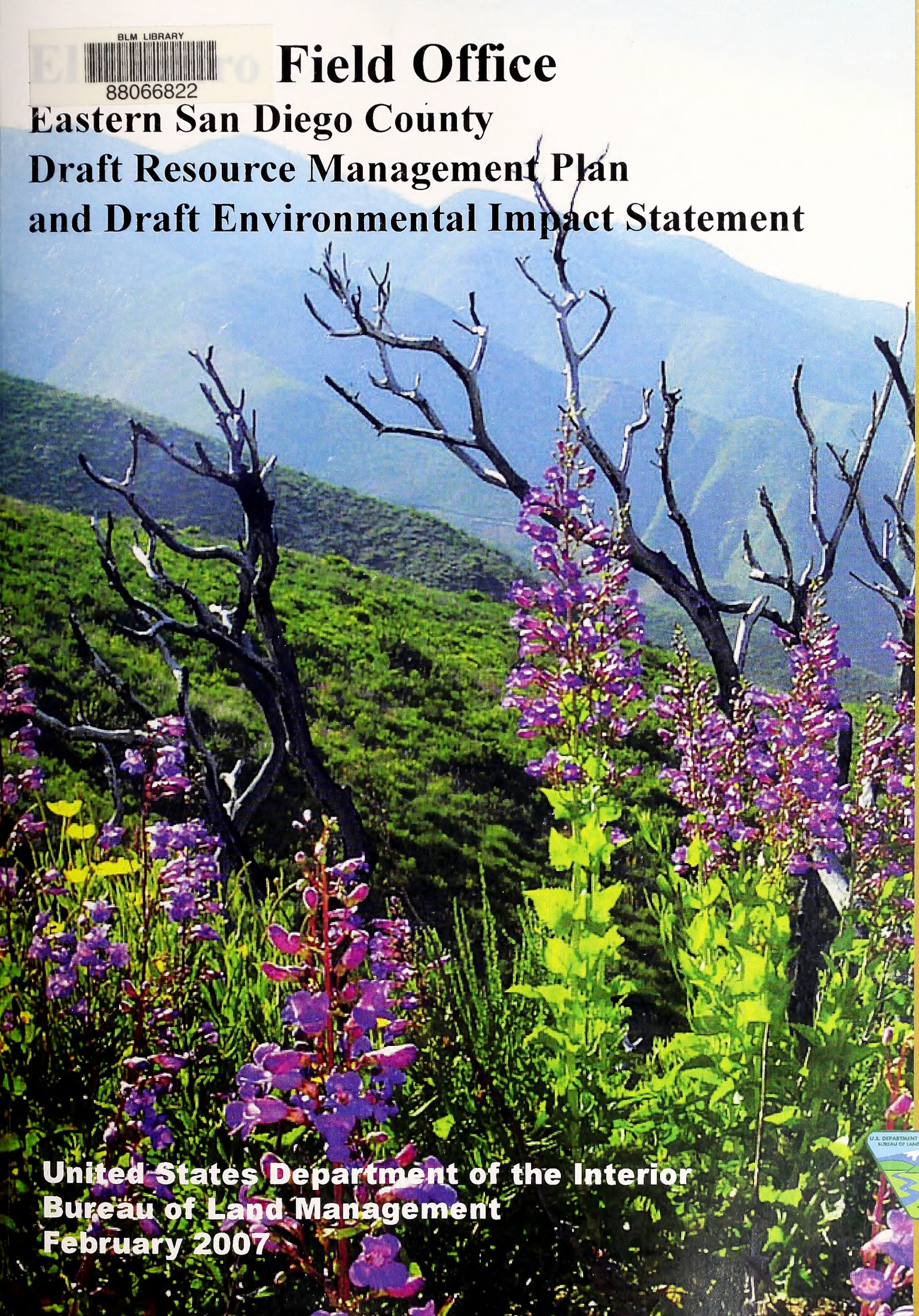
El Centro Field Office

Eastern San Diego County
Draft Resource Management Plan
and Draft Environmental Impact Statement



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El Centro Field Office

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Eastern San Diego County
Draft Resource Management Plan
and
Draft Environmental Impact Statement

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

February 2007

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ABSTRACT

The Eastern San Diego County Draft Resource Management Plan and Draft Environmental Impact Statement (DRMP/DEIS) describes and analyses five alternatives for managing approximately 103,303 acres of Bureau of Land Management (BLM)-administered land in Eastern San Diego County, California. Information provided by the public, other agencies and organizations, and BLM personnel has been used to develop and analyze the alternatives in the DRMP/DEIS. *Alternative A* is the No-action Alternative and represents continuation of current management. *Alternative B,* the Mixed Alternative, provides for visitation and development within the Planning Area, while ensuring that resource protection is not compromised. *Alternative C,* the Conservation Alternative, generally places emphasis on the preservation of the Planning Area's natural and cultural resources through limited public use and discontinuation of livestock grazing. *Alternative D,* the Development Alternative, generally provides more opportunities for development such as renewable energy, transportation, and utility right-of-ways, as well as enhanced recreational opportunities. *Alternative E,* the Preferred Alternative, provides for a balance between authorized resource use and the protection and long-term sustainability of sensitive resources. Major issues addressed in the DRMP/DEIS include management of recreation and public access, designation and management of Special Area Designations, management of visual resources, and protection of cultural resources.

MISSION STATEMENT

The Bureau of Land Management is responsible for the balanced management of the BLM-administered lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific, and cultural values.

Dear Reader:

Enclosed is the Eastern San Diego County Draft Resource Management Plan and Draft Environmental Impact Statement (DRMP/DEIS) for your review and comment. This document describes five alternative land use plans, including the No-action Alternative and a Preferred Alternative, for management of the Bureau of Land Management (BLM)-administered public lands within the Planning Area boundary (see Figure ES-1). The plan will establish management goals and objectives for the Planning Area. The Planning Area encompasses just over 100,000 acres of BLM-administered land in eastern San Diego County, California.

The BLM wishes to express its appreciation to all of those who contributed their time and expertise to this planning effort, other governmental agencies, public organizations, state and tribal entities, and interested individuals. Public collaboration through the scoping process led to shaping of issues covering off-highway vehicle use and access to public lands, livestock grazing, recreation, special status species, vegetation management, and renewable energy production.

Written comments on this DRMP/DEIS will be considered in the development of the Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS). Comments are most useful when they address one or more of the following:

- Errors in the analysis;
- New scientific information that would have a bearing on the analysis;
- Misinformation that could affect the outcome of the analysis;
- Requests for clarification;
- A substantive new alternative whose mix of allocations differs from those under any of the existing alternatives.

The 90-day public review and comment period will begin the day the Environmental Protection Agency (EPA)'s Notice of Availability (NOA) for the DRMP/DEIS is published in the *Federal Register*. All comments received must be postmarked by the close of the comment period to ensure consideration in preparation of the PRMP/FEIS. The DRMP/DEIS will be posted on our website (listed below).

To request a printed copy of the DRMP/DEIS and/or submit your written comments, please contact:

BLM El Centro Field Office
ESDC RMP Team Lead
1661 South 4th Street
El Centro, CA 92243

phone: 1-760-337-4400
website: www.ca.blm.gov
e-mail: caesdrmp@ca.blm.gov

Public comments, including names and street addresses of respondents, will be available for public review at Bureau of Land Management, 1661 South 4th St., El Centro, California 92243, during regular business hours (8:00 a.m. to 4:30 p.m.), Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

We appreciate your interest and encourage your continued involvement in the planning process.

Sincerely,

Vicki L. Wood
Field Manager

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Executive Summary

ES.1 Background and Introduction

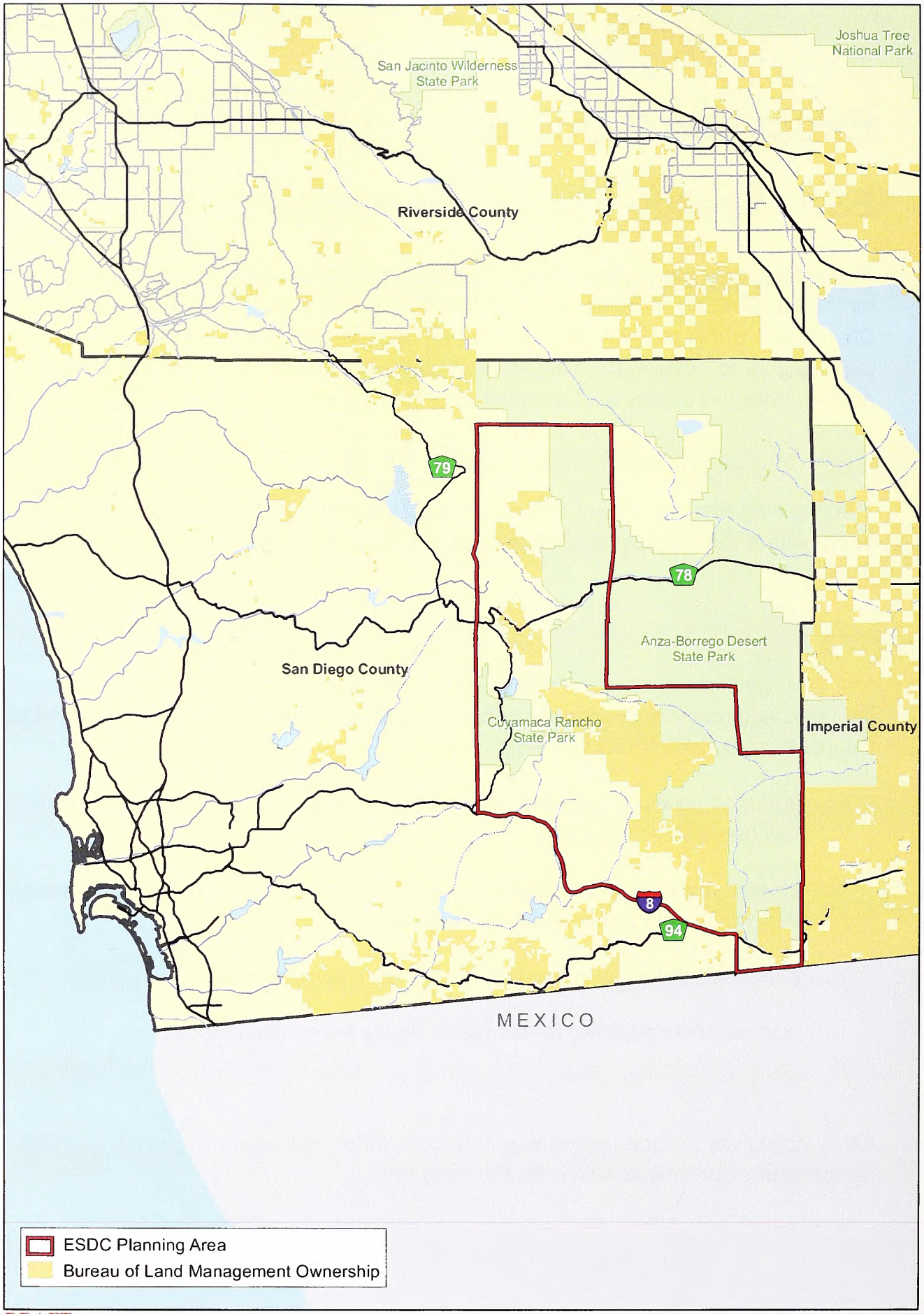
A new Resource Management Plan (RMP) and Environmental Impact Statement (EIS) for the Eastern San Diego County (ESDC) Planning Area are being prepared by the U.S. Department of the Interior (DOI) Bureau of Land Management (BLM). The purpose of the study is to update planning decisions based on changes in circumstances and policies since the current land use plan decisions were adopted.

The Planning Area contains 103,303 acres of public land (Figure ES-1). It spans diverse lands, with a range of environments from pine forests to palm oases overlooking desert basins.

The main goal and purpose of this study is to provide guidance in the management of the lands and resources administered by the El Centro Field Office in eastern San Diego County that will achieve the following:

- address conflicts between motorized, mechanized, and non-motorized/non-mechanized recreationists;
- protect sensitive natural and cultural resources from impacts due to recreational use, livestock grazing, and other land uses;
- provide guidance for renewable energy development; and
- 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.



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

5 0 5 10
Miles
5 0 5 10
Kilometers

FIGURE ES-1: Planning Area

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Bureau of Land Management
El Centro Field Office
February 2007

The Bureau of Land Management makes no warranties, implied or expressed, with respect to information shown on this map.

ES.2 Alternatives Evaluated

The following is a summary of components included in the five analyzed alternatives. Table ES-1 summarizes the management actions that vary by alternative. See Chapter 2 of this RMP for more detail.

ES.2.1 Alternative A (No Action)

Alternative A assumes the continuation of the present management of the Planning Area. Alternative A will serve as a baseline for most resources and land use allocations.

ES.2.2 Alternative B

Alternative B provides visitors with opportunities to experience natural and cultural resource values of the Planning Area. It proposes a combination of natural processes and active management techniques for resource and use management and it provides access through transportation network.

ES.2.3 Alternative C

Alternative C generally places emphasis on preservation of the Planning Area's natural and cultural resources through limited public use and discontinuation of grazing use. It focuses on natural processes and other unobtrusive methods for natural resource use and management. It proposes fewer motorized and developed recreation opportunities.

ES.2.4 Alternative D

Alternative D generally provides more opportunities for development such as renewable energy, transportation and utility rights-of-way (ROWs), and enhanced recreational opportunities (including motorized use).

ES.2.5 Alternative E (Preferred)

Alternative E 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. It is generally managed with decisions that have a greater balance of multiple uses. This alternative could be identical to one of the other alternatives presented or could be a combination of features from all of the other alternatives.

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE

Potential Decision	A	B	C	D	E
VEGETATION RESOURCE MANAGEMENT					
Cooperate with the Laguna-Moreno Demonstration in prescribed burning on BLM land.	X				
Allow prescribed burning on a case-by-case basis.		X	X	X	X
Prohibit removal of trees in Buck Canyon, Chariot Canyon, Oriflamme Canyon, and McCain Valley areas	X				
Prohibit removal of native standing trees, alive or dead, with the exception of fire management, health and human safety, or disease control.		X	X	X	X
Remove tamarisk using mechanical and herbicide applications following BLM policy on minimum tools in Wilderness.		X		X	X
Remove tamarisk by mechanical means. Herbicides will not be used on BLM-administered lands within the Planning Area for tamarisk removal.			X		
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.		X	X	X	X
Protect riparian habitat throughout the Planning Area by excluding livestock grazing, redirecting routes, and requiring permits to collect plants from riparian areas.	X				
Riparian areas would be avoidance areas for all commercial and non-commercial surface disturbance activities.		X		X	X
Riparian areas would be exclusion areas for all commercial and non-commercial surface disturbance activities.			X		

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
VEGETATION RESOURCE MANAGEMENT (CONT.)					
Perform revegetation projects that promote riparian area proper functioning condition and recruitment of oaks in uplands adjacent to riparian areas.		X	X	X	X
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.		X	X	X	X
Rehabilitation priority would be given to riparian areas, desert fan palm oases, oak woodlands, and desert wash, habitats that support Special Status Species and Areas of Critical Environmental Concern (ACECs).		X	X	X	X
VEGETATIVE USE AUTHORIZATIONS					
Prohibit removal of trees in Buck Canyon, Chariot Canyon, Oriflamme Canyon, and McCain Valley Areas.	X				
Prohibit removal of native standing trees alive or dead with the exception of fire management, health and human safety or disease control.		X	X	X	X
In McCain Valley area, allow wood gathering for campfires only where posted.	X				
Allow gathering of dead, downed wood for personal use only.		X		X	X
Prohibit collection of dead, downed wood for personal use.			X		
Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans. 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 would be given priority.		X		X	X
Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans. No commercial vegetation collection will be permitted. All other collection is on a case-by-case basis.			X		

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE
(CONT.)

Potential Decision	A	B	C	D	E
WILDLIFE RESOURCE MANAGEMENT					
Continue management under Management Framework Plan (MFP) and Interim Measures such as prohibiting removal of trees and snags used as raptor perches, prohibiting new intensive development in oak groves, and protecting riparian habitat.	X				
Protect the habitat of sensitive wildlife species throughout the Planning Area (BLM sensitive).	X				
Maintain current wildlife waters through cooperation with California Department of Fish and Game (CDFG) and volunteer contributions.	X				
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.		X		X	X
Maintain current wildlife waters through CDFG and volunteer contributions. No construction of new wildlife waters.			X		
Provide 15 animal unit months (AUMs) for mule deer at their present population of about 100 deer over 38 square miles in the McCain Valley area.	X				
Conduct prescribed burns to benefit wildlife habitat		X	X	X	X
SPECIAL STATUS SPECIES MANAGEMENT					
Protect sensitive plant species in the Julian and Oriflamme areas by prohibiting the use of herbicides when modifying fuel breaks to reduce visual impact. Determine if the opportunity exists to enhance the habitat of sensitive plants in conjunction with fire management.	X				
Protect the habitat of sensitive plants throughout the planning area.	X				
Require surface disturbance activities to avoid or minimize impacts and mitigate for residual impacts to all special status species habitat. Mitigation would be in the form of habitat restoration or acquisition.		X			X
Require surface disturbance activities to avoid adverse impacts to special status species habitat.			X		
Require surface disturbance activities to avoid or minimize impacts and mitigate residual impacts to federally listed species only. Mitigation would be in the form of habitat restoration or acquisition.				X	

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
SPECIAL STATUS SPECIES MANAGEMENT (CONT.)					
Do not allow commercial or personal collection of special status species. Allow research collection by permit only.		X	X	X	X
Follow prescriptions in recovery plans for federally-listed species.		X	X	X	X
Limit motorized use through incorporation of seasonal closure of designated access routes, as appropriate, in sensitive areas, such as critical habitat or recovery areas.		X			X
Critical habitat and recovery areas would be closed to motorized use.			X		
Allow motorized use of access routes within sensitive areas, such as critical habitat and recovery areas.				X	
VISUAL RESOURCE MANAGEMENT ALLOCATIONS					
Visual Resource Management (VRM) Class I (acres)	62,296	62,296	62,296	62,296	62,296
VRM Class II (acres)	40,758	41,237	41,961	13,720	32,875
VRM Class III (acres)	0	724	0	0	724
VRM Class IV (acres)	0	0	0	27,038	0
SPECIAL DESIGNATIONS					
WILDERNESS AND WILDERNESS PLANNING AREA MANAGEMENT					
Install informational kiosks at trailheads but do not improve access.		X	X		
Expand access by improving staging areas and providing informational kiosks at wilderness trailheads				X	X
Continued monitoring and signing and restoration	X	X	X	X	X
Continue to manage WSA under BLM's interim management policy until Congress designates as wilderness or releases from WSA status	X	X	X	X	X
Acquire in holdings from willing owners.					
Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.					
Manage the Table Mountain and In-Ko-Pah Mountain ACECs for biological and cultural values		X	X	X	X
Acquire in holdings from willing owners.					
Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.					

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
SPECIAL DESIGNATIONS (CONT.)					
AREAS OF CRITICAL ENVIRONMENTAL CONCERN ALLOCATIONS (ACRES)					
In-Ko-Pah ACEC	22,186	9,318	23,020	8,508	9,318
Table Mountain ACEC	4,293	4,686	5,704	4,293	4,686
Total ACEC	26,479	14,004	28,724	12,801	14,004
LIVESTOCK GRAZING					
LIVESTOCK GRAZING ALLOCATIONS (ACRES)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
LIVESTOCK GRAZING MANAGEMENT					
Conduct livestock use and associated management practices in a manner consistent with other multiple-use needs and objectives to ensure that the health of rangeland resources is preserved or improved so that they are productive for all rangeland values. Where needed, improve public rangeland ecosystems to meet objectives.	X	X		X	
Authorize and maintain range improvement projects in accordance with grazing regulations and policies.	X	X		X	
Reseed eroding sites in the Oriflamme land treatment area with native species, or allow natural revegetation. Install erosion control structures where desirable.	X				
Do not authorize a new allotment in the San Ysidro Mountain area, and do not authorize ephemeral grazing use. Monitor for livestock trespass, and take appropriate action to terminate trespass if it occurs.	X				
Establish the season of use for the expanded San Felipe Allotment as November 1 through June 30. Do not renew if the present lessee relinquishes the least. (This action is complete.)	X	X[1]		X[1]	
Establish a season of use for the Banner Queen Allotment based on further studies of the vegetative development of key species.	X	X[1]		X[1]	
Establish a season of use on the Vallecito Allotment and Canebrake Allotment as November 1 through June 30.	X	X[1]		X[1]	

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
LIVESTOCK GRAZING (CONT.)					
LIVESTOCK GRAZING MANAGEMENT (CONT.)					
Establish a season of use from about March 1 through October 31 for the portion of the Tierra Blanca Allotment located in the McCain Valley.	X	X[1]		X[1]	
No Grazing–eliminate all allotments with the exception of vegetation management prescriptions.			X		X
Establish a season of use from November 1 through June 30 on the In-Ko-Pah Allotment.	X	X[1]		X[1]	
Terminate the McCain Valley Allotment.	X				
Eliminate all grazing from Peninsular bighorn sheep critical habitat by adjusting allotment boundaries to exclude critical habitat.		X		X	
Prohibit domestic sheep grazing within nine miles of Peninsular bighorn sheep critical habitat to avoid disease transmission.		X	X	X	X
Adjust allotments to exclude grazing from the OHV use area in Lark Canyon and Table Mountain ACEC.		X			
Adjust the boundaries of the Lark Canyon OHV area to minimize conflicts between OHV users and grazing permittees. The boundary of the McCain Valley allotment (In-Ko-Pah) and the boundary of the Lark Canyon OHV area are currently in close proximity, and as a result, OHV users routinely enter the grazing allotment.				X	
MINERAL RESOURCE MANAGEMENT					
LOCATABLE MINERALS					
In areas of sensitive resource values, mining claims should be promptly examined and validity determination made.	X				
Propose withdrawal of the In-Ko-Pah Mountains ACEC from mineral entry.	X		X		X
Propose withdrawal of the Table Mountain ACEC from mineral entry.	X		X		X
Propose withdrawal of critical habitat from mineral entry.			X		
All critical habitat and ACECs would be available for mineral entry under the Mining Law, subject to Section 7 and Section 106 consultations.		X		X	
Wilderness Study Areas (WSAs) subject to IMP.		X		X	X

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
MINERAL RESOURCE MANAGEMENT (CONT.)					
LOCATABLE MINERALS (CONT.)					
WSAs proposed for withdrawal from mineral entry.			X		
Wilderness Areas (WAs) are withdrawn from all forms of entry, appropriation, or disposal under the public land laws.	X	X	X	X	X
LEASABLE MINERALS					
On the public lands within the Agua Caliente and Jacumba potential geothermal resources areas, permit geothermal exploration under a Notice of Intent.	X				
Critical habitat located within ACECs would be closed. The remainder of the critical habitat outside of the ACECs would be subject to no surface occupancy.		X			
Critical habitat and ACECs would be closed.			X		X
Open all critical habitat and ACECs, subject to Section 7 and Section 106 consultations.				X	
WSAs closed.		X	X		X
WSAs subject to IMP.				X	
WAs are withdrawn from all forms of entry, appropriation, or disposal under the public land laws.	X	X	X	X	X
SALABLE MINERALS					
Do not issue mineral sales or free use permits for the canebrake Canyon/Sawtooth Mountains/ Vallecito Valley areas. The material sale pit on the north side of Table Mountain should be investigated, and a determination made as to the desirability of future use.	X				
The material sale pit on the north side of Table Mountain should be investigated, and a determination made as to the desirability of future use.	X				
WSAs closed.		X	X		X
WSAs subject to the IMP.				X	
WAs are withdrawn from all forms of entry, appropriation, or disposal under the public land laws.	X	X	X	X	X
Critical habitat located within ACECs would be closed.		X			
Critical habitat and ACECs would be closed.			X		X

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
MINERAL RESOURCE MANAGEMENT (CONT.)					
SALABLE MINERALS (CONT.)					
Open all critical habitat and ACECs, subject to Section 7 and Section 106 consultations.				X	
RECREATION MANAGEMENT AREA ALLOCATIONS					
Boulevard Destination SRMA (acres)	n/a	43,019	43,019	43,019	43,019
Julian Destination SRMA (acres)	n/a	15,180	15,180	15,180	15,180
Sawtooth Destination SRMA (acres)	n/a	45,104	n/a	45,104	45,104
Sawtooth Undeveloped SRMA (acres)	n/a	n/a	45,104	n/a	n/a
ERMA (acres)	n/a	0	0	0	0
Total BLM RMA (acres)	103,303	103,303	103,303	103,303	103,303
RECREATION MANAGEMENT					
Limit group size for Table Mountain to 12 visitors.		X	X	X	
Reseed and fence off eroding sites in the McCain Valley campgrounds and restrict off-road vehicle use in campgrounds as decided in the 1979 McCain Recreation Area Management Plan (RAMP); allow other sites to revegetate naturally. Install erosion control devices in campground areas where necessary, but protect archaeological resources from construction activities in Cottonwood Campground. Reseed only with native species.	X				
Take steps to control erosion on vehicle routes now closed to use east of the McCain Valley Road. Reseed "Competition Hill"; allow natural revegetation in other areas. Install erosion control structure on "Competition Hill" as needed. Utilize native species for reseeding.	X				
Collect Recreation Use Permit (RUP) fees at Cottonwood and Lark Canyon campgrounds under the authority of Federal Lands Recreation Enhancement Act (FLREA).	X	X	X	X	X
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 Desired Outcomes, and would 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.	X	X		X	X

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
RECREATION MANAGEMENT (CONT.)					
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.	X	X	X	X	X
To the greatest extent possible, construct and modify recreation facilities and outdoor developed areas so they are accessible to people with disabilities in accordance with the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973, as amended, and in conformance with relevant building standards, accessible outdoor program guidance, and program regulations.	X	X	X	X	X
Maintain, install, and improve informational and interpretive kiosks and signs at the main points of access and interest throughout the field office. Signage should focus on informing visitors of applicable regulations and sustainable outdoor recreation ethics.	X	X	X	X	X
Protect at-risk cultural resources from recreational damage as needed throughout the field office. Protection measures could include, but are not limited to fencing, signage, and trail realignments, restorations, and use limitations.	X	X	X	X	X
Increase the Planning Area's Recreation and Visitor Services staff to provide for basic safety and resource protection and the enhancement of the recreation experiences.		X	X	X	X
Collaborate with local agencies and organizations to identify and designate a sufficient number of base camps throughout the Planning Area for authorized SRP activities.					
Develop and enhance partnerships through the BLM volunteer program for the purposes of improving recreational opportunities, experiences, and benefits.		X	X		
Enhance and expand the Planning Area's interpretive and outreach programs for the purposes of public education and resource protection.			X	X	
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.	X	X	X	X	

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE
(CONT.)

Potential Decision	A	B	C	D	E
RECREATION MANAGEMENT (CONT.)					
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.		X	X	X	X
OHV MANAGEMENT AREA DESIGNATIONS (ACRES)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
ROUTES OF TRAVEL					
Designate all areas within Class M for vehicle use as "limited to existing routes of travel." All existing routes are open unless posted closed by BLM. Designate all areas within Class L for vehicle use as "limited to approved routes of travel," with the exception of Class L portion of the In-Ko-Pah Mountain ACEC north of the Sacatone Springs Road.	X				
WAs and WSAs would be designated as closed areas for mechanized and motorized vehicle use. Travel within the rest of the Planning Area will be limited to designated routes.		X	X	X	X
Non-motorized routes of travel would be restored.		X	X	X	X
Designate the Class L portion of the In-Ko-Pah Mountains ACEC north of Lost Valley as "closed to vehicle use.	X				
Lark Canyon Recreation Zone, routes limited to all-terrain vehicles (ATVs) 40" or less would be 10 feet wide, or 5 feet on each side of center.		X	X	X	
Designate the Sawtooth Mountains WSA as limited to approved routes of travel for grazing and administrative purposes.	X				
Designate the Carrizo Gorge WSA as "closed" to vehicle use.	X				
Motorized vehicles may be allowed to pull off 300 feet from the edge of a designated route.	X			X	
Motorized vehicles may be allowed to pull off 100 feet from the edge of a designated route.		X			

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE
(CONT.)

Potential Decision	A	B	C	D	E
ROUTES OF TRAVEL (CONT.)					
Motorized vehicles may be allowed to pull off 25 feet from the edge of a designated route.			X		X
Route Decisions based on importance for recreation, cultural, and biological.		X			
Route decisions based on cultural and biological resources.			X		
Route decisions based on importance of the route.				X	
BLM roads will be inspected and maintained on a periodic basis		X	X	X	X
IMPLEMENTATION LEVEL DECISIONS—ROUTES OF TRAVEL (MILES)					
Motorized	108.55	92.75	77.90	108.55	92.75
Non-motorized	82.55	98.45	113.3	82.55	98.45
Total Mileage	191.20	191.20	191.20	191.20	191.20
LANDS AND REALTY MANAGEMENT					
LAND TENURE					
Potential disposal (acres)	1,715	1,080	0	1,080	490
Acquisitions	Lands and interests in lands (including easements) would be acquired from willing sellers on a case-by-case basis. Emphasis would 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.				
LAND USE AUTHORIZATIONS					
Leases, Permits, and Easements	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				
Rights of Way (ROW)	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				
Communication Sites (number)	2	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.			
Renewable Energy	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				

TABLE ES-1
SUMMARY OF POTENTIAL DECISIONS THAT VARY BY ALTERNATIVE (CONT.)

Potential Decision	A	B	C	D	E
LANDS AND REALTY MANAGEMENT (CONT.)					
LAND USE AUTHORIZATIONS (CONT.)					
WAs and WSAs are exclusion areas	X			X	X
ACECs and VRM Class II are avoidance areas.		X	X		X
Critical habitat is an avoidance area.		X			X
Critical habitat is an exclusion area. Quino recovery area is avoidance.			X		
No exclusion or avoidance areas except WAs and WSAs. No adverse modification for critical habitats.				X	
Wind energy development would be subject to best management practices, as outlined in the national wind energy policy or as updated.		X	X	X	X
WITHDRAWALS					
Existing Withdrawal–WAs	48,333	48,333	48,333	48,333	48,333
Existing Withdrawal-Public Land Order[2] (PLOs[2])	26,696	26,696	26,696	26,696	26,696
Proposed Withdrawal–BLM only[3]	26,479	0	26,102	0	9,471
UTILITY CORRIDOR					
Number of corridors/miles	1/1,920	1/980	1/980	1/980	1/980

[1] The allotment would continue to be managed on a case-by-case basis and permitted on a case-by-case basis pending rangeland health assessments.
[2] These lands are withdrawn from application under certain non-mineral public land laws and from disposition under the homestead, desert land, and scrip selection laws, and excludes overlap with WAs.
[3] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.

ES.3 Affected Environment

Climate and Weather

The Coast/Peninsular Ranges extend from north to southeast through the Planning Area. Along the western side of the Peninsular Ranges the climate is dominated by the Pacific Ocean. Warm winters, cool summers, small daily and seasonal temperature ranges, and a high relative humidity are characteristic of this area. With increasing distance from the ocean the maritime influence decreases. The mountainous areas, which are well protected from the ocean experience warmer summers and winters cold

enough to allow snowfall. In the areas east of the mountains, a continental desert regime prevails.

Temperatures data from Julian show average monthly temperatures ranging between maximums of 52° to 86° and minimums of 35° to 60° Fahrenheit. Temperatures data from the Borrego Desert Park show average monthly temperatures ranging between maximums of 69° to 107° and minimums of 44° to 75° Fahrenheit. Temperatures data from Cuyamaca show average monthly temperatures ranging between maximums of 51° to 85° and minimums of 29° to 55° Fahrenheit. The average annual precipitation is 24, 6, and 33 inches at Julian, Borrego Desert Park, and Cuyamaca, respectively. The majority of rain falls in November–March.

Soil Resources

The Planning Area contains a wide variety of soil types, as might be expected in a zone which spans the transition from low desert to coastal mountains. This variety of types is the result of diversity in parent material, relief, climate, living organisms, and age of the soils.

The majority of Planning Area falls in a moderate erosion class. Approximately 40 percent of the lands consist of a slope of 50 percent or greater. Despite the high incidence of steep slopes, soil loss due to water erosion is not of major significance because of low annual surface runoff and the high percent of ground cover, which averages 48 percent throughout the Planning Area. Most erosion problems are the result of human disturbances associated with use of the land for grazing and recreation.

Twenty-four soil series composed of thirty different soil types are found on BLM-administered lands in the Planning Area.

Water Resources

There are no major lakes or reservoirs in the Planning Area. However, there are several small retention dams, built for the purpose of supplying water to livestock and wildlife. There are several springs in the Planning Area, which produce intermittent flow.

The Planning Area falls within portions of the South Coast and the Colorado River Hydrologic Regions. There are several groundwater basins within the Planning Area, however they are considered to be "low use basins".

Water use on BLM-administered lands in the Planning Area consists of livestock use and campground use. The natural springs and some developed springs are important sources of water for wildlife, including both game and non-game animals. Grazing on the McCain Valley allotment is not occurring at this time since the springs are currently dry. The campgrounds have several water spigots which are supplied by groundwater pumped by windmill.

Vegetative Communities

The Eastern San Diego County Planning Area is bordered by the Colorado Desert on the East and by the coniferous forest of the Laguna Mountains on the west. Elevation escalates dramatically from east to west in the Planning Area. These sharp elevation changes make the Planning Area a highly diverse area for plant life.

BLM lands within the Eastern San Diego Planning Area harbor many different types of vegetation communities: mixed riparian woodland, oak woodland, desert wash, semi-desert chaparral, desert fan palm oasis, mixed conifer woodland, and enriched desert scrub.

Wildland Fire Ecology and Management

The Planning Unit is situated in a transition zone between two highly flammable fuel types (chamise/semi-desert chaparral and desert scrub communities). Combined with a scattered heavy grass component and dry climatic conditions, this fuel type is characterized by extreme fire behavior potential throughout most of the year. The potential for large fire occurrence is a constant threat for private communities in the area. Past fire history has shown that vegetation fires that become well established in the heavier chaparral fuel types under strong west wind conditions can usually make significant runs down into the desert canyons. An example was the Pines Fire in 2002. It was the largest west–wind driven fire in San Diego County history, at the time, and consumed over 61,000 acres, burning numerous homes in Julian and Ranchita, and 15,000 acres of BLM land. A trend in fire starts due to increased urbanization along the Interstate 8 corridor, in McCain Valley and the Julian/Banner Grade area is a major

concern to fire agencies. The mountain ranges in eastern San Diego County are continually hit with lightning during the summer months when monsoonal flows move up from Mexico.

Wildlife

There are a complex variety of wildlife habitats throughout the Planning Area. An abundance of wildlife exists within the Planning Area including several sensitive and federally threatened species. The area serves as a migratory corridor for numerous species of neotropical migrant birds.

The priority wildlife identified by the BLM for management includes raptors, non-game migratory birds, bats, and game animals.

Special Status Species

USFWS has identified ten federally listed species as occurring within the Planning Area: Peninsular bighorn sheep, least Bell's vireo, southwestern willow flycatcher (SWFL), arroyo toad, quino checkerspot butterfly, Laguna Mountains skipper, unarmored threespine stickleback, Mexican flannelbush, Nevin's barberry, and San Bernardino blue grass. Unarmored threespine stickleback, Mexican flannelbush, Nevin's barberry, and San Bernardino blue grass are not currently known to occur on BLM-administered lands within the Planning Area, and there is little to no habitat present to support these species.

There are six state listed species found within the Planning Area: barefoot gecko, Swainson's hawk, Laguna Mountains aster, SWFL, least Bell's vireo, Peninsular bighorn sheep.

BLM sensitive plant species identified in the Planning Area are Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), delicate clarkia (*Clarkia delicata*), Tecate tarplant (*Deinandra floribunda*), Laguna Mountains alumroot (*Heuchera brevistaminea*), San Diego sunflower (*Hulsea californica*), mountain springs bush lupine (*Lupinus excubitus* var. *medius*), southern jewelflower (*Streptanthus campestris*), and Parry's tetracoccus (*Tetracoccus dioicus*). BLM sensitive wildlife species identified within the Planning Area

are chuckwalla (*Sauromalus obesus*), gray vireo (*Vireo vicinior*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), and Townsends's western big-eared bat (*Plecotus townsendii*).

Cultural Resources

The prehistory of eastern San Diego County, California may be divided into four major temporal periods: Early Man, Paleoamerican, Archaic, and Late Prehistoric. These time periods have regional expression through various regional archaeological complexes or archaeological cultures. A very early time of human occupation is posited for the Greater Southwest. The archaeological complex associated with this time frame is called the Malpais Complex. The earliest part of the Paleoamerican Period in the region is occupied by the Fluted Point Tradition. The Fluted Point Tradition in the far West contains many of the artifact types found in the assemblage of the San Dieguito/Lake Mojave Complex: flaked stone crescents, gravers, perforators, scrapers, and choppers. The Archaic period is characterized by two archaeological complexes. The earliest is the Pinto complex (7000 to 4000 B.P.); the other is known as the Amargosa or Gypsum complex (4000 to 1500 B.P.). Beginning with the Pinto complex, there is an apparent shift to a more generalized economy and a gradually increased emphasis on the exploitation of plant resources. The Late Prehistoric period in the Colorado Desert begins at approximately 1500 B.P. (A.D. 500) and is referred to as the Patayan Pattern. Along the southern California coast, the period is characterized by the Cuyamaca Complex. Ethnographic groups and tribes historically located in the planning area include the Cahuilla, the Kumeyaay, and the Luiseño. Extensive Spanish exploration of southern California occurred began in 1540, with the first European settlement in 1769. Cattle ranching dominated the economy during the Mexican Period. Mining has been practiced sporadically or on a small scale since the major Julian gold rush of the 1870s. There are a number of historic trails within the Planning Area.

Paleontological Resources

Within the Planning Area are several rock units having high probability of paleontological resource occurrence, several rock units having moderate probability of paleontological occurrence, and several rock units having low probability of paleontological resource occurrence. The majority of the units having high probability of paleontological resource occurrence occur on State Parks land and BLM designated wilderness.

Visual Resources

Under the existing management situation all wilderness areas (WAs) and Wilderness Study Areas (WSAs) are managed as Visual Resource Management (VRM) Class I. Most other BLM-administered lands in the Planning Area are managed as Class II.

Special Designations

Within the Planning Area, Special Designations consist of two designated WAs, five WSAs, one National Scenic Trail, and two Areas of Critical Environmental Concern (ACECs).

Public Health and Safety

Public health and safety concerns consist of abandoned mines, hazardous (including landfills, mining and milling waste, and border issues.

Livestock Grazing

Nine grazing allotments are within the Planning Area, all classified as perennial-ephemeral. Only two of these allotments are in active use: McCain Valley – In-Ko-Pah and McCain Valley – Tierra Blanca for a total of 20,497 acres and 1,112 AUMs.

Lands and Realty

BLM manages a diverse combination of land and realty resources in the Planning Area, dealing with area allocation for utility corridors and communications, land tenure issues, land use authorizations, withdrawals, and renewable energy. Currently there is only one major utility ROW corridor traversing the Planning Area. There are three communication facilities occurring on two sites.

Mineral Resources

Locatables:

Within the Planning Area are three areas of known, historic, mineral development. These include the Julian District, the Metal Mountain District (located northwest of McCain Valley), and the Sacatone District located in the Sacatone Spring/Tule Mountain area

southeast of McCain Valley). All three mining districts include public land managed by the BLM. There are 77 mining claims recorded with the BLM in the Planning Area, 58 of which are on BLM-administered lands. No mining claims are located in BLM-managed WAs or WSAs.

BLM has classified 201,720 acres with moderate potential for the occurrence of metallic mineral resources, and 36,050 acres with high potential for metallic locatable minerals within the Planning Area. Of these lands, 53,210 acres of moderate potential and 28,550 acres of high potential are on BLM-administered lands within the Planning Area. Most areas classified as having a high potential for occurrence of metallic mineral resources are on patented mining claims located principally in the Julian area.

BLM has classified 121,180 acres with moderate potential for the occurrence of nonmetallic/industrial mineral resources, and 7,400 acres with high potential for nonmetallic/industrial locatable minerals within the Planning Area. Of these lands, 44,250 acres of moderate potential and 4,530 acres of high potential are on BLM-administered lands within the Planning Area.

Leasables:

There is no potential for oil, gas, coal, sodium, or potash resources in the Planning Area, or other solid leasable minerals. Three areas in the northern, central, and southern portions of the Planning Area have been classified as potentially valuable for geothermal resources because hot springs are present. Two of these areas, centering on Agua Caliente and Jacumba, are located on public lands. BLM has classified 80,240 acres classified as prospectively valuable for geothermal resources within the Planning Area. Of these lands, 22,040 acres classified as prospectively valuable for geothermal are present on BLM-administered lands within the Planning Area.

Salables:

There are few historic sand and gravel sites present within the Planning Area, but currently no commercial activity. This lack of activity may be due to the poor accessibility of the Planning Area. High mineral potential exists in area of McCain Valley for a rock quarry but access is restricted.

Recreation Management

Opportunities exist within the planning unit for a wide variety of recreational uses at a low to moderate levels of intensity. Activities known to occur in the area include hunting, rock hounding, hiking, backpacking, sightseeing, target shooting, camping, equestrian, four-wheel drive touring, mountain biking, and off-road vehicle use.

Visitors that use BLM-administered public lands in the Planning Area for recreational pursuits are primarily from the surrounding communities within San Diego County and from the City of San Diego itself. Visitors who come to utilize the recreational opportunities within the Planning Area are represented by all age groups.

McCain Valley Recreation Area, in the southern portion of the Planning Area, receives the most visitation and consists of two developed campgrounds (vault toilets, water, picnic tables and fire rings), one OHV area for OHVs that are 40" wide or less, and two scenic overlooks.

Social and Economic

The County of San Diego is relatively large encompassing 2,727,000 acres. The Planning Area is generally very rural, it is sparsely populated with a few small towns or communities, and covers about 533,000 acres located in the eastern quarter of San Diego County (see Figure ES-1).

Within the 533,000-acre Planning Area the BLM has about 103,303 acres under its management. Therefore, the Planning Area represents about one-quarter of San Diego County and the acreage under BLM's control represents only one-seventh (about 13%) of the Planning Area or about 4 percent of the acreage within San Diego County.

The current population estimate of 13,742 residents for 2005 represented a small decrease (-0.4%) from the 13,794 residents reported by the 2000 U.S. Census. The number of households in the Planning Area as of January 2005 was 5,543, about 0.5 percent of the 1,061,027 households in San Diego County.

A substantial proportion of the Planning Area population was reported as White (86%). In addition, 10 percent were reported as multiple race, 3 percent American Indian or Alaskan Native, and 1 percent Black or African–American.

Substantial population growth is forecast for the Planning Area. Over the 30 year period of 2000 to 2030 the population of is expected to increase about 150 percent compared with a 37 percent increase in the population of the County. Employment growth for residents of the Planning Area is also expected to be very strong over the period rising 106 percent compared with a more modest 32 percent increase in employment within the County.

The Planning Area economy generates about $215 million in gross regional product as measured by value added. The total output (sales) of the ESDC is approximately $379 million and the total employee income is $135 million. The $379 million in output within the Planning Area supports approximately 4,400 jobs. The total value added per employee is approximately $48,900.

The largest sector of the ESDC economy in terms of employment is Animal Production with a reported 564 jobs. Approximately, 12 percent of the employment for the ESDC Planning Area is in Animal Production. Transportation & Warehousing was the second largest employment sector with a reported 349 jobs.

The BLM and the Sonoran Institute have developed a very sophisticated economic profiling system (EPS) that enables very detailed analyses of economic and demographic trends, primarily at the county level and for larger areas. However, it has been clearly demonstrated in the preceding demographic discussion that the Planning Area represents a fairly small portion of the county in terms of land area, population, and employment. The same is true for the economic value of the goods and services that are produced with the Planning Area.

As a very general overview, the Planning Area may be defined as containing about 0.5 percent of the countywide population. It also generates about 0.25 percent of the jobs within the county, and about 0.2 percent of the county's regional product. The Planning Area is very rural, and the economy is relatively stagnant compared with the densely populated and dynamic economy of San Diego County. Therefore, it was determined by

CIC Research, Inc. that the EPS database would be somewhat misleading and inappropriate for general application in the analysis for the ESDC Draft Resource Management Plan (DRMP).

To produce the estimates of employment and the value of regional product, CIC developed a regional input-output (I-O) model for the Planning Area and for San Diego County. The regional I-O model was based on software and data provided by Impact Analysis for Planning (IMPLAN)/Pro. The value of the IMPLAN/Pro system coupled with CIC's experience and knowledge of the Planning Area was to provide a basis for measuring the size of key economic sectors of the Planning Area in terms of output, income, and employment. The I-O system also provided the ability to model the expected impact of exogenous changes in the Planning Area economy based on planning alternatives for the proposed regional master plan. The economic impacts were determined for each of the BLM-proposed planning alternatives for the Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/EIS), focusing on the four programs with economic value in the Planning Area: livestock grazing, lands and realty, mineral resources, and recreation management.

Environmental Justice

The populations of Blacks, Hispanics, and American Indians are not meaningfully greater in the Planning Area than the general population of San Diego County. However, there are Indian Reservations in Eastern San Diego County, in which the Indian population is meaningfully greater, than in the general population, as would be expected. There are six Indian Reservations within the Planning Area. Of these, five have resident populations: Campo, La Posta, Los Coyotes, Manzanita, and Santa Ysabel. These Indian communities can be characterized as low income and minority. At present, the BLM has no economic data focused on the economic status of these communities. The BLM has identified no other communities with a majority low income or minority population. However, the BLM assumes that there are small pockets of poverty scattered throughout the Planning Area. There are no available economic, sociological, or anthropological studies of these economically disadvantaged neighborhoods that might exist within the Planning Area.

ES.4 Impact Analysis Summary

Chapter 4 describes the potential effects from planning decisions. A quantitative analysis is included where possible; otherwise a qualitative discussion is included to describe potential impacts. These effects are summarized below.

Under implementation of Alternative A (No Action), the following effects are anticipated:

- **Air Quality.** Under the No Action Alternative, there would be no air quality impacts.

- **Soil Resources.** There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing campgrounds. However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area.

  Erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Alternative A calls for reseeding eroding sites or allowing for natural revegetation in the Oriflamme land treatment site, the McCain Valley campgrounds, and "Competition Hill" and the installation of erosion control structures where desirable.

- **Water Resources.** Approved activities have the potential to result in a variety of effects to water resources including reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water. Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater.

- **Vegetative Resources.** Some BLM Land Use Plan (LUP) decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.

- **Wildlife Resources.** Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

- **Special Status Species.** Alternative A would allow current grazing practices and mineral entry within critical habitat found on BLM-administered lands within the Planning Area. This could result in effects to special status species. The action alternatives provide more protection measures for special status species, resulting in fewer impacts.

- **Cultural Resources.** Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling.

  Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions extend additional consideration of cultural resources in the planning process and provide for additional protections and would therefore have a beneficial effect on any that exist within the acquired property.

- **Paleontological Resources.** Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate

resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits.

Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions extend additional consideration of vertebrate fossils and scientifically significant invertebrate resources in the planning process and would have a beneficial effect on any that exist within the acquired property.

- **Visual Resources.** WAs and WSAs are classified as VRM Class I, which is the most restrictive class. Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.

- **Special Designations.** The primary potential impacts to the two designated WAs within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and maintenance of structures as well as the structures themselves. WA values can be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts from construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area. Construction and maintenance of wildlife and range improvement facilities (e.g., wildlife waters) could degrade values for which these WAs were designated. Livestock grazing, where established at the time of designation of the two WAs, shall be allowed to continue irrespective of impacts on the wilderness characteristic. The presence of livestock and associated presence of structures and ranchers would have an impact on the wilderness characteristic of naturalness. Approximately 21,204 acres of the Sawtooth Mountains WA and

approximately 5,293 acres of Carrizo Gorge WA are being grazed under Alternative A.

The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. WSA values could be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts could result from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings. No impacts are expected from mining, mineral leasing, or mineral sales activities.

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: Vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

- **Public Health and Safety.** Potential public health and safety issues in the Planning Area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.

- **Livestock Grazing.** Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within grazing areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post-fire, forage quality, and palatability could increase due to the stimulation of vegetation. Range improvement projects (e.g., livestock and wildlife waters) would increase the amount of available water. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

- **Lands and Realty**
  - Land Tenure (Disposals, Acquisitions, and Recreation and Public Purposes [R&PPs])

    Disposals would result in fewer acres available within the BLM transportation and access network.

    Acquisition of lands through exchange, purchase, and donation improves management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to landlocked parcels would result in increased use of these lands by the public.

    Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

  - Utility Corridors and Communications

    Under Alternative A (No Action) there is one existing utility corridor south of Table Mountain near Interstate 8 that is 1.5 miles long and approximately 2 miles wide, encompassing 1,920 acres within the Planning Area. Alternative A has two communication sites with three facilities.

  - Renewable Energy

    The DRMP allows for the development of renewable energy, although land use allocations for renewable energy vary by alternative. Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis to meet public demand.

Based on the wind energy potential model developed by PPM Energy (2006), there is a total of 12,764 acres of BLM-administered lands in the Planning Area that have the potential to support future wind energy projects under Alternative A, excluding wilderness and WSAs. The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

- **Mineral Resources**

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACECs (Alternative C).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in areas withdrawn from mineral entry, and these rights would be acquired to protect non-mineral resources, access to, and development of metallic and non-metallic/industrial minerals would be affected.

- **Recreation Program**
  - Recreation Management

Under all alternatives except Alternative A, 103,303 acres of Special Recreation Management Areas (SRMAs) would be created. BLM lands outside of SRMAs are Extensive Recreation Management Areas (ERMA). Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for

any SRMAs, it creates 38,690 acres in accordance with the McCain Valley Recreation Area Management Plan (RAMP; DOI BLM 1979).

Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ) under Alternatives B, C, D, and E.

Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

- Transportation and Public Access

Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

For WAs, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. The Pacific Crest National Scenic Trail (NST) is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as

authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized.

Access requiring authorization (uses requiring permits) could involve seasonal restrictions such as seasonal closures in Peninsular bighorn sheep critical habitat during lambing season.

Authorizations or leases could result in closure to areas for public access (i.e. geothermal wind, solar) as a result of public health and safety concerns. Access for authorized uses such as minerals on split-estate lands where BLM manages the subsurface would not necessarily give public access across private lands, but grant access only to the authorized user.

- **Social and Economic.** It is not expected that any of the proposed RMP alternatives would result in any significant economic impacts. A possible exception would be the potential for wind energy development. If and when a project is proposed to the BLM, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

- **Environmental Justice.** The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

Under implementation of Alternative B, the following effects are anticipated:

- **Air Quality.** Under the Alternative B, there would be no air quality impacts.

- **Soil Resources.** There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds.

However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area. Erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative B, construction of new wildlife waters would be authorized on a case-by-case basis; the lands available for livestock grazing would be reduced; and the restoration of non-motorized routes of travel would occur.

- **Water Resources.** Approved activities have the potential to result in a variety of effects to water resources including reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water. Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative B, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores; the lands available for livestock grazing would be reduced, resulting in a reduction in the amount of water used.

- **Vegetative Resources.** Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.

- **Wildlife Resources.** Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

- **Special Status Species** Alternative B would eliminate grazing from all critical habitat which would result in beneficial effect to special status species. Mineral entry would be allowed within critical habitat which could result in effects to some special status species. The parcel supporting Quino Checkerspot Butterfly

Critical Habitat is land-locked by state parks and private lands and has limited access and thus mineral entry is unlikely to affect this species.

- **Cultural Resources.** Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling.

  Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions extend additional consideration of cultural resources in the planning process and provide for additional protections and would therefore have a beneficial effect on any cultural resources that exist within the acquired property.

- **Paleontological Resources.** Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits.

  Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions extend additional consideration of vertebrate fossils and scientifically significant invertebrate resources in the planning process and would have a beneficial effect on any that exist within the acquired property.

- **Visual Resources.** WAs and WSAs are classified as VRM Class I, which is the most restrictive class. Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.

- **Special Designations.** The primary potential impacts to the two designated WAs within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and maintenance of structures as well as the structures themselves. WA values can be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts from construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area. Construction and maintenance of wildlife and range improvement facilities (e.g., wildlife waters) could degrade values for which these WAs were designated. Livestock grazing, where established at the time of designation of the two WAs, shall be allowed to continue irrespective of impacts on the wilderness characteristic. The presence of livestock and associated presence of structures and ranchers would have an impact on the wilderness characteristic of naturalness. Under Alternative B, grazing would be eliminated from critical habitat. This would reduce the extent of grazing and enhance the wilderness characteristics, primarily naturalness, of the Sawtooth WA. However, any new structures, such as fences, necessary to implement this would reduce the wilderness characteristics.

  The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. WSA values could be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts could result from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings. No impacts are expected from mining, mineral leasing, or mineral sales activities.

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: Vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

- **Public Health and Safety.** Potential public health and safety issues in the Planning Area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.

- **Livestock Grazing.** Under Alternative B lands available for livestock grazing would be reduced and allotments would be adjusted to exclude grazing from the OHV use area in Lark Canyon and Table Mountain ACEC. Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within grazing areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality, and palatability could increase due to the stimulation of vegetation. Range improvement projects (e.g., livestock and wildlife waters) would increase the amount of available water. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

- **Lands and Realty**

  - Land Tenure (Disposals, Acquisitions, and R&PPs)

    Disposals would result in fewer acres available within the BLM transportation and access network.

    Acquisition of lands through exchange, purchase, and donation is designed to improve management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to

landlocked parcels would result in increased use of these lands by the public.

Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

- Utility Corridors and Communications

Under Alternative B, the utility corridor would be 1.5 miles long with a width of 1 mile (960 acres), the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new utility ROWs, consisting of the following types, would 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.

Alternative B would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities.

- Renewable Energy

The DRMP allows for the development of renewable energy, although land use allocations for renewable energy vary by alternative. Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis to meet public demand. Under Alternative B, solar or wind generating facilities would not be located in VRM Classes I and II. WAs and WSAs are exclusion areas under all alternatives. ACECs are exclusion areas under Alternative B.

Under Alternative B, the potential buildable land for wind energy is 12,764 acres, excluding wilderness and WSAs.

The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

- **Mineral Resources**

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACECs (Alternative C).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in areas withdrawn from mineral entry, and these rights would be acquired to protect non-mineral resources, access to and development of metallic and non-metallic/industrial minerals would be affected.

- **Recreation Program**
  - Recreation Management

Under all alternatives except Alternative A, 103,303 acres of SRMAs would be created. BLM lands outside of SRMAs are ERMAs. Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for any SRMAs, it creates 38,690 acres in accordance with the McCain Valley RAMP (DOI BLM 1979).

Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon RMZ under Alternatives B, C, D, and E.

Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

- Transportation and Public Access

Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

For WAs, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. The Pacific Crest NST is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized.

Access requiring authorization (uses requiring permits) could involve seasonal restrictions such as seasonal closures in Peninsular bighorn sheep critical habitat during lambing season.

Authorizations or leases could result in closure to areas for public access (i.e. geothermal wind, solar) as a result of public health and safety concerns. Access for authorized uses such as minerals on split-estate lands where BLM manages the subsurface would not necessarily give public access across private lands, but grant access only to the authorized user.

- **Social and Economic.** It is not expected that any of the proposed RMP alternatives would result in any significant economic impacts. A possible exception would be the potential for wind energy development. If and when a project is proposed to the BLM, the BLM and operator(s) will need to develop project-specific PODs, which would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

- **Environmental Justice.** The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

Under implementation of Alternative C, the following effects are anticipated:

- **Air Quality.** Under the Alternative C, there would be no air quality impacts.

- **Soil Resources.** There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area. Erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover.

Under Alternative C, there would be no construction of new wildlife waters; all BLM-administered lands would be unavailable for livestock grazing; and the restoration of non-motorized routes of travel would occur.

- **Water Resources.** Approved activities have the potential to result in a variety of effects to water resources including reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water. Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative C, all BLM-administered lands would be unavailable for livestock grazing, which would reduce the amount of water used.

- **Vegetative Resources.** Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.

- **Wildlife Resources.** Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

- **Special Status Species.** Alternative C would eliminate grazing and mineral entry from critical habitat within the BLM-administered lands within the Planning Area. This would result in no effect to special status species.

- **Cultural Resources.** Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of surface artifacts and features.

Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions extend additional consideration of cultural resources in the planning process and provide for additional protections and would therefore have a beneficial effect on any cultural resources that exist within the acquired property.

- **Paleontological Resources.** Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of exposed vertebrate fossils and scientifically significant invertebrate deposits.

Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions extend additional consideration of vertebrate fossils and scientifically significant invertebrate resources in the planning process and would have a beneficial effect on any that exist within the acquired property.

- **Visual Resources.** WAs and WSAs are classified as VRM Class I, which is the most restrictive class. Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.

- **Special Designations.** The primary potential impacts to the two designated WAs within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and maintenance of structures as well as the structures themselves. WA values can

be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts from construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area. Construction and maintenance of wildlife and range improvement facilities (e.g. wildlife waters) could degrade values for which these WAs were designated. Under this alternative, livestock grazing would be eliminated from WAs, thereby reducing impacts to the wilderness characteristic.

The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. WSA values could be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts could result from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings. No impacts are expected from mining, mineral leasing, or mineral sales activities.

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: Vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

- **Public Health and Safety.** Potential public health and safety issues in the Planning Area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.

- **Livestock Grazing.** Under Alternative C, all BLM-administered lands would be unavailable for livestock grazing. Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within grazing

areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality and palatability could increase due to the stimulation of vegetation. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

- **Lands and Realty**

  - Land Tenure (Disposals, Acquisitions, and R&PPs)

    Disposals would result in fewer acres available within the BLM transportation and access network.

    Acquisition of lands through exchange, purchase, and donation is designed to improve management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to landlocked parcels would result in increased use of these lands by the public.

    Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

  - Utility Corridors and Communications

    Under Alternative C, the utility corridor would be 1.5 miles long with a width of 1 mile (960 acres), the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new utility ROWs, consisting of the following types, would 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.

Alternative C would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities.

- Renewable Energy

  The DRMP allows for the development of renewable energy, although land use allocations for renewable energy vary by alternative. Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis to meet public demand. Under Alternative C solar or wind generating facilities would not be located in VRM Classes I and II. WAs and WSAs are exclusion areas under all alternatives. ACECs are exclusion areas under Alternative C.

  Under Alternative C, critical habitat for Peninsular bighorn sheep and quino checkerspot would additionally be excluded from the potential buildable land for wind energy, for a total of 7,753 acres.

  The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

- **Mineral Resources**

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACECs (Alternative C).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in

areas withdrawn from mineral entry, and these rights would be acquired to protect non-mineral resources, access to and development of metallic and non-metallic/industrial minerals would be affected.

- **Recreation Program**
  - Recreation Management

    Under all alternatives except Alternative A, 103,303 acres of SRMAs would be created. BLM lands outside of SRMAs are ERMAs. Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for any SRMAs, it creates 38,690 acres in accordance with the McCain Valley RAMP (DOI BLM 1979).

    Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon RMZ under Alternatives B, C, D, and E.

    Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

  - Transportation and Public Access

    Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the

conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

For WAs, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. The Pacific Crest NST is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized.

Access requiring authorization (uses requiring permits) could involve seasonal restrictions such as seasonal closures in Peninsular bighorn sheep critical habitat during lambing season.

Authorizations or leases could result in closure to areas for public access (i.e. geothermal wind, solar) as a result of public health and safety concerns. Access for authorized uses such as minerals on split-estate lands where BLM manages the subsurface would not necessarily give public access across private lands, but grant access only to the authorized user.

- **Social and Economic.** It is not expected that any of the proposed RMP alternatives would result in any significant economic impacts. A possible exception would be the potential for wind energy development. If and when a project is proposed to the BLM, the BLM and operator(s) will need to develop project-specific PODs, which would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

- **Environmental Justice.** The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental

justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

Under implementation of Alternative D, the following effects are anticipated:

- **Air Quality.** Under the Alternative D, there would be no air quality impacts.

- **Soil Resources.** There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area. Erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative D, construction of new wildlife waters would be authorized on a case-by-case basis; and the restoration of non-motorized routes of travel would occur.

- **Water Resources.** Approved activities have the potential to result in a variety of effects to water resources including reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water. Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative D, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores.

- **Vegetative Resources.** Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.

- **Wildlife Resources.** Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

- **Special Status Species.** Alternative D would eliminate grazing from all critical habitat which would result in no effect to special status species. Mineral entry would be allowed within critical habitat which could result in effects to some special status species. The parcel supporting quino checkerspot butterfly critical habitat is land-locked by state parks and private lands and has limited access and thus mineral entry is unlikely to affect this species.

- **Cultural Resources.** Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling.

  Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions extend additional consideration of cultural resources in the planning process and provide for additional protections and would therefore have a beneficial effect on any cultural resources that exist within the acquired property.

- **Paleontological Resources.** Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits.

Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions extend additional consideration of vertebrate fossils and scientifically significant invertebrate resources in the planning process and would have a beneficial effect on any that exist within the acquired property.

- **Visual Resources.** WAs and WSAs are classified as VRM Class I, which is the most restrictive class. Alternative D identifies many specific land areas as Class III lands and two as Class IV lands. Therefore this alternative would provide the greatest allowance for visual contrast in any future proposals for cultural modifications.

- **Special Designations.** The primary potential impacts to the two designated WAs within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and maintenance of structures as well as the structures themselves. WA values can be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts from construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area. Construction and maintenance of wildlife and range improvement facilities (e.g. wildlife waters) could degrade values for which these WAs were designated. Livestock grazing, where established at the time of designation of the two WAs, shall be allowed to continue irrespective of impacts on the wilderness characteristic. The presence of livestock and associated presence of structures and ranchers would have an impact on the wilderness characteristic of naturalness. Under Alternative D, grazing would be eliminated from critical habitat. This would reduce the extent of grazing and enhance the wilderness characteristics, primarily naturalness, of the Sawtooth WA. However, any new structures, such as fences, necessary to implement these alternatives would reduce the wilderness characteristics.

The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. WSA values could be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-

term impacts could result from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings. No impacts are expected from mining, mineral leasing, or mineral sales activities.

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: Vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

- **Livestock Grazing.** Under Alternative D, broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within grazing areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post-fire, forage quality, and palatability could increase due to the stimulation of vegetation. Range improvement projects (e.g., livestock and wildlife waters) would increase the amount of available water. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

- **Lands and Realty**

  - Land Tenure (Disposals, Acquisitions, and R&PPs)

    Disposals would result in fewer acres available within the BLM transportation and access network.

    Acquisition of lands through exchange, purchase, and donation is designed to improve management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to landlocked parcels would result in increased use of these lands by the public.

Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

- Utility Corridors and Communications

Under Alternative D, the utility corridor would be 1.5 miles long with a width of 1 mile (960 acres), the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new utility ROWs, consisting of the following types, would 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.

Alternative D would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities.

- Renewable Energy

Based on the wind energy potential model developed by PPM Energy (2006), there is a total of 12,764 acres of BLM-administered lands in the Planning Area that have the potential to support future wind energy projects, excluding both wilderness and wilderness study areas. This would apply to Alternatives A, B, D, and E.

The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

- **Mineral Resources**

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in

Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACECs (Alternative C).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in areas withdrawn from mineral entry, and these rights would be acquired to protect non-mineral resources, access to and development of metallic and non-metallic/industrial minerals would be affected.

- **Recreation Program**

  - Recreation Management

Under all alternatives except Alternative A, 103,303 acres of SRMAs would be created. BLM lands outside of SRMAs are ERMAs. Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for any SRMAs, it creates 38,690 acres in accordance with the McCain Valley RAMP (DOI BLM 1979).

Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower

and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon RMZ under Alternatives B, C, D, and E.

Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

- Transportation and Public Access

Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

For WAs, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. The Pacific Crest NST is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized.

Access requiring authorization (uses requiring permits) could involve seasonal restrictions such as seasonal closures in Peninsular bighorn sheep critical habitat during lambing season.

Authorizations or leases could result in closure to areas for public access (i.e., geothermal wind, solar) as a result of public health and safety concerns. Access for authorized uses such as minerals on split-estate lands where BLM manages the subsurface would not necessarily give

public access across private lands, but grant access only to the authorized user.

- **Public Health and Safety.** Potential public health and safety issues in the Planning Area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.

- **Social and Economic.** It is not expected that any of the proposed RMP alternatives would result in any significant economic impacts. A possible exception would be the potential for wind energy development. If and when a project is proposed to the BLM, the BLM and operator(s) will need to develop project-specific PODs, which would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

- **Environmental Justice.** The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

Under implementation of Alternative E (Preferred Alternative), the following effects are anticipated:

- **Air Quality.** Under the Alternative E, there would be no air quality impacts.

- **Soil Resources.** There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area. Erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative E, all BLM-administered lands would be unavailable for

livestock grazing; construction of new wildlife waters would be authorized on a case-by-case basis; and the restoration of non-motorized routes of travel would occur.

- **Water Resources.** Approved activities have the potential to result in a variety of effects to water resources including reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water. Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative E, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores; all BLM-administered lands would be unavailable for livestock grazing, which would reduce the amount of water used.

- **Vegetative Resources.** Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.

- **Wildlife Resources.** Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

- **Special Status Species.** Alternative E would eliminate grazing from critical habitat within the BLM-administered lands within the Planning Area. This would result in beneficial effects to special status species.

- **Cultural Resources.** Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Wildlife improvement projects could

concentrate wildlife in areas increasing the potential for trampling of surface artifacts and features.

Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions extend additional consideration of cultural resources in the planning process and provide for additional protections and would therefore have a beneficial effect on any cultural resources that exist within the acquired property.

- **Paleontological Resources.** Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of exposed vertebrate fossils and scientifically significant invertebrate deposits.

  Land disposal is a permanent loss in terms of BLM management and oversight and could therefore have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions extend additional consideration of vertebrate fossils and scientifically significant invertebrate resources in the planning process and would have a beneficial effect on any that exist within the acquired property.

- **Visual Resources.** WAs and WSAs are classified as VRM Class I, which is the most restrictive class. Alternative E would have approximately 10,000 fewer acres of Class II lands than Alternatives A, B, and C (this difference varies by alternative), because it designates the Lark Canyon and Cottonwood Campgrounds and the Airport Mesa area as Class III rather than Class II due to considerations for allowable visual contrast of cultural modifications. In addition, Alternative E identifies McCain Valley West as Class IV to accommodate renewable energy development.

- **Special Designations.** The primary potential impacts to the two designated WAs within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and

maintenance of structures as well as the structures themselves. WA values can be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts from construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area. Construction and maintenance of wildlife and range improvement facilities (e.g. wildlife waters) could degrade values for which these WAs were designated. Under this alternative, livestock grazing would be eliminated from WAs, thereby reducing impacts to the wilderness characteristic.

The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. WSA values could be impacted by vegetation treatments and wildfire suppression activities and management responses. Potential short-term impacts could result from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings. No impacts are expected from mining, mineral leasing, or mineral sales activities.

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: Vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

- **Public Health and Safety.** Potential public health and safety issues in the Planning Area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.

- **Livestock Grazing.** Under Alternative E, all BLM-administered lands would be unavailable for livestock grazing. Broad-scale vegetation management activities,

such as prescribed fire, could temporarily reduce the forage base within grazing areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post-fire, forage quality, and palatability could increase due to the stimulation of vegetation. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

- **Lands and Realty**
  - Land Tenure (Disposals, Acquisitions, and R&PPs)

    Disposals would result in fewer acres available within the BLM transportation and access network.

    Acquisition of lands through exchange, purchase, and donation is designed to improve management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to landlocked parcels would result in increased use of these lands by the public.

    Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

  - Utility Corridors and Communications

    Under Alternative E, the utility corridor would be 1.5 miles long with a width of 1 mile (960 acres), the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new utility ROWs, consisting of the following types, would 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.

Alternative E would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities.

- Renewable Energy

The DRMP allows for the development of renewable energy, although land use allocations for renewable energy vary by alternative. Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis to meet public demand. Under Alternative E, solar or wind generating facilities would not be located in VRM Classes I and II. WAs and WSAs are exclusion areas under all alternatives. ACECs are areas under Alternative E.

The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

- **Mineral Resources**

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACEC (Alternative C).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in areas withdrawn from mineral entry, and these rights would be acquired to

protect non-mineral resources, access to and development of metallic and non-metallic/industrial minerals would be affected.

- **Recreation Program**

  - Recreation Management

    Under all alternatives except Alternative A, 103,303 acres of SRMAs would be created. BLM lands outside of SRMAs are ERMAs. Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for any SRMAs, it creates 38,690 acres in accordance with the McCain Valley RAMP (DOI BLM 1979).

    Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon RMZ under Alternatives B, C, D, and E.

    Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

- Transportation and Public Access

  Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

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- **Environmental Justice.** The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

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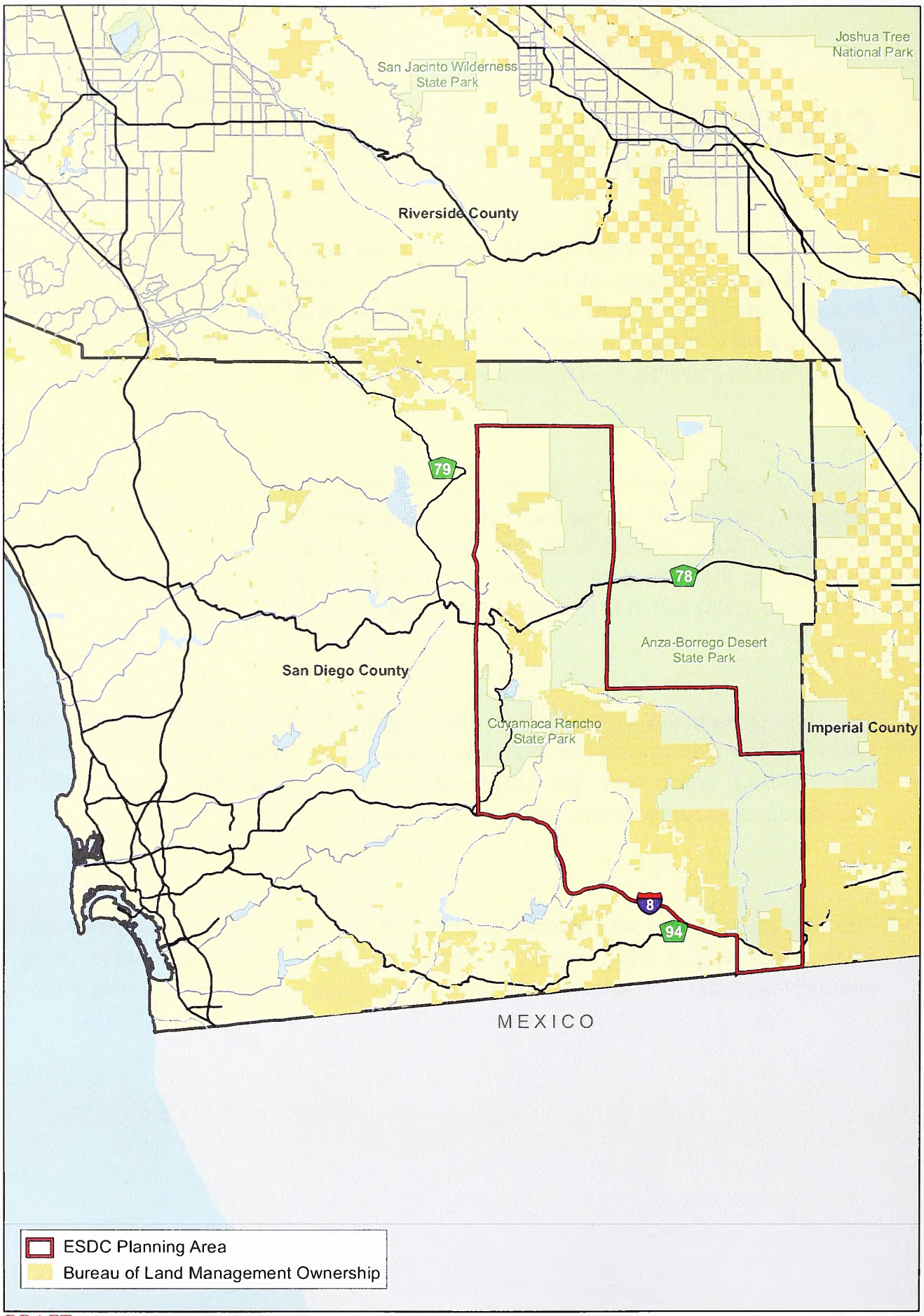
CHAPTER 1.0
Introduction

The Bureau of Land Management (BLM) El Centro Field Office (ECFO) is developing a new Resource Management Plan (RMP) for the Eastern San Diego County (ESDC) Planning Area (Planning Area). The RMP will be developed for federal surface and mineral estate managed by the ECFO within the eastern portion of San Diego County in California. The Planning Area encompasses approximately 103,303 acres (Figure 1-1).

The BLM has determined that an Environmental Impact Statement (EIS) will be necessary, as required by the National Environmental Policy Act of 1969 (NEPA). This document follows the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of The NEPA (40 Code of Federal Regulations [CFR] 1500-1508) and BLM's NEPA Handbook (H-1790-1).

The U.S. Department of the Interior (DOI) BLM ECFO is the lead agency for the RMP/EIS. The lead agency has approval or disapproval authority over the description of the proposed action and alternatives, the format and analysis of the RMP/EIS, stakeholder collaboration, and public involvement procedures.

The BLM must comply with all applicable federal laws, regulations, and agency policies when addressing a wide variety of issues and analyzing a reasonable range of alternatives for the BLM-administered lands and resources within the Planning Area.



DRAFT

EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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Miles
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N
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CALIFORNIA
Sacramento
Planning Area
El Centro

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
February 2007

The Bureau of Land Management makes no warranties, implied or expressed, with respect to information shown on this map.

FIGURE 1-1: Planning Area

1.1 Purpose of and Need for Action

The purpose of the Eastern San Diego County RMP is to provide guidance in the management of the lands and resources administered by the El Centro Field Office 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 Eastern San Diego County RMP will also be comprehensive in nature, providing guidance for management of all uses and resources administered by BLM in the Planning Area.

The need to develop the Eastern San Diego County RMP arises from numerous changes in circumstances since the current land use plan decisions were adopted. The following list of specific factors illustrates the need for preparation of an updated management plan. The existing Management Framework Plan (MFP) for the area was adopted in 1981 (DOI BLM 1981). Many conditions, both social and resource-based, have changed since their adoption, including:

- Listing and/or additional habitat needs for species protected under the federal 1973 Endangered Species Act (ESA) that the current management plan does not specifically address.

- San Diego County and areas adjacent to the Planning Area, as well as the entire State of California, have undergone changes in social and economic conditions since 1981. These changes have led to increases in demand for use of the public lands for recreation and energy production as well as an increased awareness and social value placed on the cultural and natural resources in the Planning Area. Particularly, recreation on public lands has changed dramatically over the past 25 years, both in levels of use and in the kinds of recreational activities, much of which is not addressed in the existing management plan.

- In recent years, local and regional conservation organizations have become more actively involved in acquiring lands to donate to the BLM for conservation purposes. BLM must provide management of these lands consistent with the purposes for which they were acquired.

- BLM's guidance and policy related to land use planning, energy development, fire management, and other programs have been revised since the current plan was adopted.

1.2 Planning Area

The Eastern San Diego County Planning Area spans a portion of the eastern escarpment of Southern California's Peninsular Ranges. It is a land of remarkable diversity, encompassing a range of environments from pine forests and flowing streams to palm oases overlooking shimmering desert basins. As early Spanish, Mexican, and American pioneers and settlers traversed the region on their way to developing coastal population centers, they encountered small bands of Kumeyaay and Mountain Cahuilla Indians. Except for cattlemen who established isolated ranches in order to graze their stock in the grassy valleys and shrub-covered hills, few of the newcomers settled here. Today, much of the region remains wild and uncrowded in spite of the steady growth of the urban society only a short distance to the west.

Scattered in a north–south band along the mountain front are 103,303 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 (see Figure 1-1).

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1.3 Planning Process

Revision of an existing plan is a major federal action for the BLM. NEPA requires federal agencies to prepare an EIS for major federal actions; thus, this EIS accompanies the revision of the existing plan. This EIS analyzes the impacts of five alternative RMPs for the Planning Area, including Alternative A (No Action). Alternative A reflects current management (the current plan). NEPA requires analysis of a No-action Alternative.

The ECFO met individually with several government agencies in the ESDC area to discuss the DRMP/EIS. The ECFO staff distributed DRMP materials and conducted presentations when requested. The ECFO facilitated discussions with the agencies, which generated issues and concerns that are documented in the *Final Scoping Report* (DOI BLM 2005) on file at the ECFO.

The BLM coordinates and consults with the California State Historic Preservation Office (SHPO) concerning cultural resources within the Planning Area. The BLM has a national Memorandum of Agreement (MOA) with the United States Fish and Wildlife Service (USFWS) to cooperate on Section 7 Consultation for the ESA. California Department of Fish and Game (CDFG) has a statewide Memorandum of Understanding (MOU) with BLM and would use this agreement to work collaboratively with the ECFO. Numerous federal, state, and local agencies and tribal interests were identified by the BLM ECFO at the outset of this RMP effort, and these entities were contacted in writing to determine their interest in serving as cooperators on this RMP. To date no governmental entities have requested cooperating agency status for the ESDC RMP/EIS planning effort.

Public meetings for the ESDC RMP/EIS were conducted during the initial public scoping period on September 8 and 9, 2004 in El Centro and San Diego, respectively. These public meetings were held to gain public input on identifying issues, concerns, and alternatives to be addressed in the RMP. A Social and Economic Workshop was conducted on June 15, 2006 in Julian. Information gathered by the BLM at these meetings has been incorporated into this Draft Resource Management Plan/Draft Environmental Impact Statement (DRMP/EIS).

This DRMP/EIS describes five alternative land use plans (including the Preferred Alternative) and environmental consequences of each. Chapter 1 describes the purpose of and need for the plan, the role of BLM, and public participation in the DRMP/EIS process.

Chapter 2 provides a description of each alternative land use plan. Chapter 3 describes the affected environment in the Planning Area. Chapter 4 describes potential direct, indirect, and cumulative effects associated with each alternative land use plan and mitigation that would be incorporated.

1.4 Decision Framework

Defining the planning issues and planning criteria represents the first steps in narrowing the scope of the RMP revision. The planning issues and planning criteria provide the framework in which RMP decisions are made and refer to what is established or determined by the final (approved) RMP. The RMP will provide land use plan decisions for the following categories:

- Physical, biological, and heritage resources
- Resource uses and support
- Special designations.

In the context of these categories, the planning team develops management strategies aimed at providing viable options for addressing planning issues. The management strategies provide the building blocks from which general management scenarios and, eventually, the more detailed resource management alternatives are developed. The resource management alternatives reflect a reasonable range of management options that fall within limits set by the planning criteria. The planning issues and planning criteria used to revise the existing plan are described in the following sections.

1.4.1 Public Scoping

A Notice of Intent (NOI) to prepare a 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 El Centro Field Office. The public was then given the opportunity to state for the record their preferences for management priorities of public lands under the

ESDC 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.

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. This is discussed in further detail in Section 5.1.3.

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. See Appendix A—Results of Scoping for details on the issues and concerns that were raised by the public.

1.4.2 Planning Issues

The BLM's Land Use Planning Handbook defines planning issues as "... disputes or controversies about existing and potential land and resource allocations, levels of resource use, production, and related management practices" (BLM 2005). Issues identified during scoping for this RMP revision process comprise two categories:

- Issues within the scope of the EIS that are used to develop alternatives or are otherwise addressed in the EIS
- Issues outside the scope of the EIS or that could require policy, regulatory, or administrative actions.

Those planning issues determined to be within the scope of the EIS are used to develop one or more of the alternatives or are addressed in other parts of the EIS. A reasonable

range of alternatives provides various scenarios how BLM and cooperating agencies can address key planning issues including the management of resources and resource uses in the Planning Area. In other words, key planning issues serve as the rationale for alternative development. The key planning issues identified in the scoping report were:

Issue #1 - How will the natural resources values of eastern San Diego County public lands be managed?

Issue #2 - How will human activities and uses (including recreation and off-highway vehicle [OHV] use) be managed?

Issue #3 - How will the RMP be integrated with other agency and community plans?

Other key planning issues identified for this EIS include: access and transportation, special designation areas, land health, minerals, livestock grazing, recreation, special status species, air resources, soil resources, water resources, vegetative resources, wildlife resources, cultural resources, paleontological resources, visual resources, public health and safety, social and economic impacts, and environmental justice.

1.4.3 Planning Criteria

Planning criteria are the standards, rules, and guidelines that help guide the RMP process. These criteria influence all aspects of the planning process, including inventory and data collection, development of issues to be addressed, formulation of alternatives, estimation of impacts, and selection of the Preferred Alternative. In conjunction with the planning issues, these criteria ensure that the planning process is focused and incorporates appropriate analyses. Planning criteria are developed from appropriate laws, regulations, and policies. The criteria also help guide the final plan selection and are used as a basis for evaluating the responsiveness of the planning options.

Additional planning criteria can be added at any point in the planning process.

The following are the Planning Criteria utilized for this document:

1. The plan will be completed in compliance with the Federal Land Policy and Management Act (FLPMA), ESA, NEPA, and all other relevant federal law, executive orders (EOs; including wilderness legislation), and management policies of the BLM.

2. The planning team will work collaboratively with the State of California, San Diego County, tribal governments, municipal governments, other federal agencies, and all other interested groups, agencies, and individuals.

3. Where planning decisions have previously been made that are not at issue but still provide important guidance, those decisions will be included in the new DRMP.

4. The planning process will include an EIS that will comply with the NEPA standards.

5. The plan will set forth a framework for managing recreational activities in order to maintain existing natural landscapes and to provide for the enjoyment and safety of the visiting public.

6. Native American tribal consultations conducted in accordance with policy and tribal concerns will be given due consideration. The planning process will include the consideration of any impacts on Indian trust assets.

7. Consultation with the SHPO will be conducted throughout the plan.

8. The plan will identify opportunities for using cultural properties for scientific, educational, recreational, or experimental purposes.

9. The lifestyles and values of area residents will be discussed and considered in the plan.

10. The plan will recognize the state's authority to manage wildlife, including hunting and fishing, within the Planning Area in accordance with the current MOU.

11. The RMP will address transportation and access, and will designate off-road vehicle use areas as open, limited, or closed. Route designation is not a planning level decision, but is rather an implementation level decision. Individual routes will be analyzed in this EIS, however, to accommodate resource users, recreational users, protection of resource values, and administrative needs. Individual routes will be designated as motorized, non-motorized, and unavailable.

12. Lands that will be open to mineral leasing will be identified in the plan. Where the DRMP identifies lands as open to mineral leasing, it will also define any constraints to surface use.

13. Visual Resource Management classification will be conducted to address the public's concerns about open space and natural vistas.

14. Consultations with the USFWS will take place throughout the plan process.

15. Minerals management will be consistent with FLPMA and existing policy and regulation including the Mining and Minerals Policy Act of 1970, Section 102(a)(12) of FLPMA, the National Materials and Minerals Policy, Research and Development Act of 1980, and current BLM Mineral Resources policy.

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1.5 Laws, Regulations, and Executive Orders

The BLM planning process is governed by the FLPMA of 1976 and the BLM Planning Regulations in 43 CFR Part 1600. Land use plans ensure that public land is managed in accordance with the intent of Congress as stated in FLPMA, under the principles of multiple use and sustained yield. As required by FLPMA, public land must be managed in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, would preserve and protect certain public land in their natural condition, provide food and habitat for fish, wildlife, and domestic animals; and that would provide for outdoor recreation and human occupancy and use by encouraging collaboration and public participation throughout the planning process. In addition, public land must be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber from public land. Land use plans are the primary mechanism for guiding BLM activities to achieve the agency's mission and goals. BLM's Land Use Planning Handbook (H-1601-1) provides guidance for preparing land use plans, including specific guidance for each program and resource (DOI BLM 2005).

In addition to FLPMA, NEPA, and their associated regulations, BLM must comply with the mandate and intent of all federal laws (and any applicable regulations) and EOs that apply to BLM-administered lands and resources in the Planning Area. While many laws may appear to be in conflict with others, the RMP/EIS process is intended to develop land use plan decisions that resolve such conflicts and meet the multiple use and sustained yield mandate of FLPMA. Appendix B – *Applicable Laws, Regulations, and Executive Orders* – provides a listing of laws, regulations and EOs that apply to BLM-administered land and resources in the Planning Area.

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1.6 Related Plans and Programmatic Records of Decision

The BLM-administered lands in the Planning Area are presently managed in accordance with the *Eastern San Diego County Planning Unit Management Framework Plan* (April 1981). The MFP was amended in 1982, after the California Desert Plan was approved.

The RMP/EIS would incorporate the following BLM programmatic Records of Decisions (RODs) and environmental analyses:

- Record of Decision for the BLM Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Final Environmental Impact Statement (FEIS) would be incorporated upon its approval. In the meantime, the ROD dated November 7, 1988 for the BLM California Vegetation Management EIS would be incorporated.
- Wind Energy Development on BLM-Administered Lands in the Western United States Final Programmatic Environmental Impact Statement (2005)
- National Rangeland Management FEIS (2005)

Other related plans (BLM and non-BLM), which the ESDC RMP will be consistent with to the maximum extent possible, are:

- BLM South Coast RMP (under revision)
- BLM California Desert Conservation Area Plan (1980), as amended
- Anza-Borrego State Park General Plan and Final Environmental Impact Report (FEIR; 2004)
- Collaboration with the County of San Diego in development of the East San Diego County Multi-Species Conservation Program (MSCP)

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CHAPTER 2.0
Description of Alternatives

2.1 Introduction

This chapter describes alternatives, including the Preferred Alternative (DRMP), to address the various combinations of public land uses and resource management practices within the Eastern San Diego County Planning Area. This chapter is organized by resources and uses rather than by alternatives, so that readers may more easily compare how proposed management under each of the alternatives may affect the resources and uses under the BLM's administration. Following is a brief general description of each of the five alternatives. Detailed management prescriptions are presented under the applicable program headings.

The differences between alternatives are displayed in the tables and figures associated with the program. Any decisions not shown in tables or figures are common to all of the alternatives.

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2.2 General Description of Each Alternative

- **Alternative A (No Action)** describes the continuation of the present management of the Planning Area. Alternative A provides an opportunity to compare the current management with various strategies suggested to be analyzed for future management (Alternatives B, C, D, and E). Alternative A will serve as a baseline for most resources and land use allocations.

- **Alternative B** provides visitors with opportunities to experience natural and cultural resource values of the Planning Area. It proposes a combination of natural processes and active management techniques for resource and use management and it provides access through a transportation network.

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

- **Alternative D** generally provides more opportunities for development such as renewable energy, transportation and utility rights-of-way (ROWs), and enhanced recreational opportunities (including motorized use).

- **Alternative E (Preferred)** 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. It is generally managed with decisions that have a greater balance of multiple uses. This alternative draws features from all of the other alternatives.

Throughout this chapter, information is displayed at a broad overview level which then moves to the specific. The planning document is presented first by resource, the presence or abundance of which may vary from location to location within the Planning

Area. Two different types of land use plan decisions are presented for each resource under all alternatives: Goals and Objectives and Management Actions.

- Goals and Objectives are the desired outcomes for resource conditions and resource uses.
- Management Actions are actions, allowable use, and land designations that BLM would implement under a given alternative to achieve the goals and objectives for a particular resource or resource use.
- Additional decisions that provide a better understanding of decisions required in the program guidance include Rangeland Health Standards, Land Tenure Adjustment, and Special Designations. These decisions must also support the goals outlined in the Goals and Objectives.

2.3 Comparison of Alternatives

Elements of alternatives that vary are presented in table and map format. All other elements discussed are common to all of the alternatives, unless otherwise indicated.

2.3.1 Rangeland Health Standards Management

2.3.1.1 Alternative A (No Action)

Continue to utilize existing National Fallback Standards for grazing allotments. Fallback standards were developed to implement 43 CFR 4180 grazing regulations. The fallback standards for rangeland health are:

1. Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, 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.

4. Healthy, productive, and diverse populations of native species exist and are maintained.

2.3.1.2 Alternatives B–E

Adopt the following regional standards of rangeland health. The proposed standards of rangeland health are:

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.

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.

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 plants 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.

Water Quality: Water quality would meet 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
- Best management practices (BMP) would be implemented.

2.3.2 Air Resources Management

The FLPMA and the Clean Air Act (CAA) of 1970 and Amendments of 1977 and 1990 (42 United States Code [U.S.C.] 7401 et seq.) prohibit BLM or any federal land management agency from conducting, supporting, approving, licensing, or permitting

any activity on federal land that does not comply with all applicable local, state, and federal air quality laws, statutes, regulations, and implementation plans. In support of these regulations, a program has been developed that provides benefits to air quality and other resources by decreasing air pollutant concentrations, increasing visibility, and decreasing atmospheric deposition. Adherence to air quality regulatory programs through coordination with other federal and state agencies is a key to air quality management success.

Other applicable regulations include:

- Applicable National Ambient Air Quality Standards (Section 109)
- State Implementation Plans (Section 110)
- Control of Pollution from Federal Facilities (Section 118)
- Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.)
- Conformity Analyses and Determinations (Section 176(c))

2.3.2.1 Goals and Objectives

- 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.
- 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.

2.3.2.2 Management Actions Common to All Alternatives

- 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 DRMP/EIS.

2.3.3 Soil Resource Management

The Planning Area contains a wide variety of soil types, as might be expected in a zone which spans the transition from low desert to coastal mountains.

This variety of types is the result of diversity in parent material, relief, climate, living organisms, and age of the soils. The majority of Planning Area falls in a moderate erosion class. Approximately 40 percent of the land consists of slope of 50 percent or greater. Despite the high incidence of steep slopes, soil loss due to water erosion is not of major significance because of low annual surface runoff and the high percent of ground cover, which averages 48 percent throughout the Planning Area.

Twenty-four soil series composed of thirty different soil types are found on BLM-administered lands in the Planning Area (USDA 1973). The soil series represented are: acid igneous rock land, Badland, Bancas, Boomer, Calpine, Carrizo, Crouch, Holland, Indio, Kitchen Creek, La Posta, loamy alluvial land, Mecca, metamorphic rock land, Mottsville, Ramona, Reiff, Riverwash, Rositas, rough broken land, Sheephead, sloping gullied land, Tollhouse, and Stony land.

2.3.3.1 Goals and Objectives

- Manage soils to maintain productivity and to minimize erosion.
- Maintain or improve ecological condition to proper functioning conditions in riparian areas to minimize soil erosion.
- Meet Rangeland Health Standard #1, as related to soils per Standards of Rangeland Health (see section 2.3.1 Rangeland Health Standards Management).

2.3.3.2 Management Actions Common to All Alternatives

- 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.

- Minimize surface disturbance from authorized activities. Post-activity, disturbed surfaces would be restored to a pre-disturbance or stable condition.
- 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.
- Incorporate erosion control measures into projects on a case-by-case basis.
- Manage biological resources to minimize erosion including the restoration of damaged riparian areas and promoting healthy native plant groundcover.

2.3.4 Water Resources Management

The objective of the Federal Water Pollution Control Act (Clean Water Act [CWA] PL 92-500, as amended; 33 U.S.C. §§ 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters (Section 101a). Under Sections 401 and 404, the CWA regulates point and non-point-source pollution and, along with EO 11990 titled *Protection of Wetlands*, impacts to wetlands.

Other applicable regulations include the California Water Code.

Surface waters in the Planning Area can be divided into watersheds, or portions of the landscape that collect runoff from the surface, concentrate it into channels, and conduct the resulting flow to a definable outlet. The Planning Area occurs within the San Diego (Region 9) and the Colorado River (Region 7) watershed basins. Within these watersheds, smaller hydrologic units are defined.

Groundwater within the Planning Area occurs primarily within alluvial deposits between fault block mountain ranges. 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). BLM works in cooperation with SWRCB and DWR.

2.3.4.1 Goals and Objectives

2.3.4.1.1 General

- Ensure the physical presence and legal availability of surface water and groundwater on public lands.
- Ensure that those waters meet or exceed federal and California water quality standards for specific uses.
- Ensure that water quality achieves or is making significant progress toward achieving established BLM management objectives such as meeting wildlife and recreational needs.

2.3.4.1.2 Surface Water

- Identify and protect surface waters from the standpoint of human health concerns, aquatic ecosystem health, or other public uses.
- Preserve and enhance stream bank and channel condition.
- Identify area-wide use restrictions or other protective measures to meet federal, tribal, state, and local water quality requirements.

2.3.4.1.3 Groundwater

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

2.3.4.2 Management Actions Common to All Alternatives

- Maintain existing proper functioning conditions of watersheds by applying BMPs.
- Prevent or reduce water quality degradation through implementation of applicable BMPs or other specific mitigation measures, if appicable.
- 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.

- Apply BMPs on public land within municipal watersheds to protect water quality and quantity.
- Control erosion on authorized vehicle routes, burned areas, riparian areas, and grazed areas to protect water quality through application of BMPs.

2.3.5 Vegetation Resource Management

Terrestrial ecosystems within the Planning Area include desert fan-palm oases, mixed conifer woodland, creosote scrub, enriched desert scrub, oak woodlands, and chaparral. BLM strives to maintain the health of riparian 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).

The basis for managing vegetation, riparian-wetland, and invasive or noxious weeds for BLM lands can be found in the following federal laws, regulations, and policies:

- Taylor Grazing Act of 1934
- Public Rangelands Improvement Act of 1978
- CWA of 1977
- EO 11990 Protection of Wetlands
- Federal Noxious Weed Act of 1974
- EO 13112 Invasive Species Control
- BLM Manual Section 1740 Renewable Resource Improvements and Treatments
- BLM Manual 9011 Chemical Pest Control
- 1737-9 Process for Assessing Proper Functioning Condition: Riparian Area Management
- 1737-15 A User Guide to Assess Proper Functioning Condition and Support for Lotic Areas (This Technical Reference supplements TR-1737-9, Process for Assessing Proper Functioning Condition: Riparian Area Management.)

- Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Final Programmatic Environmental Impact Statement (FPEIS)(DOI BLM 2005b)
- Endangered Species Act of 1973 as amended
- Natural Resources Conservation Service (NRCS) Ecological Site Guides

In addition, the following non-federal agreements and laws apply to the Planning Area:

- Cooperative Fire Protection Operating Plan with California Department of Forestry and Fire Protection (CDFFP) (USDA 2001)
- California Native Plant Protection Act of 1977
- California Endangered Species Act
- 1988 Food and Agricultural Code of California (Division 23, California Desert Native Plants Acts).

2.3.5.1 Plant Communities

2.3.5.1.1 Goals and Objectives

Planning Areawide

- 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.
- Maintain and enhance a mosaic of native plant communities in upland and riparian areas.
- Restore unproductive or non-functioning upland and riparian sites to desired plant communities that are functioning properly, based upon ecological site potential.
- Promote wildlife forage and habitat values and maintain and/or restore intrinsic biological integrity and value for all native plant communities.

- 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.
- Protect or restore native species in upland and riparian communities through an integrated weed management approach emphasizing prevention, early detection, and eradication of invasive weeds.
- Ensure that forage on rangelands continues to support wildlife in a manner consistent with other resource management practices or uses.
- Ensure that sensitive plant communities are protected from ground-disturbing activities, including recreation uses.
- Maintain plant communities that secure soil resources and protect against erosion and air quality degradation.

Desired Plant Communities

Mixed Riparian Woodlands

- Promote riparian woodlands that contain a diversity of native trees adapted to periodic flooding.
- Promote bank vegetation composed of native species capable of withstanding flood events to prevent soil loss and bank erosion.
- Promote riparian-associated habitat to enhance wildlife habitat.

Oak Woodlands

- 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.
- Ensure that oak habitats are stable or expanding with no net loss and minimal habitat fragmentation.

Desert Wash

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

Semi-Desert Chaparral

- Promote semi-desert chaparral communities for Native American vegetation collection.
- Promote a natural fire regime to allow natural succession and minimize the likelihood of catastrophic wildfires.
- 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

- Promote desert fan palm oasis communities for Native American cultural values.
- Maintain desert fan palm oasis communities as an indicator of water resources.

Mixed Conifer Woodland

- 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

- Maintain cacti communities that have diverse vegetative composition and structure from small shrubs to large trees (such as ironwood, agave, palo verde, and mesquite) interspersed with a variety of cacti (such as fish-hook cactus, prickly pear, cholla, barrel cactus, beavertail, and hedgehog).
- Promote enriched desert scrub communities for Native American cultural values.

2.3.5.1.2 Management Actions Common to All Alternatives

- 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.
- 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.
- Restore surface disturbance 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.
- Restore surface disturbance from illegal trespass activities with rehabilitation measures including imprinting, contouring, debris and brush replacement, native planting or seeding (where appropriate), and invasive plant treatment.
- 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.
- 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.
- Surface-disturbing activities will be designed to avoid impacts to riparian areas, desert fan palm oases, oak woodlands, and desert wash would be avoided where possible. Where avoidance is not possible, these areas would be restored to their previously undisturbed or native condition. Restoration would follow approved protocol and include watering and maintenance until establishment.

- 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 would only be removed from public lands pursuant to applicable federal and state laws and regulations governing the sale, disposal, and transportation of plants.
- Use native plant materials for landscaping at developed recreation sites within public lands.
- Treat non-native invasive species, where appropriate, to meet management objectives.
- Protect desired plant communities through construction of fire breaks or hazard fuels reduction, where appropriate.

2.3.5.1.3 Management Actions by Alternative

Table 2-1 presents the management actions that vary by alternative.

2.3.5.2 Priority Plant Species

Priority plant species are rare, unusual, or key species that are not BLM sensitive or listed as threatened and endangered. They are worthy of special treatment and indicate ecological health, biological diversity, and unique habitats. Priority plant species have been located on or near the BLM-administered lands within the Planning Area. The priority plant species list (see Table 3-3) would be updated on a regular basis to reflect new information and survey data. These species have ecological importance, rarity, and human interest. Identification of priority plant species would help prevent the avoidable loss of these plants due to development and implementation of other multiple-use objectives.

2.3.5.2.1 Goals and Objectives

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

TABLE 2-1
MANAGEMENT ACTIONS FOR VEGETATION RESOURCE MANAGEMENT BY ALTERNATIVE

Management Actions	A	B	C	D	E
Cooperate with the Laguna-Moreno Demonstration in prescribed burning on BLM land.	X				
Allow prescribed burning on a case-by-case basis.		X	X	X	X
Prohibit removal of trees in Buck Canyon, Chariot Canyon, Oriflamme Canyon, and McCain Valley areas	X				
Prohibit removal of native standing trees, alive or dead, with the exception of fire management, health and human safety, or disease control.		X	X	X	X
Remove tamarisk using mechanical and herbicide applications following BLM policy on minimum tools in Wilderness.		X		X	X
Remove tamarisk by mechanical means. Herbicides will not be used on BLM-administered lands within the Planning Area for tamarisk removal.			X		
Limit the introduction of non-native plants through an education program partnered with equestrian recreational users, OHV users, and other recreational users.		X	X	X	X
Protect riparian habitat throughout the Planning Area by excluding livestock grazing, redirecting routes, and requiring permits to collect plants from riparian areas.	X				
Riparian areas would be avoidance areas for all commercial and non-commercial surface disturbance activities.		X		X	X
Riparian areas would be exclusion areas for all commercial and non-commercial surface disturbance activities.			X		
Perform revegetation projects that promote riparian area proper functioning condition and recruitment of oaks in uplands adjacent to riparian areas.		X	X	X	X
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.		X	X	X	X
Rehabilitation priority would be given to riparian areas, desert fan palm oases, oak woodlands, and desert wash, habitats that support Special Status Species and Areas of Critical Environmental Concern (ACECs).		X	X	X	X

- 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.

2.3.5.2.2 Management Actions Common to All Alternatives

- Minimize or mitigate loss of habitat or fragmentation of priority plant species populations.
- To mitigate for surface disturbing activities, avoid priority plant species where possible. Where avoidance is not possible, these populations would be restored to their previously undisturbed or native condition after completion of the activity.

Restoration would follow approved protocol and include watering and maintenance until establishment.

- Implement protection and restoration measures such as fencing, invasive weeds treatment, and native plants seed collection for the priority plant species.
- Treat non-native invasive species where appropriate to protect priority plant species.

2.3.5.3 Invasive Non-native Plants

Non-native, invasive, and state and federally-listed noxious weed species collectively constitute one of the gravest threats to the biodiversity of BLM lands. Two critical components of managing these species are 1) identifying those species that threaten biodiversity and other ecological functions and values and 2) prioritizing species for management efforts, which must be based, at least in part, on the ecological impacts imparted by these invaders. Appendix C provides lists of weed species maintained by the U.S. Department of Agriculture (USDA), California Department of Food and Agriculture, and California Invasive Plant Council.

Non-native invasive species degrade aesthetic vegetation values, tourism opportunities, and degrade recreational value of public lands. Native species in upland and riparian ecosystems are competitively reduced, and the ecological process altered when non-native plants (both noxious and invasive weeds) become established and flourish.

2.3.5.3.1 Goals and Objectives

- 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.

2.3.5.3.2 Management Actions Common to All Alternatives

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

- 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.
- Treat fire breaks as needed to control the introduction and spread of non-native invasive species.
- Treat tamarisk (*Tamarix spp.*) and other riparian invasive, non-native species in the Planning Area (see Table 2-1 above for variation by alternatives).
- Require BLM contractors and employees to clean vehicles after traveling in areas of highly noxious or invasive weeds infestation.

2.3.5.4 Vegetative Use Authorization

BLM manages vegetation for habitat, multiple use, and sustained yield. This section describes what authorizations are needed to collect plant material from public land and what activities do not require written authorization.

2.3.5.4.1 Goals and Objectives

- Promote appropriate levels of dead and downed wood on the ground to provide wildlife habitat and reduce soil erosion.
- Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.

2.3.5.4.2 Management Actions Common to All Alternatives

- Wood cutting for commercial purposes is not allowed in the Planning Area.
- Wood collection not allowed within ACECs.

2.3.5.4.3 Management Actions by Alternative

The following management actions presented in Table 2-2 vary by alternative.

TABLE 2-2
MANAGEMENT ACTIONS FOR VEGETATIVE USE AUTHORIZATION BY ALTERNATIVE

Management Actions	A	B	C	D	E
Prohibit removal of trees in Buck Canyon, Chariot Canyon, Oriflamme Canyon, and McCain Valley Areas.	X				
Prohibit removal of native standing trees alive or dead with the exception of fire management, health and human safety or disease control.		X	X	X	X
In McCain Valley area, allow wood gathering for campfires only where posted.	X				
Allow gathering of dead, downed wood for personal use only.		X		X	X
Prohibit collection of dead, downed wood for personal use.			X		
Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans. All other vegetation collecting would 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 would be given priority.		X		X	X
Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans. No commercial vegetation collection would be permitted. All other collection is on a case-by-case basis.			X		

Allowable Uses Requiring Permits

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

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

- **Salvage Plant Collection.** Plant salvage would be allowed within the Planning Area on a case-by-case basis. Plant salvage would require prior written authorization from BLM as well as a permit from the USDA as required by the California Native Plant Protection Act.

Allowable Uses Not Requiring Permits

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, except in certain areas of McCain Valley under Alternative A.

- Per 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; and

  (5) Tamarisk in any quantities.

- Free use, without permit, of culturally important plants may be granted for traditional cultural gathering of vegetation by Native Americans.

If monitoring indicates potential resource degradation closure to firewood collection would be implemented using adaptive management. The collection and possession of ironwood at any time would be prohibited.

Prohibited Uses (Collection Not Allowed)

The public is prohibited from collecting:

(1) Live cactus 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.

2.3.6 Wildlife Resource Management

The Sikes Act of 1974 authorized the DOI in cooperation with 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 (both game and non-game) on public lands within its jurisdiction. In addition to the Sikes Act, the following laws, regulations, and policies direct the management of fish and wildlife on BLM-administered public lands:

- Migratory Bird Treaty Act of 1918
- Fish and Wildlife Coordination Act of 1958
- Fish and Wildlife Conservation Act of 1980
- EO 13112 Invasive Species
- EO 13186—Conservation of Migratory Birds
- BLM Manual 6500—Wildlife, Fish, and Plant Resources
- BLM Manual 6740

The County of San Diego is in the process of developing the East County MSCP for the unincorporated lands of San Diego County. The BLM is cooperating in the preparation of this plan.

The Bureau of Land Management works cooperatively with California Department of Fish and Game. Under California laws, the California Department of Fish and Game is responsible for the preservation and management of fish and wildlife found within the state of California. The BLM is likewise responsible for the management of fish and wildlife habitat on BLM administered lands. BLM assists CDFG by providing the appropriate agreements or permits for conducting wildlife management activities on BLM lands, as well as assist with the collection of and sharing of data. Under the Sikes Act, the Bureau contributed to development of the McCain Valley Wildlife Management Area and Management Plan. BLM law enforcement patrols and enforces game violations on BLM lands.

In addition to the goals and objectives, and management actions presented in this section, the Lands and Realty, Livestock Grazing, and Vegetation Resources Management sections also contain goals and objectives and management actions that provide additional wildlife habitat conservation measures.

2.3.6.1 Planning Areawide

2.3.6.1.1 Goals and Objectives

- Promote and maintain healthy key habitats (i.e., riparian areas, desert washes, oak woodlands, abandoned mines) and associated wildlife assemblages.
- Promote wildlife resources that would meet conservation, socio-economic (e.g., hunting, watchable wildlife), and tribal needs.
- Provide well-distributed habitat and connectivity corridors capable of supporting self-sustaining populations of interacting groups of priority species for biodiversity and genetic viability.
- Provide suitable habitat capable of maintaining stable or increasing trends in abundance to help keep species from becoming federally listed.
- Ensure that livestock waters provide safe, usable water for wildlife.
- Maintain natural and man-made wildlife waters for ecological integrity and to promote biological diversity.

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

2.3.6.1.2 Management Actions Common to All Alternatives

- 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 would be implemented in coordination with CDFG and/or USFWS, as necessary.
- 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.
- Manage invasive and pest species or species identified as pests in accordance with applicable BLM or CDFG management policies depending on administrative area.
- Prohibit livestock grazing when native wildlife forage (defined as food sources for animals, especially when taken by browsing or grazing) or water sources would be adversely affected.
- Design and implement vegetation, fire and fuels, and watershed resource management-related projects that would promote enhancement of existing habitat conditions or restoration of degraded habitat conditions for native wildlife species. Vegetation and fuels management for wildlife habitat improvement should 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.

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

2.3.6.1.3 Management Actions by Alternative

The following management actions presented in Table 2-3 vary by alternative.

TABLE 2-3
MANAGEMENT ACTIONS FOR WILDLIFE RESOURCE MANAGEMENT BY ALTERNATIVE

Management Actions	A	B	C	D	E
Continue management under Management Framework Plan (MFP) and Interim Measures such as prohibiting removal of trees and snags used as raptor perches, prohibiting new intensive development in oak groves, and protecting riparian habitat.	X				
Protect the habitat of sensitive wildlife species throughout the Planning Area (BLM sensitive).	X				
Maintain current wildlife waters through cooperation with CDFG and volunteer contributions.	X				
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.		X		X	X
Maintain current wildlife waters through CDFG and volunteer contributions. No construction of new wildlife waters.			X		
Provide 15 animal unit months (AUMs) for mule deer at their present population of about 100 deer over 38 square miles in the McCain Valley area.	X				
Conduct prescribed burns to benefit wildlife habitat		X	X	X	X

Note: See Lands and Realty, Vegetation Resources, and Livestock Grazing sections for additional habitat conservation actions that would affect wildlife resources.

2.3.6.2 Priority Wildlife Species

Proposed priority species for the Planning Area include raptors, non-game migratory birds, bats, and game animals.

2.3.6.2.1 Raptors

Goals and Objectives

- Maintain, restore, or enhance nesting and foraging habitat for raptors.
- Provide for safe passage for migrating raptors.

Management Actions Common to All Alternatives

- Provide natural or man-made nesting or perching structures in suitable areas to enhance foraging and breeding habitat for raptors as the need arises.
- 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.
- Apply the Wind Energy EIS (DOI BLM 2005) best management practices.

2.3.6.2.2 Non-game Migratory Birds

Goals and Objectives

- Maintain, restore, or enhance nesting, foraging, and migratory stopover habitat consistent with non-game migratory birds' habitat management objectives, emphasizing the natural biological diversity.
- Provide for safe passage for non-game migratory birds.
- Minimize habitat fragmentation and provide for migratory corridors.
- Promote socio-economic and recreational values of birds, such as eco-tourism.

Management Actions Common to All Alternatives

- 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 on authorized activities.
- Management actions would be guided by recommendations of comprehensive migratory bird planning efforts such as Partners-in-Flight (oak woodlands bird conservation plan, riparian bird conservation plan, and coastal scrub and chaparral plan) and other plans as available.
- 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.
- Apply the Wind Energy EIS (DOI BLM 2005) best management practices.

- Provide recreational opportunities for bird watching and photography.
- Monitor new energy development including power lines and wind turbines or other structures to better understand risks to non-game migratory birds.
- Require a non-game migratory bird inventory for new utility or energy projects.
- Conduct control measures for brown-headed cowbird and European starling in riparian habitats and oak woodlands, as necessary and feasible.

2.3.6.2.3 Bats

Goals and Objectives

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

Management Actions Common to All Alternatives

- Install bat gates or cable nets at abandoned mine sites that could support bat roosts.
- Reclaim mines to promote bat habitat, as practicable.
- Apply the Wind Energy EIS (DOI BLM 2005) BMPs.
- Require bat inventory for new wind energy projects.

2.3.6.2.4 Game Animals (Birds and Mammals)

Resident small game animals are those defined in the California Code and Regulations Section 257, Title 14: resident game birds-Chinese spotted doves, ringed turtledoves of the family Columbidae, California quail and varieties thereof, gambel or desert quail, mountain quail and varieties thereof, blue grouse and varieties thereof, ruffed grouse, sage grouse (sage hens), white-tailed ptarmigan, Hungarian partridges, red-legged partridges, including the chukar and other varieties, ring-necked pheasants and varieties, and wild turkeys of the order Galliformes; and the following game mammals: jackrabbits and varying hares (genus *Lepus*), cottontail rabbits, brush rabbits, pygmy rabbits (genus *Sylvilagus*), and tree squirrels (genus *Sciurus* and *Tamiasciurus*).

Resident big game animals are those defined in the California Code and Regulations Section 350, Title 14: deer (genus *Odocoileus*), elk (genus *Cervus*), pronghorn antelope (genus *Antilocarpa*), wild pig (feral pigs, European wild pigs and their hybrids [genus *Sus*]), black bear (genus *Ursus*) and Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*) in the areas described in the Fish and Game Code subsection 4902(b).

Goals and Objectives

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

Management Actions Common to All Alternatives

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

- Maintain, restore, or enhance wildlife waters for native game animal populations. Water developments would include design features to ensure safety and accessibility to water by desirable wildlife. Where practical, water troughs and tanks would 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 would not be undertaken for non-native birds and mammals.

Management Actions by Alternative

- Construction of new wildlife waters would be authorized on a case-by-case basis under Alternatives B, D, and E (see Table 2-3). In Alternative C, there would be no construction of new wildlife waters.

2.3.7 Special Status Species Management

Special status species (SSS) are fish, wildlife, and plants that require specific conservation measures or management directions due to population or habitat concerns. Special management measures within BLM-administered lands are necessary to reduce or eliminate potential adverse impacts to species or habitats, particularly measures to

reduce the likelihood of take of a listed species under the ESA. Special status species fall under the following broad categories: (1) Federally Listed Species: Threatened, Endangered, Proposed, or Candidate Species (and Designated or Proposed Critical Habitat); (2) State Listed Species; and (3) BLM Sensitive Species. No Federal Candidate Species or Federal Proposed Species have been identified in the planning area.

The BLM shall carry out management for the conservation of state listed plants and animals. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with the Federal Land Policy and Management Act (43 U.S.C. 1701 et seq.) and other federal laws.

The protection provided by the BLM's policy for candidate species (Manual 6840) is the minimum level of protection for BLM sensitive species.

Land use plan decisions would be consistent with BLM's mandate to protect and recover species listed under the ESA and would be consistent with objectives and recommended actions in approved recovery plans.

In addition to the ESA, the following laws, regulations, and policies direct the management of special status species on BLM-administered public lands:

- Migratory Bird Treaty Act of 1918, as amended
- Bald Eagle Protection of 1940, as amended 1962
- Fish and Wildlife Coordination Act of 1958
- California Native Plant Protection Act of 1977
- California ESA of 1984
- EO 13186—Conservation of Migratory Birds
- DOI Manual 520—Riparian Habitat
- BLM Manual 6500—Wildlife, Fish, and Plant Resources
- BLM Manual 6840—SSS

- BLM Manual 1737—Riparian
- Approved Recovery Plans for federally listed species

2.3.7.1 Planning Areawide

2.3.7.1.1 Goals and Objectives

- 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.

- Avoid or minimize activities that would 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.

- 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.

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

- 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.

2.3.7.1.2 Management Actions Common to All Alternatives

- Implement species- or habitat-specific goals, objectives, and actions, as applicable, addressed in the approved recovery plans.

- No activities or projects would be permitted on BLM-administered lands that would jeopardize the continued existence of federally-listed plant and wildlife species, or species proposed for listing.
- 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.
- Maintain or restore appropriate amount, distribution, and characteristics of life-stage habitats for special status plant species. Populations of non-native plants should be reduced or eradicated in occupied and potential special status plant habitat.

2.3.7.1.3 Management Actions by Alternative

Table 2-4 presents the management actions that vary by alternative.

2.3.7.2 Federally Listed Species and Designated Critical Habitat

The ESA of 1973 calls for preparation of recovery plans for threatened and endangered species likely to benefit from the effort, and authorizes the Secretary of the Interior to appoint recovery teams to prepare the plans. The USFWS is the responsible agency for writing and overseeing the recovery plan. A recovery plan establishes recovery goals and objectives, describe site-specific management actions recommended to achieve those goals, and estimate the time and cost required for recovery. A recovery plan is not self-implementing, but presents a set of recommendations for managers and the general public, which are endorsed by an approving official of the Department of Interior. Recovery plans also serve as a source of information on the overall biology, status, and threats of a species. The BLM is using these recovery plans for listed species to address threats and propose conservation measures within the DRMP.

USFWS has provided a list of ten federally listed species known to occur or with the potential to occur within the Planning Area: Peninsular bighorn sheep, least Bell's vireo, southwestern willow flycatcher, arroyo toad, quino checkerspot butterfly, Laguna Mountains skipper, unarmored threespine stickleback, Mexican flannelbush, Nevin's barberry, and San Bernardino blue grass (see Table 3-4). Only the six species that are

TABLE 2-4
MANAGEMENT ACTIONS FOR SPECIAL STATUS SPECIES BY ALTERNATIVE

Management Actions	A	B	C	D	E
Protect sensitive plant species in the Julian and Oriflamme areas by prohibiting the use of herbicides when modifying fuel breaks to reduce visual impact. Determine if the opportunity exists to enhance the habitat of sensitive plants in conjunction with fire management.	X				
Protect the habitat of sensitive plants throughout the planning area.	X				
Require surface disturbance activities to avoid or minimize impacts and mitigate for residual impacts to all special status species habitat. Mitigation would be in the form of habitat restoration or acquisition.		X			X
Require surface disturbance activities to avoid adverse impacts to special status species habitat.			X		
Require surface disturbance activities to avoid or minimize impacts and mitigate residual impacts to federally listed species only. Mitigation would be in the form of habitat restoration or acquisition.				X	
Do not allow commercial or personal collection of special status species. Allow research collection by permit only.		X	X	X	X
Follow prescriptions in recovery plans for federally-listed species.		X	X	X	X
Limit motorized use through incorporation of seasonal closure of designated access routes, as appropriate, in sensitive areas, such as critical habitat or recovery areas.		X			X
Critical habitat and recovery areas would be closed to motorized use.			X		
Allow motorized use of access routes within sensitive areas, such as critical habitat and recovery areas.				X	

known or expected to occur on the BLM-administered lands within the Planning Area are discussed below. Unarmored threespine stickleback, Mexican flannelbush, Nevin's barberry, and San Bernardino blue grass are not currently known to occur on BLM-administered lands within the Planning Area and there is little to no habitat present to support these species.

2.3.7.2.1 Peninsular Bighorn Sheep (Endangered and State Threatened)

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 would implement applicable recovery objectives consistent with the recovery plan and any future revisions.

Goals and Objectives

- Promote population increase and protect habitat.
- Provide for habitat connectivity between BLM-administered lands in the Planning Area and adjacent federal and state-administered lands.
- Ensure no adverse modification of critical habitat.

Management Actions Common to All Alternatives

- Minimize effects resulting from human-caused disturbances.
- Maintain existing water sources.
- Remove tamarisk from the springs and seeps within the Peninsular bighorn sheep habitat, to the extent practicable, using a variety of methods.
- Prohibit domestic sheep and goat grazing within nine miles of Peninsular bighorn sheep-occupied habitat to avoid disease transmission.
- 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.

Management Actions by Alternative

- Under Alternatives B, C, and E, designated critical habitat of Peninsular bighorn sheep would be closed to livestock grazing.
- See Table 2-4 above for discussion about surface-disturbing activities.
- See Table 2-21 for additional protections for this species.

2.3.7.2.2 Least Bell's Vireo (Endangered, State Endangered)

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).

Goals and Objectives

- Protect and maintain existing populations.
- Ensure that riparian areas are maintained as suitable for least Bell's vireo.

Management Actions Common to All Alternatives

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

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.2.3 Southwestern Willow Flycatcher (Endangered and State Endangered)

The overall recovery objective for the southwestern willow flycatcher (SWFL) 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.

Goals and Objectives

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

Management Actions Common to All Alternatives

- Protect known occupied sites or potential SWFL habitat through acquisition, easements, partnerships, and other means.
- 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.
- 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.

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.2.4 Arroyo Toad (Endangered)

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 2005). 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.

Goals and Objectives

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

Management Actions Common to All Alternatives

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

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.2.5 Quino Checkerspot Butterfly (Endangered)

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 2006). A habitat inventory was done in support of preparation for this plan (Osbourne 2006; DOI BLM 2005d). Data are currently being analyzed and management decisions made according to the results.

Goals and Objectives

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

Management Actions Common to All Alternatives

- Prevent non-native invasive species infestations following fire events. See the wildfire section for more details.

- 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.

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.2.6 Laguna Mountains Skipper (Endangered)

The Laguna Mountains skipper was historically observed within the Cleveland National Forest in the vicinity of the BLM-administered public lands in the Planning Area. USFWS has proposed critical habitat that includes areas within USFS land in the vicinity of Sunrise Highway. A recovery plan for this species has not yet been prepared. This species is not known from BLM lands, and the BLM-administered lands in the Planning Area are not known to support the larval host plants (*Horkelia clevelandii*) and do not provide the preferred montane meadow habitat.

Goals and Objectives

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

Management Actions Common to All Alternatives

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

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

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.3 State-Listed Species

The BLM shall carry out management for the conservation of plants and animals listed by California. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with the Federal Land Policy and Management Act (43 U.S.C. 1701 et seq.) and other federal laws. BLM has policies that would assist California in achieving their management objectives for state-listed species. It is BLM policy to manage for the conservation of state-listed species and their associated habitats and to ensure that actions authorized, funded, or carried out do not contribute to the need to list these species as threatened or endangered.

There are six state listed species found within the Planning Area: barefoot gecko, Swainson's hawk, Laguna Mountains aster, SWFL, least Bell's vireo, Peninsular bighorn sheep (see Table 3-4). The latter three are also federally listed species and discussed above.

2.3.7.3.1 Barefoot Gecko (Threatened)

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.

Goals and Objectives

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

Management Actions Common to All Alternatives

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

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.3.2 Swainson's Hawk (Threatened)

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.

Goals and Objectives

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

Management Actions Common to All Alternatives

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

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.3.3 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.

Goals and Objectives

- Protect known populations of the species.

Management Actions Common to All Alternatives

- Prohibit personal or commercial collection of the species (except for Native American collection).
- Require permits for research collection.

Management Actions by Alternative

See Table 2-4 above for discussion about surface-disturbing activities.

2.3.7.4 BLM Sensitive Species

BLM sensitive plant species identified in the Planning Area are: Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), delicate clarkia (*Clarkia delicata*), Tecate tarplant (*Deinandra floribunda*), Laguna Mountains alumroot (*Heuchera brevistaminea*), San Diego sunflower (*Hulsea californica*), mountain springs bush lupine (*Lupinus excubitus*), southern jewelflower (*Streptanthus campestris*), and Parry's tetracoccus (*Tetracoccus dioicus*). BLM sensitive wildlife species identified within the Planning Area area are gray vireo (*Vireo vicinior*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), and Townsends's western big-eared bat (*Plecotus townsendii*) (see Table 3-4). In addition, per policy detailed in CA BLM Manual Supplement 6840.06, all California Native Plant Society (CNPS) List 1B plant species that occur on BLM lands are considered to be BLM sensitive species and are included in Table 3-3.

2.3.7.4.1 Goals and Objectives

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

2.3.7.4.2 Management Actions Common to All Alternatives

- 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.

2.3.8 Wildland Fire Management

BLM coordinates with other agencies to manage fire in accordance with the nationwide BLM fire policy and the National Fire Plan. This integrates fire and fuels management with other land and resource management activities to benefit natural resources and implement multiple-use on BLM-administered lands within the Planning Area.

There is a Cooperative Fire Protection Agreement between CDF and BLM which provides the framework for Direct Response Operating Plan. The Operating Plan ensures that fires in a particular habitat and the response to fires in that habitat are consistent across BLM, USFS, and CDF-protected lands. The Palm Springs–South Coast–El Centro Fire Management Zone has a signed Operating Plan with CDF San Diego Unit, Cleveland National Forest, and BLM. The Plan covers the South Coast and El Centro areas that receive Fire Suppression and Fire Investigation services from CDF. The CDF has a statutory responsibility to suppress all fires on lands they protect and have a financial interest in keeping the fires as small and inexpensive as possible. BLM has the responsibility to provide a Fire Agency Representative, Fire Prevention, Law Enforcement, and Resource Management on these lands. BLM works to minimize impacts to resources from suppression activities and reduce rehabilitation costs from fire damage. Wilderness Areas (WAs), Wilderness Study Areas (WSAs), and Areas of Critical Environmental Concern (ACECs) are identified by BLM as special management units requiring additional consideration to protect the resources on these lands. Eastern San Diego County is dominated by semi-desert chaparral. This vegetation community is considered to be fire adapted and must be managed accordingly. The invasion of non-native species and unnatural fire regimes has increased the risk of high intensity catastrophic fires with rapid rates of spread.

2.3.8.1 Goals and Objectives

- 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.

- Reduce hazardous fuels around communities at risk within the Wildland Urban Interface (WUI) using mechanical, manual, biological, and prescribed fire treatments, where applicable.
- Appropriate management response (AMR) for resource benefits would range from full suppression to the appropriate strategy to safely contain and control wildland fires in the Planning Area.
- Maintain natural biological processes through the use of fire as a natural disturbance.

2.3.8.2 Management Actions Common to All Alternatives

- 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).
- 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).
- Use prescribed fire to protect values-at-risk (life and property) and to maintain or enhance the ecosystem health.
- Identify AMR-related goals, objectives, and constraints for each fire management unit.
- Identify areas where prescribed fire use is appropriate to maintain or restore desirable plant communities. Prescribed fire activities would comply with federal and state standards for smoke and air quality management.
- 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 would 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.
- Identify and implement post-fire stabilization and rehabilitation actions in burned areas to restore a functional landscape to meet the natural resource management objectives.
- 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 plan would also identify areas for exclusion from fire (through fire suppression), chemical, mechanical, and/or biological treatments.

- In Wilderness Areas and Wilderness Study Areas, when wildland fire suppression is required, minimum impact suppression tactics identified in the Interagency Standards for Fire and Aviation Operations would be applied.
- Conduct fire management activities along the Pacific Crest National Scenic Trail (NST) in a manner that would 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 would be considered in implementing fire management activities (see ACEC section of this chapter).
- Wildland fire suppression activities would utilize methods with lesser ground disturbance to minimize potential adverse impacts on special status species, critical habitat, desired plant communities, and cultural 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.
- 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.
- Use of fire retardants or chemicals adjacent to waterways would be in accordance with the *Environmental Guidelines for Delivery of Retardant or Foam near Waterways* (Interagency Standards for Fire and Aviation Operations).
- Fuels treatment would be conducted around campgrounds, administrative sites, and other areas of public interest, providing for public safety and reducing the risk of improvement loss.
- The entire Planning Area would 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 historically 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.

2.3.9 Cultural Resource Management

The management of cultural resources on BLM land must be in compliance with several federal laws, including the Antiquities Act of 1906; the National Historic Preservation Act (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 Archaeological Resource Protection Act of 1979; the Native American Graves Protection and Repatriation Act 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 with the California SHPO and other guidelines from the SHPO. Locations of cultural resource sites are to be kept confidential with the exception of public use sites.

2.3.9.1 Cultural Use Allocation

BLM evaluates cultural resources according to their current and potential uses (the BLM Manual Section 8110 for Cultural Resources). Cultural resources are allocated to one or more of the following use categories: Scientific Use, Public Use, Traditional Use, Conservation for Future Use, Experimental Use, and Discharged from Management. A site may be allocated to more than one use category.

Table 2-5 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 discharge from management category at this time. Uses of particular sites will vary based on site access, physical setting, site complexity, and so on.

TABLE 2-5
USE ALLOCATIONS FOR CULTURAL PROPERTIES

Cultural Site Attributes	Scientific Use	Public Use	Traditional Use	Conservation for Future Use	Experimental Use
Rock art		X	X		
Human Remains			X		
Bedrock milling with or without artifacts	X	X			
Hearth with or without artifacts	X				
House pit/Rock Shelter	X				
Cleared Circle/Rock Ring	X				
Cairn / Rock Alignment	X				
Historic	X	X			
All other cultural properties, both known and projected, to occur throughout the plan area (See Section 3.9 and Appendix G for complete list and breakdown of site attributes)	X				

2.3.9.2 Goals and Objectives

- Ensure that significant cultural resource sites, districts, and landscapes are available for appropriate uses by present and future generations.
- Enhance public understanding of and appreciation for cultural resources through educational outreach and heritage tourism opportunities.
- Reduce or eliminate indirect impacts from land uses on cultural resources.
- Maintain viewsheds of important cultural resources whose settings contribute significantly to their scientific, public, traditional, or conservation values.
- Provide and encourage research opportunities on cultural resources that would contribute to the understanding of the ways humans have used and influenced natural systems and processes.

- Manage the Pacific Crest National Scenic Trail for educational, recreational and scientific values.
- Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations.
- Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses.
- Identify priority geographic areas for new field inventory, based upon a probability for unrecorded significant resources (per IB 2002-101).

2.3.9.3 Management Actions and Land Use Plan Decisions

Alternative A—No Action

At the time the existing MFP was approved, cultural resources were not allocated to the use categories that are currently in use and pursuant to statewide protocol; thus, under the No-action Alternative, BLM would continue to manage cultural resources in accordance with applicable laws and regulations. A total of 421 cultural resource sites were identified within the Planning Area in 1981, including a large variety of prehistoric and historic resources. At that time, approximately 4 percent of the known prehistoric sites were in excellent condition, 81 percent were in good condition, 14 percent were in poor condition, and 1 percent was destroyed.

Alternatives B-E

The management actions on Table 2-6 apply to cultural resources in the Planning Area under Alternatives B, C, D, and E.

Any proposed activities must comply with Section 106 of NHPA in accordance with the statewide protocol of the SHPO.

TABLE 2-6
MANAGEMENT ACTIONS FOR CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS

Management Actions	Scientific Use	Public Use	Traditional Use	Conservation for Future Use	Experimental Use	Discharge from Management
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.	X	X	X	X	X	
Design and maintain facilities to preserve the visual integrity of cultural resources, settings, and cultural landscapes consistent with VRM objectives established in the DRMP.		X			X	
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 NRHP.	X	X	X	X	X	
Permit and encourage scientific and historical studies by qualified researchers at selected sites allocated to scientific use. Such studies would use currently available research methods, including methods that would result in the properties' alteration or destruction. Assign the highest priority for study to sites that are threatened with damage from human activities or natural processes, areas of scientific interest, sites eligible for the NRHP, and areas where research may inform management actions. Historic contexts and research designs would provide guidance for scientific studies.	X				X	
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.		X				
Manage spiritually significant and traditional cultural properties in consultation with Indian 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 Indian tribes would be kept confidential to the extent allowed by law.			X	X		
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 Vegetation Use Authorization Section for more information.			X	X		
Continue to inventory the planning area for cultural resources as mandated by Section 110 of the National Historic Preservation Act.	X	X	X	X	X	X

2.3.10 Paleontological Resource Management

Paleontological resources found on public lands are recognized by BLM as constituting a fragile and nonrenewable scientific record of the history of life on earth. They therefore represent an important component of America's natural heritage.

BLM manages paleontological resources principally under the following authorities: BLM Manual 8270, *Paleontological Resources Management*; BLM Handbook 8270-1, *General Procedural Guidance for Paleontological Resources Management*; the Federal Land Policy and Management Act of 1976, the National Environmental Policy Act of 1969, Secretarial Order 3104, the Federal Cave Resources Protection Act of 1988, and other various laws and regulations.

All lands within the Planning Area are classified as follows, based on their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. These classifications are based on existing maps (see Paleotological Resources Discussion in Chapter 3).

Class 1 (low sensitivity). Igneous and metamorphic geologic units and sedimentary geologic units where vertebrate fossils or uncommon non-vertebrate fossils are unlikely to occur.

Class 2 (moderate sensitivity). Sedimentary geologic units that are known to contain or have unknown potential to contain fossils that vary in significance, abundance, and predictable occurrence.

Class 3 (moderate sensitivity). Areas where geologic units are known to contain fossils, but have little or no risk of human-caused adverse impacts and/or low risk of natural degradation, or because of their geographic location or topographic position.

Class 4 (high sensitivity). Areas where geologic units regularly and predictably contain vertebrate fossils and/or uncommon non-vertebrate fossils, and are at risk of natural degradation and/or human-caused adverse impacts.

As shown in Figure 3-10, Classes 1 through 3 occur in the Planning Area, with most of the Class 2 and 3 areas located on state-owned lands.

2.3.10.1 Goals and Objectives

- Protect and conserve significant paleontological resources as they are discovered on public lands.
- Manage paleontological resources in ways that prioritize research needs, facilitate educational and recreational needs, and protect important sites.
- Develop specific objectives and management actions for fossil localities, when paleontological resources are discovered in the Planning Area.

2.3.10.2 Management Actions Common to All Alternatives

- 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.
- Restrict the collection of all vertebrate fossils and noteworthy invertebrate and plant fossils to legitimate scientific or educational uses in accordance with permitting procedures.
- Allow recreational collecting of common invertebrate and plant fossils.
- Should paleontological resources be encountered during project ground-disturbing activities, work would 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.

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 would 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 would not be required except in very rare circumstances.

2.3.11 Visual Resource Management

BLM prepares and maintains on a continuing basis, an inventory of visual values on all public lands in accordance with the Visual Resource Management (VRM) system (DOI BLM 1984.) The VRM system provides a way to identify, evaluate, and determine the

appropriate levels of management of scenic values. The inventory of visual values has been documented for the BLM-administered lands within the Planning Area and is described in Chapter 3 and illustrated on Figure 3-11. The inventory serves as the basis for the designation of VRM management Classes I-IV, which take into account other resource uses on public lands within the Planning Area. The VRM classes are best defined by their goals and objectives, which are described below. The overall goal of VRM analysis is to minimize visual impacts through development of mitigating measures.

The following criteria were used to determine the proposed VRM Class designations for the various DRMP alternatives:

- The overall management emphasis intended for each alternative;
- Recognition of all applicable special designations and all land use decisions;
- Assertion that other management activities and land uses proposed may be achieved within the applicable VRM Class; and
- Use of the least restrictive class that still achieves stated goals and objectives.

2.3.11.1 Goals and Objectives

The DRMP alternatives would set landscape classes ranging from Class I to IV, and all future projects and actions would adhere to the following VRM class objectives as appropriate:

- **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.

2.3.11.2 Management Actions Common to All Alternatives

- Incorporate design considerations to minimize potential impacts to public lands' visual values into all surface disturbing activities, regardless of size. Emphasis would be on BLM providing input during the initial planning and design phase to minimize costly redesign and mitigation at a later time.
- 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 would be in view, relative size or scale, season of use, light conditions, recovery time, spatial relationships, atmospheric conditions, and motion.
- Use visual resource design techniques and best management practices (Summarized in 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.
- 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 class designations vary by alternative, as shown in Table 2-7. A more detailed discussion of the variation in VRM classes by alternative and by specific land areas is included in Chapter 4.

TABLE 2-7
VRM LAND USE DESIGNATIONS BY ALTERNATIVE

VRM Class	Alternative				
	A	B	C	D	E
I (acres)	62,296	62,296	62,296	62,296	62,296
II (acres)	40,758	41,237	41,961	13,720	32,875
III (acres)	0	724	0	0	724
IV (acres)	0	0	0	27,038	8,362

2.3.12 Multiple-use Classes (Applies to Alternative A)

The California Desert Conservation Area (CDCA) Plan (DOI BLM 1980b, as amended) developed a classification system that placed all BLM-administered public lands in the CDCA into one of four multiple-use classes, based on the sensitivity of the resources and types of uses for each geographic area. These multiple-use classes were then adopted by ECFO, as described below. Multiple-use classes apply to Alternative A (No Action). Under Alternatives B-E, Multiple-use Classes would no longer apply.

The classification system used in the CDCA Plan identified four multiple-use classes. At the time this system was adopted by ECFO, it was determined that none of the lands within the planning unit were appropriate for management at an "intensive" level of use; consequently, none of the lands were assigned to Multiple-use Class I (Intensive). The remaining lands of the Planning Area were assigned to the other three classes in the proportions shown in Table 2-8.

TABLE 2-8
MULTIPLE-USE CLASS DESIGNATIONS

Class	Acreage	% of Total Planning Area Public Lands
C	41,776	42
L	42,510	43
M	14,616	15
Total	98,902*	100

*Acreage represents total area of Planning Area in 1981.

The Multiple-use Class Guidelines, as delineated in Table 1, pages 15-20 of the CDCA Plan (DOI BLM 1980b), were adopted for use in the Planning Area. Descriptions of the multiple-use classes as applied by ECFO are:

Class C: Multiple-use Class C (Controlled) has two purposes. First, it shows those areas which are being "preliminarily recommended" as suitable for wilderness designation by Congress. This process is fully explained in the Wilderness Element of the CDCA Plan (DOI BLM 1980b). Second, it will be used in the future to show those areas formally designated as wilderness by Congress.

The Class C Guidelines are different from the guidelines for other classes. They summarize the kinds of management likely to be used in these areas when and if they are formally designated wilderness by Congress. These guidelines will be

considered in the public process of preparing the final Wilderness Study Reports. However, the final management decisions depend on Congressional direction in the legislation which makes the formal designation.

Class L: Multiple-use Class L (Limited Use) protects sensitive natural, scenic, ecological, and cultural resource values. Public lands designated as Class L are managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished.

Class M: Multiple-use Class M (Moderate Use) is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

Plan Elements: The CDCA Plan Elements provide more specific application of the multiple-use class guidelines for specific resources or activities about which the public has expressed significant concern. As with the Multiple-use Class Guidelines, the CDCA Plan Elements were adopted by ECFO. Most of the decisions reported in this plan have been arranged into categories or subcategories having names identical to those of the CDCA Plan Elements which provides guidance in the issue(s) central to the decision.

2.3.13 Special Designations

Special Designations in BLM include WAs, WSAs, NSTs, and ACECs (Figures 2-1 through 2-4). Through the planning process, BLM designates ACECs following the criteria outlined in law (FLPMA), regulations (43 CFR 1610.7-2), and policy (Manual 1613).

2.3.13.1 Wilderness Areas

There are 48,333 acres of designated wilderness in the Planning Area (Figures 2-1 through 2-4). WAs are designated by Congress and are managed according to the Wilderness Act (16 U.S.C. 1131-1136, 78 Stat. 890), the California Desert Protection Act of 1994, regulations for wilderness management at 43 CFR 6300, BLM Manuals 8560 and 8561 and BLM Handbook H-8560-1. This land use plan will not address changing or eliminating existing wilderness area boundaries or allowing motorized vehicles or other use of mechanical transportation in any wilderness area not already authorized. Only Congress can change the boundaries of designated wilderness areas.

2.3.13.1.1 Goals and Objectives

- 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 would be managed so that they remain unimpaired.

- 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).

2.3.13.1.2 Management Actions Common to All Alternatives

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

- Continue to manage WSA under BLM's interim management policy until Congress designates as wilderness or releases from WSA status.

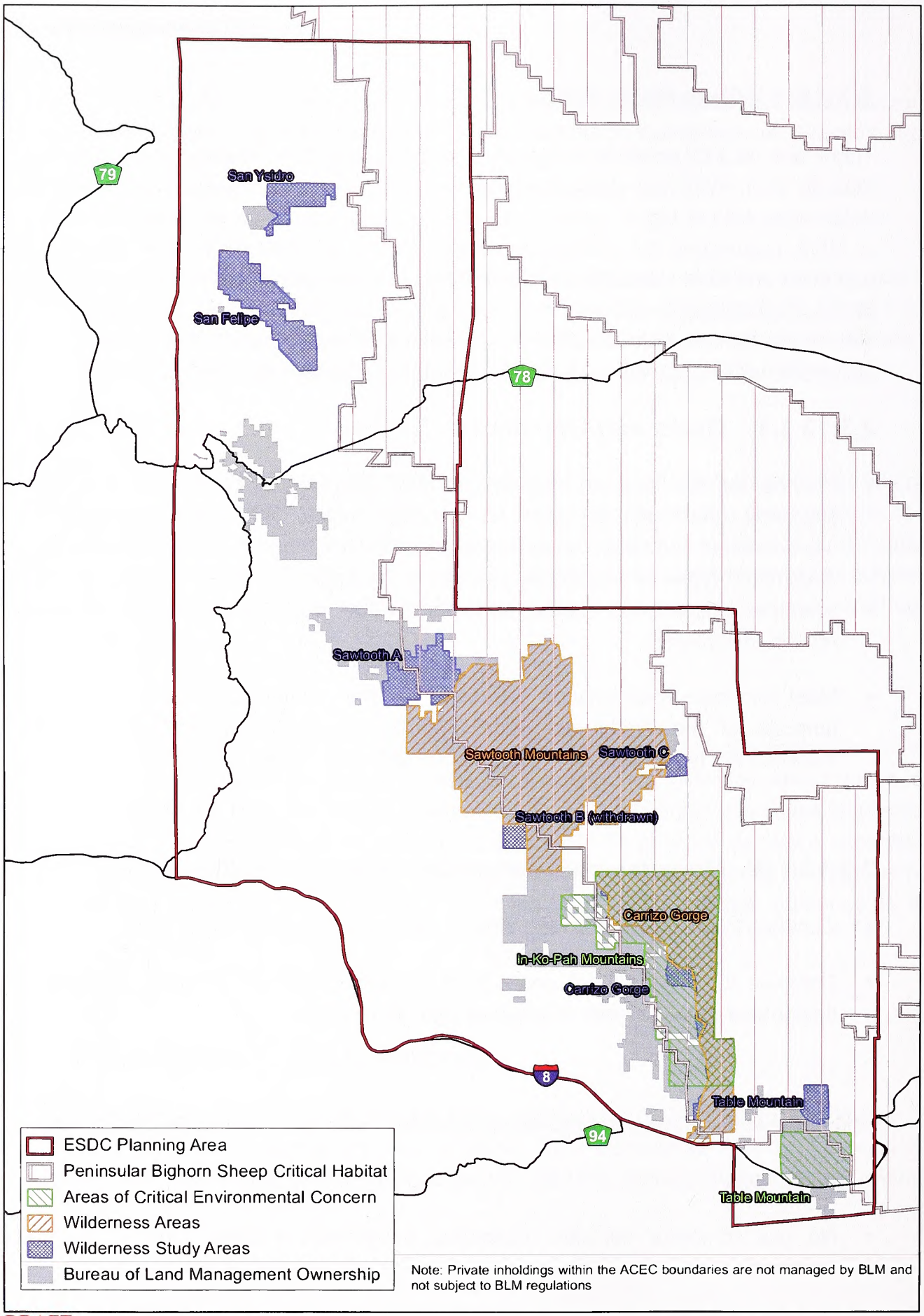
Some relevant management provisions provided for by law or policy for these areas are:

- Withdrawal from mineral entry, mineral leasing, and mineral sales.

- No use of motor vehicles, motorized equipment or other form of mechanical transport.

- No structure or installation within these areas.

- Administrative use of vehicles and structures will be the minimum necessary for the administration of these areas.



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EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

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FIGURE 2-1: Special Designations Alternative A

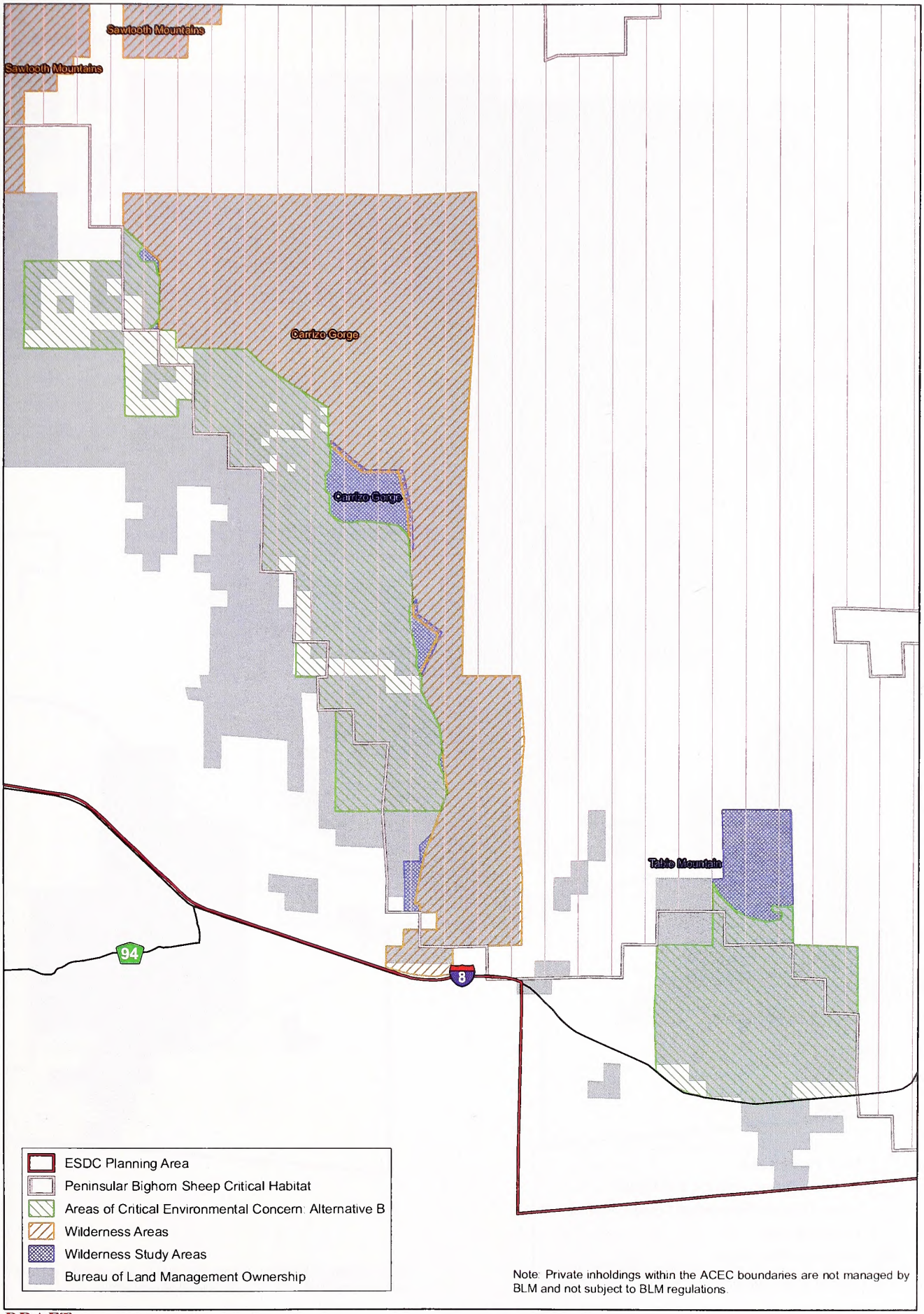

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FIGURE 2-2: Special Designations
Alternative B

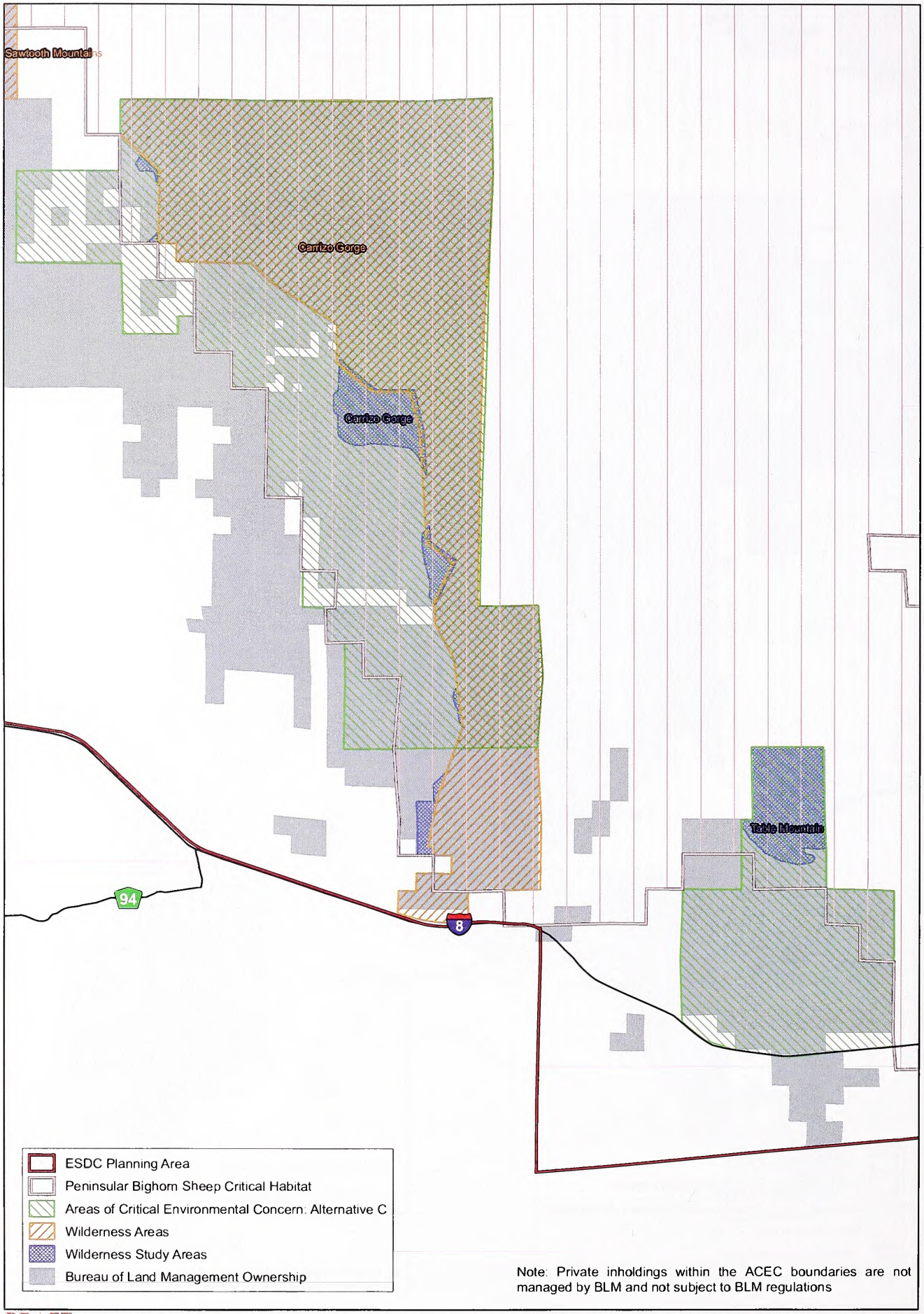

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FIGURE 2-3: Special Designations
Alternative C

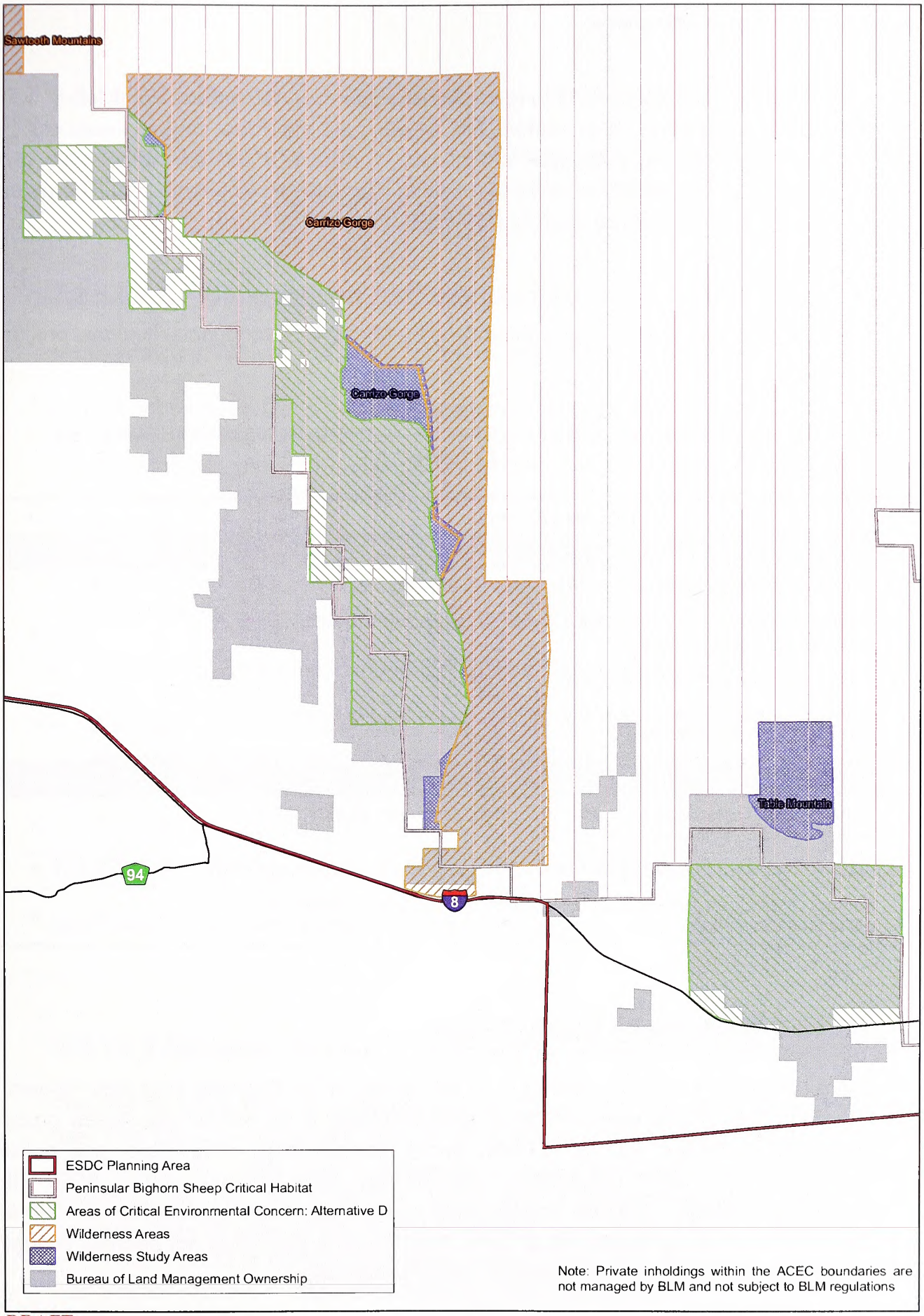

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FIGURE 2-4: Special Designations Alternative D

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 (MS-8560.35).

Table 2-9 provides the management actions by alternatives for special designations.

TABLE 2-9
MANAGEMENT ACTIONS FOR SPECIAL DESIGNATIONS MANAGEMENT BY ALTERNATIVE

Management Actions	A	B	C	D	E
WILDERNESS AREAS AND WILDERNESS STUDY AREAS					
Install informational kiosks at trailheads but do not improve access.		X	X		
Expand access by improving staging areas and providing informational kiosks at wilderness trailheads				X	X
Acquire in-holdings from willing owners.		X	X		X
Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.		X	X	X	X
AREAS OF CRITICAL ENVIRONMENTAL CONCERN					
Manage the Table Mountain and In-Ko-Pah Mountain ACECs for biological and cultural values		X	X	X	X
Acquire in-holdings from willing owners.		X	X	X	X
Perform restoration treatments where damage has occurred or where it will reduce vehicle incursions.		X	X	X	X

2.3.13.2 Wilderness Study Areas

There are seven WSAs, consisting of 13,963 acres, in the Planning Area (see Figures 2-1 through 2-4). WSAs were identified administratively in the wilderness review process mandated in Section 601 of FLPMA. Some relevant laws, regulations, and policies include 43 CFR 3802 (Exploration and Mining), BLM Manual Section 8550, BLM Handbook H-8550-1, 1987/88 Amendments to the Oil and Gas Leasing Act of 1920 and the 1970 Geothermal Steam Act of 1970. This land use plan does not address changing or eliminating existing wilderness study area boundaries.

2.3.13.2.1 Goals and Objectives

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

2.3.13.2.2 Management Actions Common to All Alternatives

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

- Will not be leased for oil and gas or geothermal extraction.
- 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.
- Monitor conditions and uses in and around WSAs to identify actions or uses that impair the wilderness values of the Planning Area.
- Continue to provide monitoring, signing, and restoration as necessary.
- Continue to manage WSA under BLM's interim management policy until Congress designates as wilderness or releases from WSA status.

2.3.13.2.3 Management Actions by Alternatives

See Table 2-9 above for management actions that vary by alternative.

2.3.13.3 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 (USDA 1982) and a subsequent 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. Figure 3-12 provides the location of the Pacific Crest NST.

2.3.13.3.1 Goals and Objectives

- 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.

2.3.13.3.2 Management Actions Common to All Alternatives

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

2.3.13.4 Areas of Critical Environmental Concern

BLM is evaluating two ACECs under various alternatives in the DRMP (see Figures 2-1 through 2-4 above, and Figure 2-5). The guidance for ACEC designation is included in FLPMA and the BLM planning regulations. ACECs must meet the relevance and importance criteria in 43 CFR 1610.7-2(b) and must require special management (43 CFR 1601.0-5(a)) to:

- Protect the area and prevent irreparable damage to resources or natural systems, or;
- Protect life and promote safety in areas where natural hazards exist.

Areas qualifying for consideration as ACECs must have substantial significance and value including qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. The values for which ACECs are designated are considered the highest and best use for those lands and protection of those values would take precedence over multiple uses.

2.3.13.4.1 Goals and Objectives

- ACECs would provide protection for relevant and important special status species, wildlife, scenic, and significant cultural resources values.

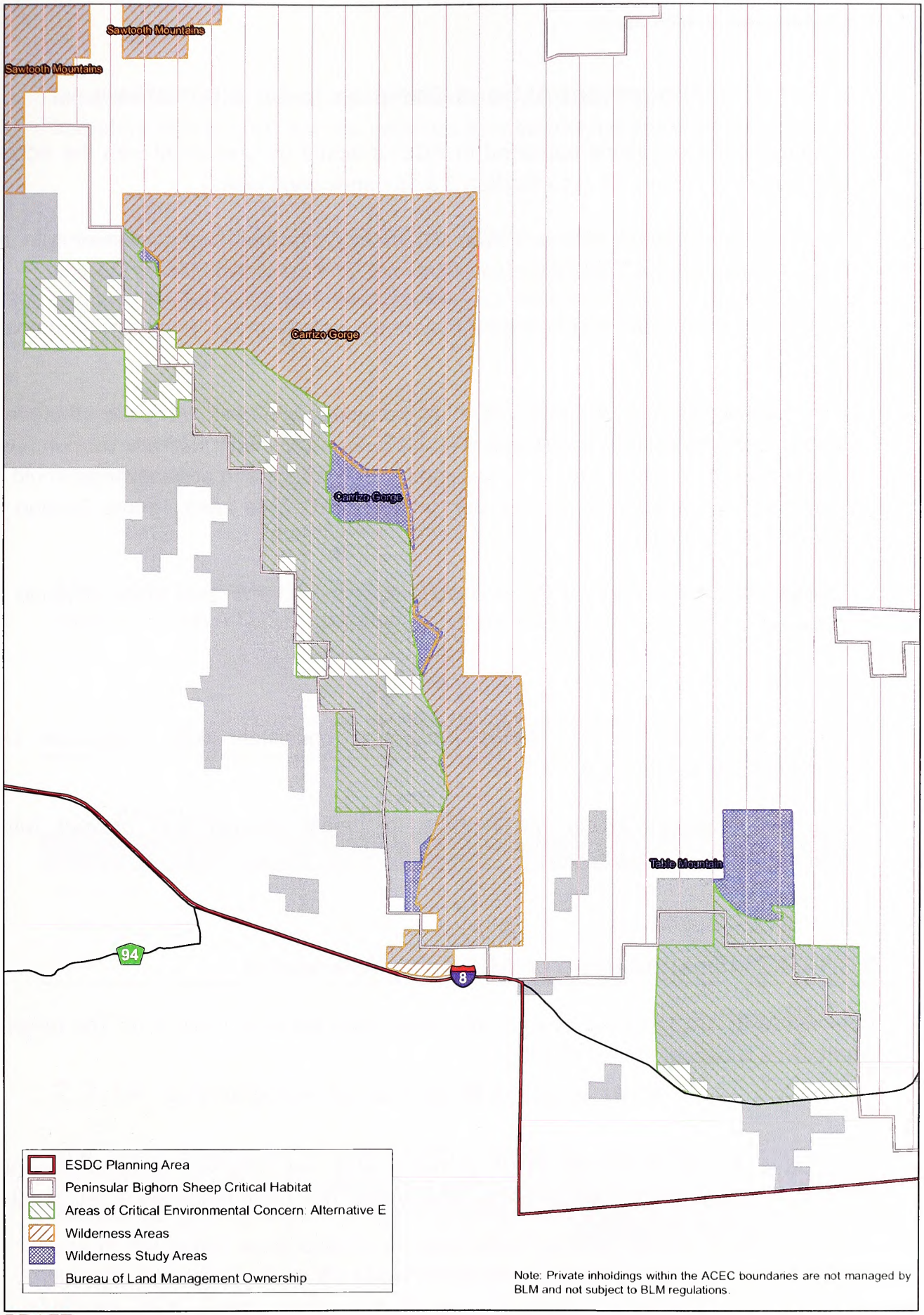

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FIGURE 2-5: Special Designations
Alternative E

2.3.13.4.2 Management Actions Common to All Alternatives

- Land use authorizations approved in ACECs would be consistent with the actions presented in Table 2-21 (see Section 2.3.18 Lands and Realty).
- Mineral management actions authorized in ACECs would be consistent with the actions presented in Table 2-21 (see Section 2.3.18 Lands and Realty).
- 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 ACECs from willing sellers by purchase, exchange, or donation. Future acquisitions of in-holdings and edgeholdings would be managed in accordance with the designated ACEC. See Land Tenure Section for additional information.
- Treatment for hazardous fuels and non-native invasive or pest species would be allowed.
- All ACECs would be closed to wood collection.
- Allow traditional use by Native Americans consistent with Vegetation Use Authorization see Section 2.3.5.4.
- Monitor resources within the ACECs to detect change and prevent future deterioration.

2.3.13.4.3 Designations of ACECs by Alternative

Potential ACEC designations by alternative are shown below in Table 2-10. The range of alternatives is based on the following:

Alternative A. The In-Ko-Pah ACEC remains as it was originally designated, which includes overlap with the Carrizo Gorge Wilderness. The Table Mountain ACEC remains as it was originally designated.

Alternative B. The In-Ko-Pah ACEC is adjusted to exclude the area that overlaps the Carrizo Gorge Wilderness and Carrizo Gorge WSA, and expanded to include the adjacent Peninsular bighorn sheep habitat along the western boundary. 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.

Alternative C. The In-Ko-Pah ACEC is adjusted to include the adjacent Peninsular bighorn sheep habitat along the western boundary. The Table Mountain ACEC is expanded to include the entire Table Mountain WSA.

Alternative D. The original In-Ko-Pah ACEC is adjusted to exclude the Carrizo Gorge Wilderness and Carrizo Gorge WSA. The Table Mountain ACEC remains the same as Alternative A.

Alternative E (Preferred). The In-Ko-Pah ACEC is the same as Alternative B and the Table Mountain ACEC is the same as Alternative B.

TABLE 2-10
ACECS BY ALTERNATIVE

Allocations	Alternative				
	A	B	C	D	E
ACECs (ACRES)					
In-Ko-Pah	22,186	9,318	23,020	8,508	9,318
Table Mountain	4,293	4,686	5,704	4,293	4,686
Total	26,479	14,004	28,724	12,801	14,004

2.3.14 Livestock Grazing Management

The Taylor Grazing Act of 1934 (TGA) provides for two types of authorized use: (1) a grazing permit, which is a document authorizing the use of the public lands within an established grazing district; and (2) a grazing lease, which is a document authorizing the use of the public lands outside an established grazing district. A grazing district is the specific area within which the public lands are administered in accordance with Section 3 of the TGA. Public lands outside grazing district boundaries are administered in accordance with Section 15 of the TGA.

BLM allotments in California are classified as perennial, ephemeral, or perennial-ephemeral. These classifications correspond to the following types of designated rangelands:

- Perennial. Rangeland which consistently produces perennial forage to support a year-round livestock operation.
- Ephemeral. Rangelands that do not consistently produce enough forage to sustain a year-round livestock operation, but may briefly produce unusual volumes of forage to accommodate livestock grazing. There is a Special Rule for ephemeral ranges (see Section 3.14 in Chapter 3).
- Perennial-Ephemeral. Rangelands which produce perennial forage each year and also periodically provide additional ephemeral vegetation. In a year of abundant moisture and favorable climatic conditions, annual forbs and grasses add materially to the total grazing capacity.

The land use planning decisions to be made are whether lands are available or unavailable for grazing. Criteria used to develop livestock grazing management in the various alternatives are summarized below and presented in Appendix E.

2.3.14.1 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 SWFL within and/or near the allotment?
- Have SWFLs 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?

2.3.14.2 Grazing by Alternative

Lands available for livestock grazing by alternative based on the above criteria are summarized below, as well as presented in Table 2-11 and illustrated on Figure 2-6 (Alternatives A and D), Figure 2-7 (Alternative B), and Figure 2-8 (Alternatives C and E).

- Alternative A is the No-action Alternative and does not apply any of the criteria that have been developed.
- Alternative B is the Mixed Alternative and applies criterion 1, 6 and 7.

- Alternative C is the Conservation Alternative and applies all of the criteria that have been developed. As Alternative C applies all criteria developed in this analysis, this alternative was chosen as Alternative E (preferred Alternative).
- Alternative D is the Development Alternative and does not apply any of the criteria that have been developed.

TABLE 2-11
LIVESTOCK GRAZING BY ALTERNATIVE (ACRES)

	Alternative				
	A	B	C	D	E
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303

2.3.14.3 Goals and Objectives

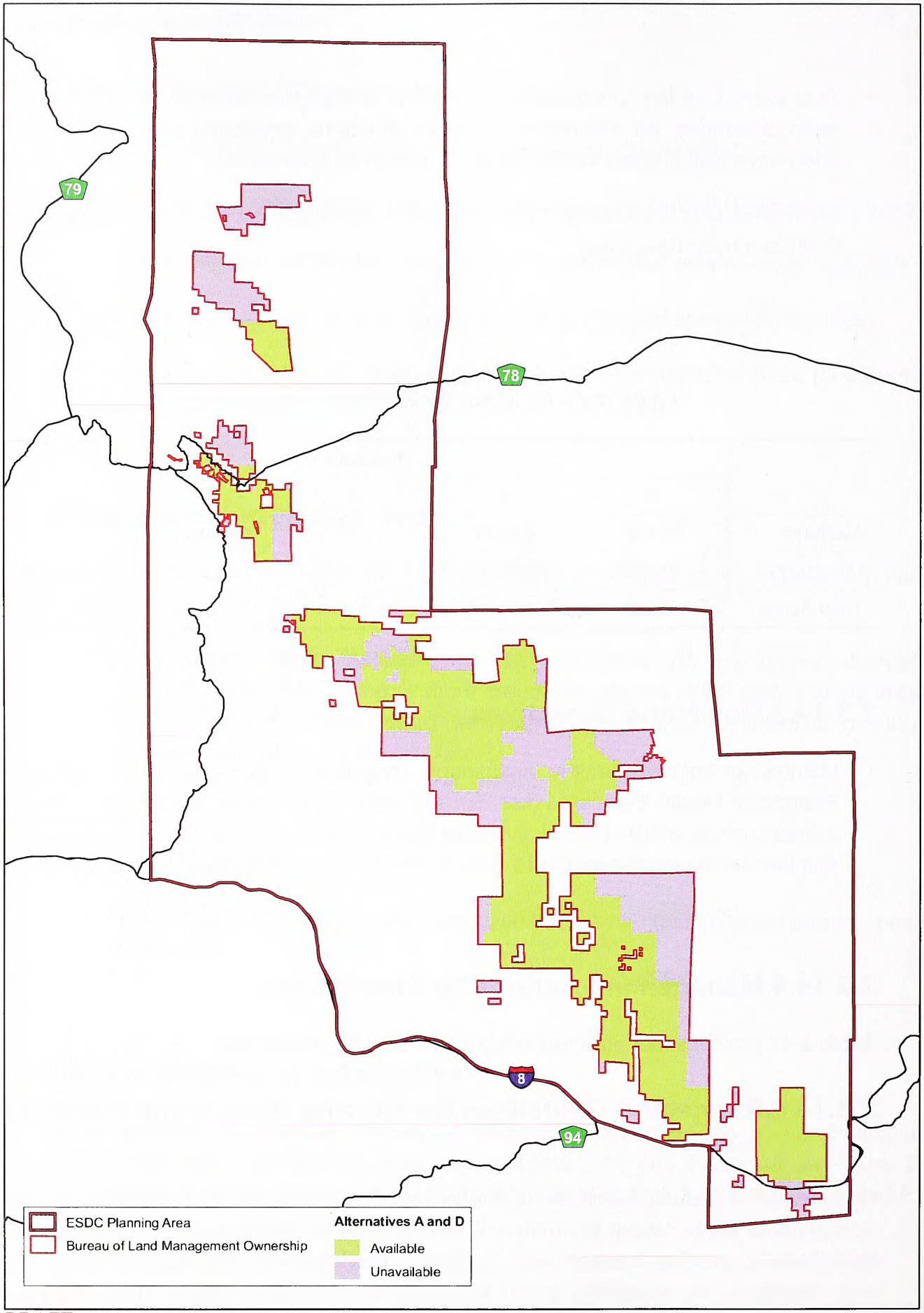
- Maintain or improve healthy, sustainable rangeland ecosystems to meet approved Rangeland Health Standards (see Section 2.3.1) and produce a wide range of public values such as wildlife habitat, livestock forage, recreation opportunities, clean water, and functional watersheds.

2.3.14.4 Management Actions by Alternative

Table 2-12 provides management actions that vary by alternative.

2.3.14.5 Rangeland Guidelines for Grazing Uses in the Planning Area

Guidelines for grazing administration apply to all livestock grazing activities on BLM-administered lands. Under Alternative A, the BLM would utilize existing national fallback guidelines for grazing management. Fallback guidelines were developed in conjunction with standards for rangeland health to implement 43 CFR Subpart 4180. Guidelines identify 15 grazing management practices to achieve the fallback standards. Under Alternatives B and D, the BLM would adopt the grazing guidelines developed for the



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EL CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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CALIFORNIA
Sacramento
Planning Area
El Centro

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February 2007

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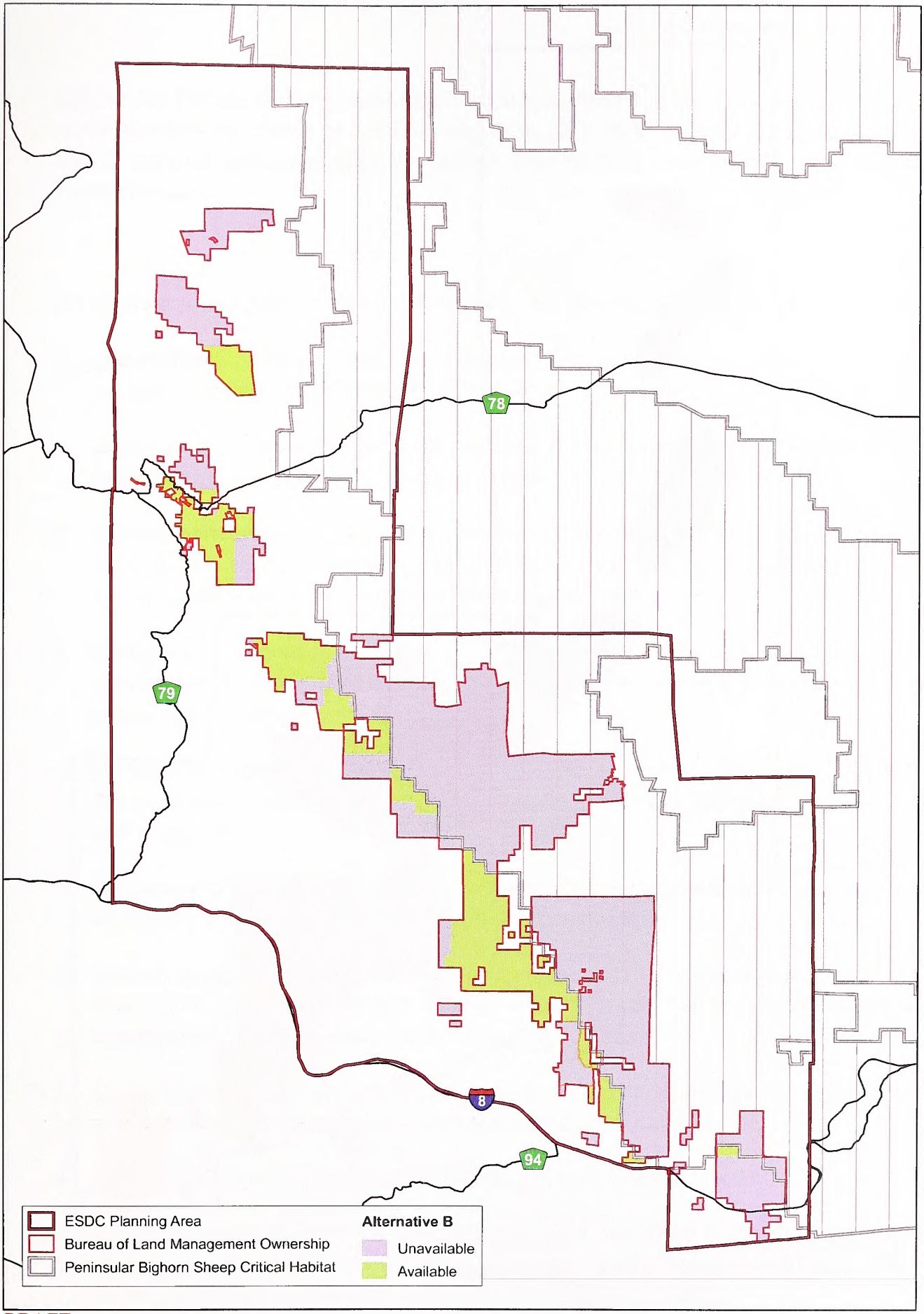
FIGURE 2-6: Grazing Management Areas
Alternatives A and D



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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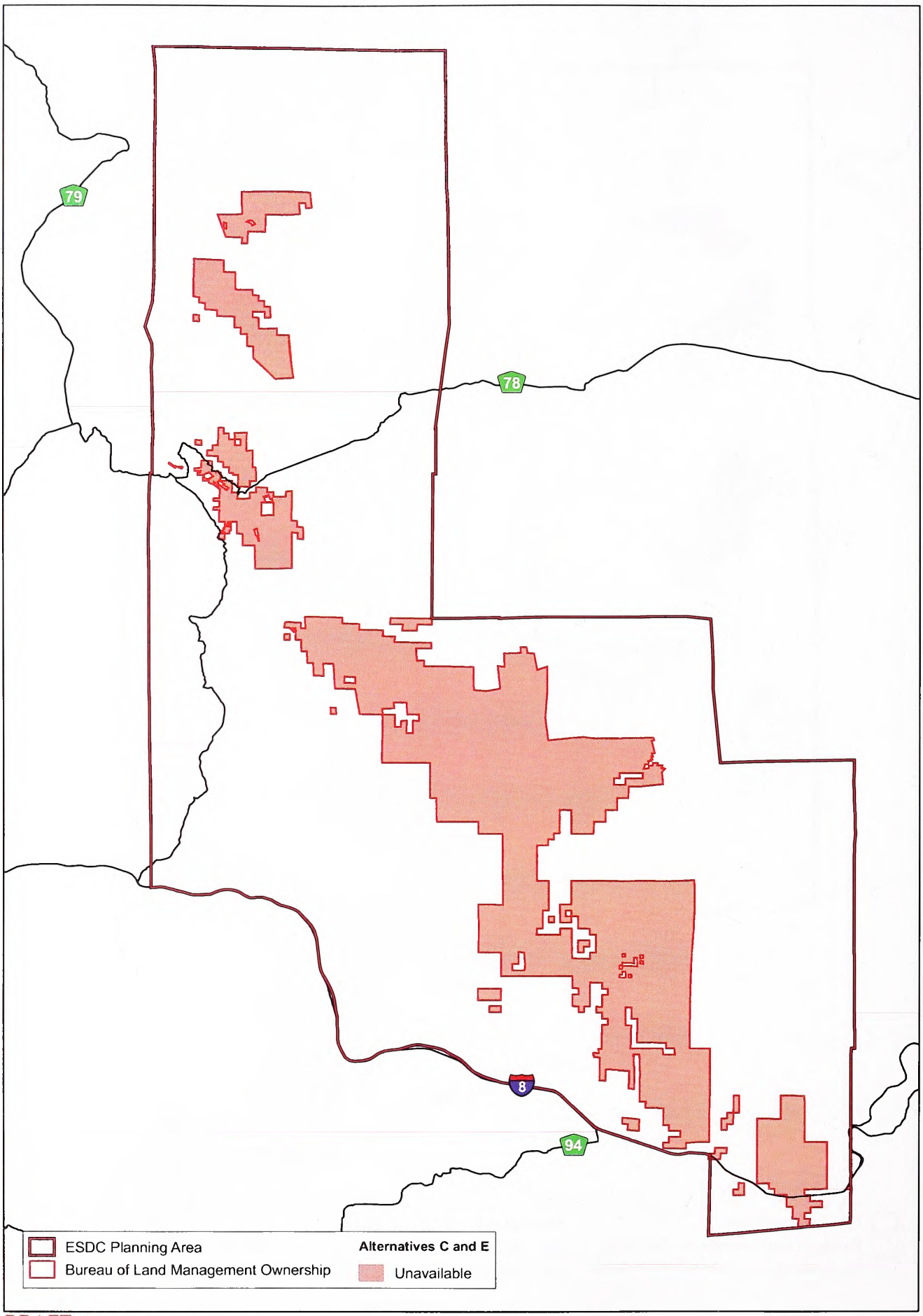
FIGURE 2-7: Grazing Management Areas
Alternative B



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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FIGURE 2-8: Grazing Management Areas
Alternatives C and E

BLM in the NEMO planning area which were determined to be applicable for the BLM-administered public lands in the Planning Area (DOI BLM 2002). Under Alternatives C and E, the BLM-administered public lands in the Planning Area would be unavailable to livestock grazing.

Alternative A (No Action)–National Fallback Guidelines for Grazing Management

1. Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture, and stabilize soils.

2. Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils.

3. Management practices maintain or promote sufficient residual vegetation to maintain, improve, or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability.

4. Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform.

5. Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.

6. Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.

7. Desired species are being allowed to complete seed dissemination in one out of every three years (management actions would promote the opportunity for seedling establishment when climatic conditions and space allow).

8. Conservation of federally threatened or endangered and other special status species are promoted by restoration and maintenance of their habitats.

9. Native species are emphasized in the support of ecological function.

10. Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

TABLE 2-12
LIVESTOCK GRAZING MANAGEMENT ACTIONS BY ALTERNATIVE

Management Actions	Alternative				
	A	B	C	D	E
Conduct livestock use and associated management practices in a manner consistent with other multiple-use needs and objectives to ensure that the health of rangeland resources is preserved or improved so that they are productive for all rangeland values. Where needed, improve public rangeland ecosystems to meet objectives.	X	X		X	
Authorize and maintain range improvement projects in accordance with grazing regulations and policies.	X	X		X	
Reseed eroding sites in the Oriflamme land treatment area with native species, or allow natural revegetation. Install erosion control structures where desirable.	X				
Do not authorize a new allotment in the San Ysidro Mountain area, and do not authorize ephemeral grazing use. Monitor for livestock trespass, and take appropriate action to terminate trespass if it occurs.	X				
Establish the season of use for the expanded San Felipe Allotment as November 1 through June 30. Do not renew if the present lessee relinquishes the lease. (This action is complete.)	X	X[1]		X[1]	
Establish a season of use for the Banner Queen Allotment based on further studies of the vegetative development of key species.	X	X[1]		X[1]	
Establish a season of use on the Vallecito Allotment and Canebrake Allotment as November 1 through June 30.	X	X[1]		X[1]	
Establish a season of use from about March 1 through October 31 for the portion of the Tierra Blanca Allotment located in the McCain Valley.	X	X[1]		X[1]	
No Grazing—eliminate all allotments with the exception of vegetation management prescriptions.			X		X
Establish a season of use from November 1 through June 30 on the In-Ko-Pah Allotment.	X	X[1]		X[1]	
Terminate the McCain Valley Allotment.	X				
Eliminate all grazing from Peninsular bighorn sheep critical habitat by adjusting allotment boundaries to exclude critical habitat.		X		X	
Prohibit domestic sheep grazing within nine miles of Peninsular bighorn sheep critical habitat to avoid disease transmission.		X	X	X	X
Adjust allotments to exclude grazing from the OHV use area in Lark Canyon and Table Mountain ACEC.		X			
Adjust the boundaries of the Lark Canyon OHV area to minimize conflicts between OHV users and grazing permittees. The boundary of the McCain Valley allotment (In-Ko-Pah) and the boundary of the Lark Canyon OHV area are currently in close proximity, and as a result, OHV users routinely enter the grazing allotment.				X	

[1] The allotment would continue to be managed on a case-by-case basis and permitted on a case-by-case basis pending rangeland health assessments.

11. Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (timing and duration of use periods would be determined by the authorized officer).

12. Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.

13. Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.

14. Development of springs and seeps or other projects affecting water and associated resources would be designed to protect the ecological functions and processes of those sites.

15. Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, the BLM has established an identified level of annual growth or residue to remain on site at the end of the grazing season, and adverse effects on perennial species are avoided.

Alternatives B and D Rangeland Guidelines for Grazing Uses

1. Facilities would be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.

2. The development of springs and seeps or other projects affecting water and associated resources would be designed to protect the ecological functions and processes of those sites.

3. Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, adits, and seeps) would be modified so PFC and resource objectives are met. Incompatible projects would be modified to bring them into compliance. The BLM would consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorization modifications of existing projects and initiation of new projects. New range improvement facilities would be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.

4. Supplements (e.g. salt licks) would be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian-wetland functions.

5. Management practices would maintain or promote perennial stream channel morphology and functions (e.g. gradient, width/depth ratio, channel roughness, and sinuosity) appropriate to climate and landform.

6. Grazing management practices would meet state and federal water quality standards. Developed springs having a sustained discharge yield of less than 2 gallons per day to surface or groundwater are excepted from meeting drinking water standards per SWRCB Resolution Number 88-63.

7. In the Planning Area, all wildfires in grazing allotments would be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g. tamarisk), prescribed burning may be utilized as a tool for restoration. Prescribed burns may be used as a management tool where fire is a natural part of the regime.

8. In years when weather results in extraordinary conditions, seed germination, seedling establishment and native plant species growth would be allowed by modifying grazing use.

9. Grazing on designated ephemeral rangeland would be allowed only if reliable estimates of production have been made, an identified level so annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.

10. During prolonged drought, range stocking would be reduced to achieve resource objectives and/or prescribed forage utilization. On yearlong allotments, livestock utilization of key perennial species would be checked prior to spring growing season (about March 1) when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.

11. Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals would be recorded and evaluated for future control measures. Methods and prescriptions would be implemented, and an evaluation would be completed to ascertain future control measures for undesirable species.

12. Restore, maintain, or enhance habitats to assist in the recovery of federal listed threatened and endangered species. Restore, maintain, or enhance habitats of special status species, including federally proposed or candidate, BLM sensitive, or California State threatened and endangered (T&E), to promote their conservation.

13. Grazing activities would support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.

14. Experimental and research efforts would be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts within outside agencies, groups, and entities.

15. Livestock utilization limits of key perennial species would be as shown in Table 2-13 for the various ranges types.

TABLE 2-13
LIVESTOCK UTILIZATION LIMITS OF KEY PERENNIAL SPECIES BY RANGE TYPE

Range type	Percent Use of Key Perennial Species	
	Poor-Fair Range Condition or Growing Season*	Good-Excellent Range Condition or Dormant Season*
Mixed Riparian Woodland	25	35
Oak Woodland	25	40
Desert Wash	25	35
Semi Desert Chaparral	30	40
Desert Fan Palm oasis	25	35
Mixed Conifer Woodland	25	40
Enriched Desert Scrub	25	40

* Rangeland in good condition or grazed during the dormant season can withstand the higher utilization level. Rangelands in poor condition or grazed during the active growth season would receive lower use levels.

2. Criteria for Classifying Allotments as Ephemeral

Allotments may be classified as Ephemeral in accordance with the Special Ephemeral Rule published December 7, 1968 though Rangeland Health Assessments. BLM has established criteria based upon the Special Rule through which allotments can be classified as ephemeral. These criteria include:

1. Rangelands are within the hot desert biome.
2. Average annual precipitation is less than 8 inches.
3. Rangelands produce less than 25 pounds per acre of desirable forage grasses.
4. The vegetative community is composed of less than 5 percent desirable forage species.
5. The rangelands are generally below 3,500 feet in elevation.
6. Annual production is highly unpredictable and forage availability is of a short duration.

7. Usable forage production depends on abundant moisture and other favorable climatic conditions.

8. Rangelands lack potential to improve existing ecological status and produce a dependable supply of forage through intensive rangeland management practices.

2.3.15 Mineral Resources

ECFO manages mineral resources in accordance with BLM's National Mineral Policy, the Energy Policy Act, and the National Energy Policy.

2.3.15.1 Management Actions Common to All Alternatives

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

2.3.15.2 Management Actions by Alternative

Table 2-14 lists the management prescriptions that vary by alternative as they affect access to and development of mineral resources within the Planning Area.

2.3.15.3 Mineral Resource Disposal from Public Lands

Development of mineral resources from public lands managed by the BLM is directed by Congress through various enabling laws under three general categories. These include:

A. Locatable Mineral Deposits. Minerals subject to location under the General Mining Law of 1872 (30 U.S.C. 22, et seq.; as amended) include metallic minerals such as gold, silver, copper, lead, zinc, and uranium; non-metallic minerals such as asbestos, barite, gypsum, and mica; and uncommon varieties of stone (43 CFR 3800). The General Mining Law of 1872 allows citizens and those seeking to become citizens of the United States the right to enter upon public lands and reserved interests for the purposes of exploration and development of minerals subject to this mining law. Appropriation of a mineral deposit is made by location of a mining claim. No rights under the mining laws can be exercised by a claimant until a discovery of a valuable mineral deposit has been made within the boundaries of the mining claim.

TABLE 2-14
POTENTIAL MINERAL RESOURCE DECISIONS BY ALTERNATIVE

	A	B	C	D	E
Locatable					
In areas of sensitive resource values, mining claims should be promptly examined and validity determination made.	X				
Propose withdrawal of the In-Ko-Pah Mountains ACEC from mineral entry.	X		X		X
Propose withdrawal of the Table Mountain ACEC from mineral entry.	X		X		X
Propose withdrawal of critical habitat from mineral entry.			X		
All critical habitat and ACECs would be available for mineral entry under the Mining Law, subject to Section 7 and Section 106 consultations.		X		X	
WSAs subject to IMP.	X	X		X	X
WSAs proposed for withdrawal from mineral entry.			X		
Leasable					
On the public lands within the Agua Caliente and Jacumba potential geothermal resources areas, permit geothermal exploration under a Notice of Intent.	X				
Critical habitat located within ACECs would be closed. The remainder of the critical habitat outside of the ACECs would be subject to no surface occupancy.		X			
Critical habitat and ACECs would be closed.			X		X
Open all critical habitat and ACECs, subject to Section 7 and Section 106 consultations.				X	
WSAs closed.		X	X		X
WSAs subject to Interim Management Policy (IMP).	X			X	
Salable					
Do not issue mineral sales or free use permits for the Canebrake Canyon/Sawtooth Mountains/Vallecito Valley areas. The material sale pit on the north side of Table Mountain should be investigated, and a determination made as to the desirability of future use.	X				
The material sale pit on the north side of Table Mountain should be investigated, and a determination made as to the desirability of future use.	X				
WSAs closed.		X	X		X
WSAs subject to the IMP.	X			X	
Critical habitat located within ACECs would be closed.		X			
Critical habitat and ACECs would be closed.			X		X
Open all critical habitat and ACECs, subject to Section 7 and Section 106 consultations.				X	

Exploration and development must be conducted in accordance with all applicable laws, regulations, and policies, and in conformance with the approved land use plan. Restrictions and stipulations may be applied to a proposed activity based on review and analysis by the authorized officer.

All activity is managed under the authority of the regulations at 43CFR 3809 (public lands and wilderness areas) and 43 CFR 3802 (wilderness study areas). Authorization is based on the level of disturbance and whether the activity is conducted in a special designation area. Casual use activities such as panning for gold, prospecting, and monumentation of mining claims are authorized by the regulations where disturbance will be nominal. No approval is required from the authorized officer of the BLM. Where exploration activities would cause more than nominal disturbance, and surface disturbance is five acres or less, a notice is required to be review by the authorized officer of the BLM to assure that unnecessary or undue degradation would not occur to public lands or resources. A plan of operations is required for surface disturbance greater than five acres, in a special area, or for mining activity greater than casual use. A plan of operations must be approved by the authorized officer of the BLM and may be subject to stipulations to assure conformance with the land use plan.

BLM manages to protect sensitive resources by defining protective prescriptions in land use planning that are to be applied in any approval of activities. Where mineral development activity would adversely affect sensitive resource values, the BLM may petition for withdrawal an area from the operation of the mining laws.

B. Leasable Minerals. Leasable minerals which include fluid energy mineral deposits such as oil, gas, coal bed methane, carbon dioxide (CO_2), and geothermal resources. Solid energy and or industrial minerals such as coal, sodium, and potash, are also disposed of from public lands by the BLM through lease. Although not a leasable mineral, helium is included in this category, because it is typically associated with CO_2 exploration and development (43 CFR 3100 and 43 CFR 3200).

Laws and regulations applicable to federal leasing in the Planning Area include:

- Mineral Leasing Act of 1920 as amended and supplemented
- Acquired Lands Mineral Leasing Act of 1947
- Mining and Minerals Policy Act of 1970

- Federal Onshore Oil and Gas Leasing Reform Act of 1987
- 43 CFR 3100 (Oil and Gas Leasing)
- 43 CFR 3200 (Geothermal Resource Leasing)
- BLM Manual Series 3100—Onshore Oil and Gas Leasing (and handbooks)

BLM defines geothermal resources as nonrenewable energy fluid minerals that can be developed after obtaining a lease from BLM. Regulations applicable to geothermal leasing of federal minerals in the Planning Area include but are not limited to:

- Geothermal Steam Act of 1970
- 43 CFR 3200

BLM also disposes of minerals on lands acquired by the USFS and are subject to surface restriction and management in accordance with approved USFS management plans. The authority for disposal on acquired lands is pursuant to the Weeks Act of March 4, 1917 (Weeks Act; 16 USC 520, 491, 499; see also Act of September 2, 1958). The Secretary is authorized to lease coal, oil, gas, sodium, potassium, and sulfur on lands acquired by a federal agency under the Act of August 7, 1947 (Acquired Lands Leasing Act; 30 USC 351-359; except National Parks and cities). BLM must have concurrence from the appropriate forest or other federal department unit manager before approving prospecting permits and leases.

The lease is a right to access and develop mineral resources contained within the boundaries of the leased area in compliance with the lease terms and in conformance with appropriate local, state, and federal laws and regulations. Where information necessary to classify as valuable public lands for minerals subject to the leasing laws, prospecting permits may be authorized before leases would be approved. Where mineral deposits subject to leasing are known to be valuable, BLM may offer to lease through competition. Competitive leasing is required for all oil and gas. Leases are typically termed for 20 years, and are extended as long as in producing status. A payment of an annual rental and or a royalty for minerals produced is made to the United States by the lessee.

In some situations where sensitive resource values occur, a lease may be issued with a no surface occupation (NSO) requirement. This requirement must assure that the mineral deposit on the lease could be developed by means of off-site development.

A determination that lands are available for leasing represents a commitment to allow surface use under standard terms and conditions unless stipulations constraining development are attached to leases. When applying leasing restrictions, the least restrictive constraint to meet the resource protection objective would be used.

For reserved mineral interests in private land leasing of federal mineral estate on lands where the surface is not held by the federal government would be done in accordance with federal law, regulations and policy guidance. The surface owner would be notified prior to lease and given the opportunity to comment.

C. Salable Minerals. These minerals include construction materials such as sand, gravel, cinders, decorative rock, and building stone as described in (43 CFR 3600). Laws and regulations applicable to salable minerals on public lands in the Planning Area include:

- Acquired Lands Mineral Leasing Act of 1947
- Mineral Materials Act of 1947 as amended
- FLPMA; and 43 CFR Part 3600
- Surface Resources Act of 1955
- BLM Handbook H3042-1—Solid Minerals Reclamation Handbook
- BLM Manual and Handbook 3600

Disposal of mineral materials from BLM-administered lands requires either a sales contract or a free use permit from the appropriate BLM office. Disposal of mineral materials is authorized in accordance with appropriate laws, regulations, and policies in conformance with the approved land use plan and if disposal is determined to be in the public interest. Use of public lands and resources for salable mineral development cannot be allowed if not in the public interest, and if such action would result in unnecessary or undue degradation to public lands or resources.

2.3.15.2 Locatable Mineral Management

It is BLM's goal in this plan to make public land and resources available for prospecting and location of valuable (locatable) mineral deposits to meet local, regional and national needs for metals and industrial minerals, and protect sensitive resource values.

2.3.15.2.1 Goals and Objectives

- Provide opportunities for exploration, location, and development of mining claims and sites while preventing unnecessary or undue degradation of public lands and resources.

2.3.15.2.2 Management Actions Common to All Alternatives

- 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. Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.
- Require notices, when mechanical equipment is used for exploration or processing and cumulative disturbance is less than five acres.
- Require mining plans for operations where disturbance is greater than five acres and/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.
- Require a mining plan of operations in any Special Designation in accordance with existing 3809 regulations.
- 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 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).

2.3.15.3 Leasable Mineral Management

2.3.15.3.1 Goals and Objectives

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

2.3.15.3.2 Management Actions Common to All Alternatives

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

2.3.15.3.3 Management Actions by Alternative

Leasable minerals would be available as described in Table 2-14 above, which provides management actions that vary by alternative.

2.3.15.4 Salable Mineral Materials Management

2.3.15.4.1 Goals and Objectives

- Prevent unnecessary or undue degradation of public lands.
- Respond appropriately to increasing demand for mineral materials in the Planning Area.
- Provide mineral materials on a case-by-case basis for infrastructure development.

2.3.15.4.2 Management Actions Common to All Alternatives

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

2.3.15.4.3 Management Actions by Alternative

Salable minerals materials would be available as described in Table 2-14, which provides management actions that vary by alternative.

2.3.16 Recreation Resource Management

There are several regulations, laws, policies, and guidelines that authorize and direct BLM recreation management activities. FLPMA originally mandated that the BLM was to manage outdoor recreation resources on public lands.

BLM recognizes that natural resource-based recreation tourism is a significant economic contributor in most communities adjacent to public lands. *Priorities for Recreation and Visitor Services* (DOI BLM 2003) states, "Our multiple-use mission is to serve the diverse outdoor recreation demands of visitors while helping maintain the sustainable conditions needed to conserve their lands and their recreation choices." This visitor services document also sets three primary goals for the BLM recreation program:

1. Improve access to appropriate recreation opportunities on DOI-managed or -partnered lands and waters.

2. Ensure a quality experience and enjoyment of natural and cultural resources on DOI-managed or -partnered lands and waters.

3. Provide for and receive fair value in recreation.

The public lands are managed to maintain a variety of recreational opportunities. As such, a majority of public lands have recreation opportunities that can be appropriately provided for in conjunction with the other resource demands sanctioned by the BLM's multiple-use mission.

2.3.16.1 Recreation Management Areas

BLM identifies Special Recreation Management Areas (SRMA) where the resources of the public lands attract visitors from one of the three following recreation markets:

- Public lands with a demonstrated *community* recreation market would be managed as a Community SRMA. A Community SRMA is managed in collaboration with the local community to primarily benefit the local residents.

- Public lands with a demonstrated *destination* recreation market would be managed as a Destination SRMA. A Destination SRMA is managed as a regional or national destination through collaborative partnerships.

- Public lands with a demonstrated *undeveloped* recreation market would be managed as an Undeveloped SRMA. An Undeveloped SRMA is managed to intentionally maintain dispersed and undeveloped recreation opportunities.

BLM lands outside of SRMAs must be managed as Extensive Recreation Management Areas (ERMA). Recreation management within ERMAs would be limited to custodial actions only. Custodial actions are those necessary to manage dispersed activities, visitor health and safety, and user and resource conflicts.

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

For decisions concerning off-highway vehicle (OHV) recreation within the Planning Area, please see the Transportation and Public Access section.

Recreation Management Areas by alternative are presented in Table 2-15 below. Figures 2-9 and 2-10 identify the locations of the SRMAs by alternative. There are currently no SRMAs designated within the Planning Area; however, 38,690 acres were previously identified in the McCain Valley National Cooperative Land and Wildlife Management Area in accordance with the McCain Valley Recreational Area Management Plan (RAMP; DOI BLM 1979).

TABLE 2-15
RECREATION MANAGEMENT AREAS BY ALTERNATIVE (ACRES)

SRMA (acres)	Alternative				
	A	B	C	D	E
Boulevard Destination SRMA	n/a	43,019	43,019	43,019	43,019
Julian Destination SRMA	n/a	15,180	15,180	15,180	15,180
Sawtooth Destination SRMA	n/a	45,104	n/a	45,104	45,104
Sawtooth Undeveloped SRMA	n/a	n/a	45,104	n/a	n/a
ERMA	n/a	0	0	0	0
Total BLM acres	103,303	103,303	103,303	103,303	103,303

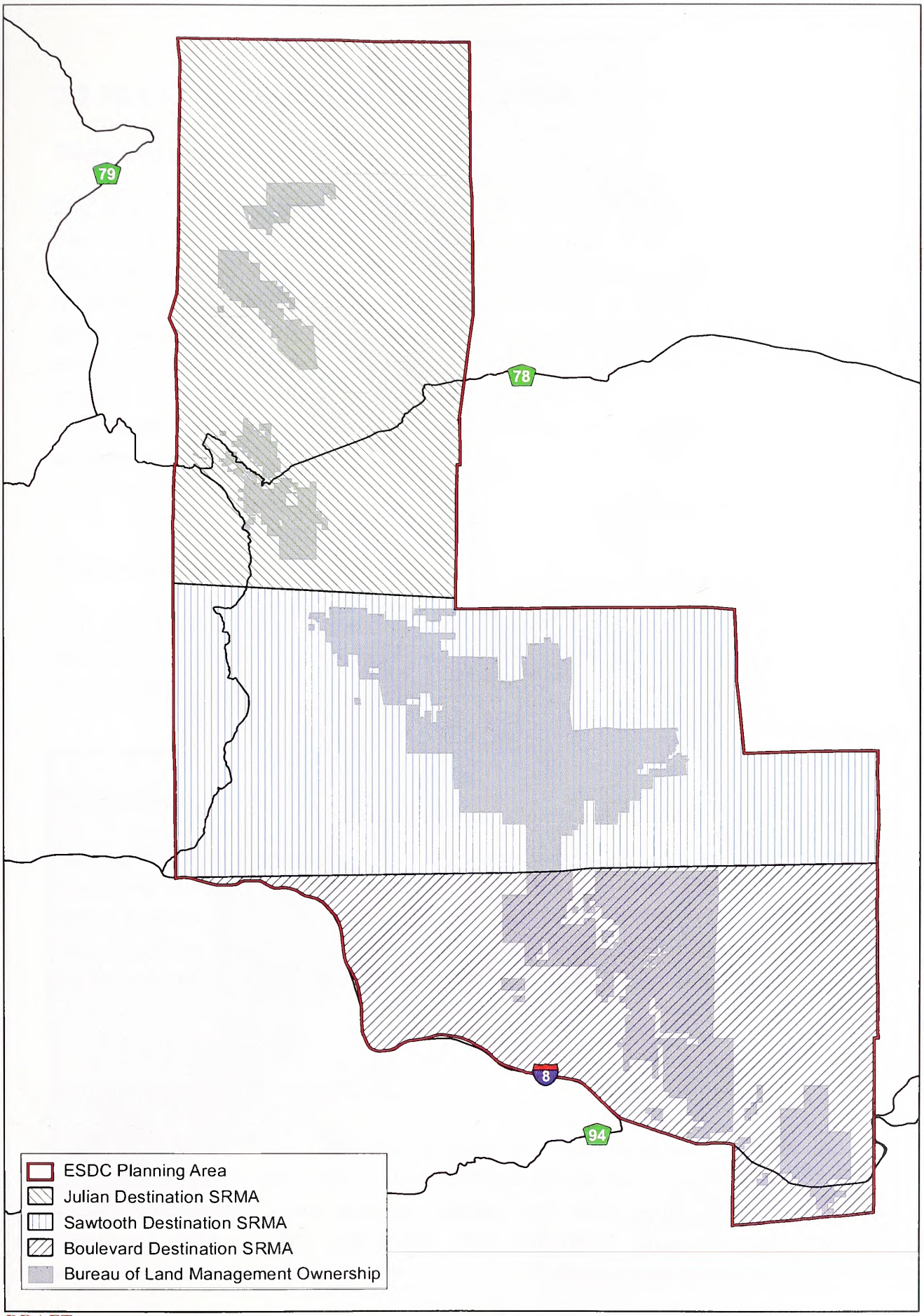

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FIGURE 2-9: Special Recreation Management Areas Alternatives B, D, and E

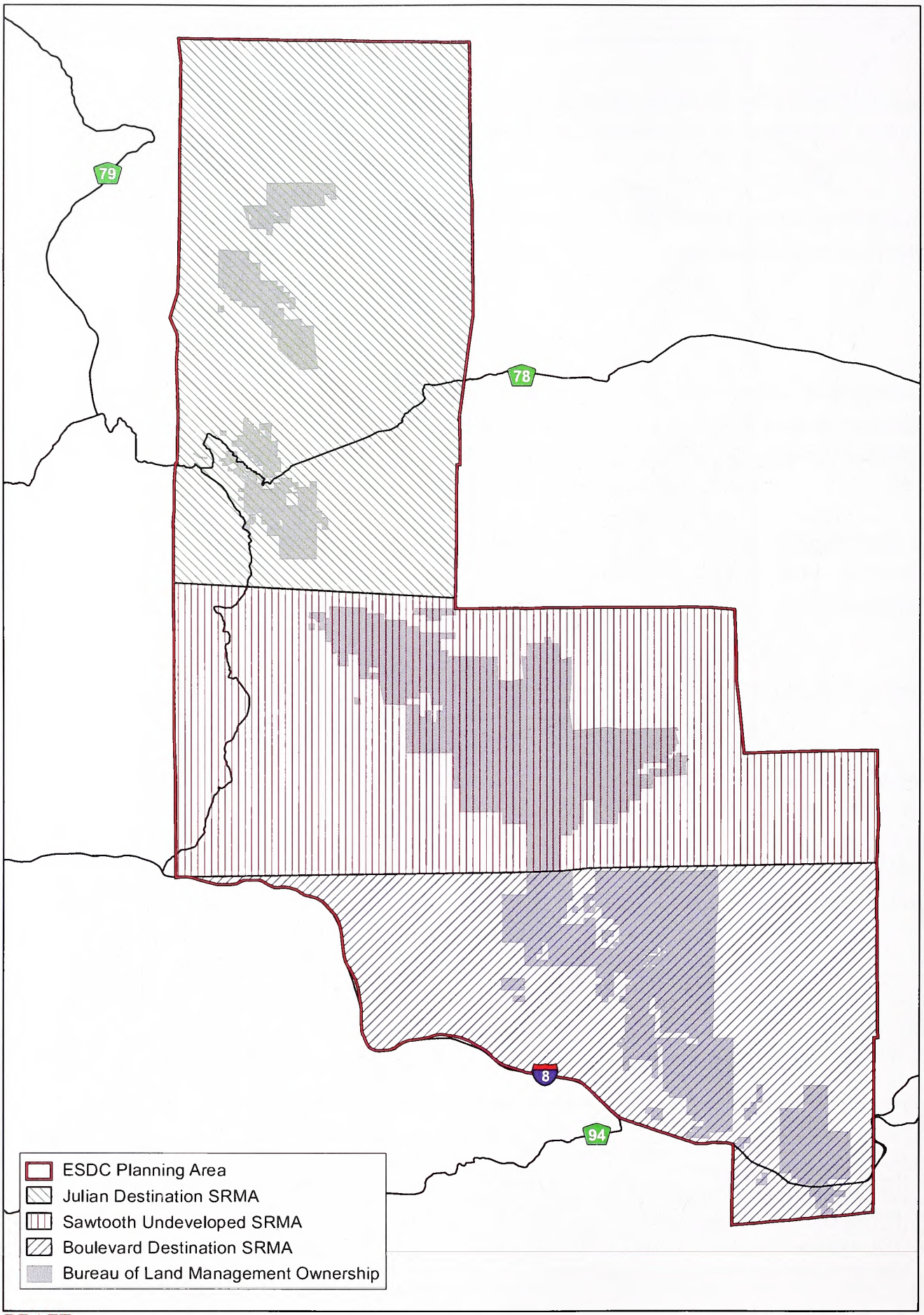

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FIGURE 2-10: Special Recreation Management Areas
Alternative C

2.3.16.1.1 Boulevard Destination SRMA

Goals and Objectives

The Boulevard 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 would 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 SRMA would be to target demonstrated destination recreation market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

BLM would coordinate with local communities, Native American tribes and groups, Cleveland National Forest, California SHPO, San Diego Archaeological Society, San Diego County, CDFG, USFWS, U.S. Border Patrol (USBP), California State Parks, California Department of Forestry, California State Lands Commission, and local public health and safety organizations, and various non-governmental organizations (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 would provide information about geology, wildlife, and other points of interest. BLM would implement wildland fire prevention and mitigation, invasive species prevention, wilderness survival skills programs.

2.3.16.1.2 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 would 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 SRMA would be to target demonstrated destination recreation market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

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

2.3.16.1.3 Sawtooth Destination SRMA

Goals and Objectives

The Sawtooth Destination SRMA is composed primarily of designated wilderness 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 would be accommodated, outside of designated wilderness and WSAs. This SRMA would be managed as a regional or national destination through collaborative partnerships in order to promote the continued use of the lands for these activities. The Sawtooth Destination SRMA would be established under Alternatives B, D, and E.

Primary Market Strategy

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

Partnerships and Coordination

BLM would coordinate with local communities, Native American tribes and groups, California SHPO, San Diego Archaeological Society, San Diego County, CDFG, USFWS, USBP, California State Parks, California Department of Forestry, 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 would provide information about geology, wildlife, and other points of interest. BLM would implement wildland fire prevention and mitigation, invasive species prevention, wilderness survival skills programs.

2.3.16.1.4 Sawtooth Undeveloped SRMA

Goals and Objectives

The Sawtooth Undeveloped SRMA is composed primarily of designated wilderness 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. This SRMA would be managed to intentionally maintain dispersed and undeveloped

recreation opportunities. The Sawtooth Undeveloped SRMA would be established under Alternative C.

Primary Market Strategy

The primary strategy for the proposed Sawtooth Undeveloped SRMA would be to target demonstrated undeveloped recreation market demand for specific activity, experience, and benefit opportunities.

Partnerships and Coordination

BLM would coordinate with local communities, Native American tribes and groups, California SHPO, San Diego Archaeological Society, San Diego County, CDFG, USFWS, USBP, California State Parks, California Department of Forestry, 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 would provide information about geology, wildlife, and other points of interest. BLM would implement wildland fire prevention and mitigation, invasive species prevention, wilderness survival skills programs.

2.3.16.2 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 would 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 would 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.

Recreation Management Zones by SRMA are presented in Table 2-16 below. Figures 2-11 and 2-12 illustrate the locations of the RMZs.

2.3.16.2.1 Boulevard SRMA

Airport Mesa RMZ

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

TABLE 2-16
RECREATION MANAGEMENT ZONES BY SRMA

Recreation Management Zone (RMZ)	Boulevard Destination SRMA	Julian Destination SRMA	Sawtooth Destination SRMA	Sawtooth Undeveloped 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	
Oriflamme Primitive RMZ				X
San Felipe/San Ysidro Wilderness RMZ		X		
Sawtooth Wilderness Semi-Primitive RMZ			X	
Sawtooth Wilderness Primitive RMZ				X
Table Mountain RMZ	X			
Table Mountain Wilderness RMZ	X			

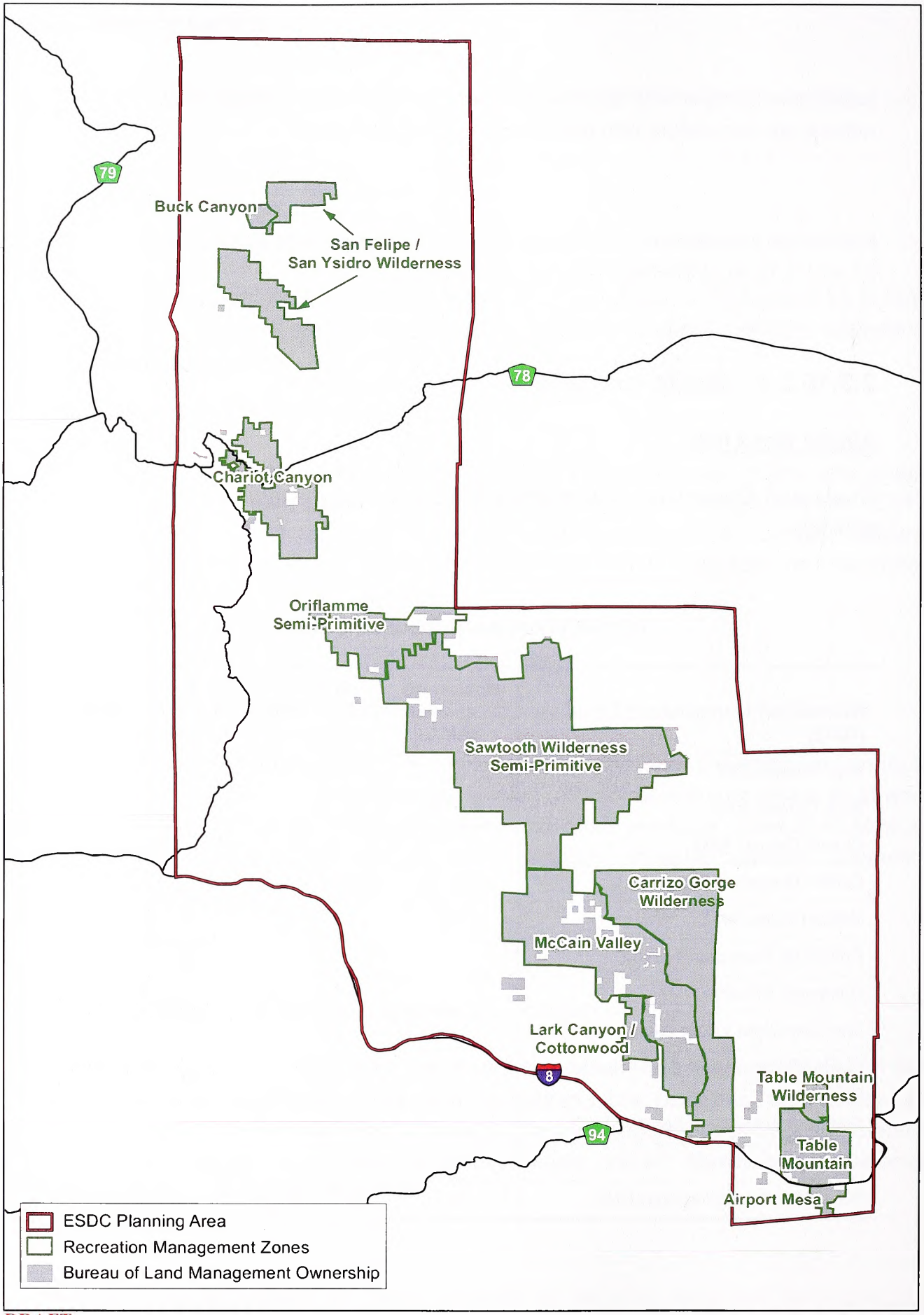

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FIGURE 2-11: Recreation Management Zones
Alternatives B, D, and E

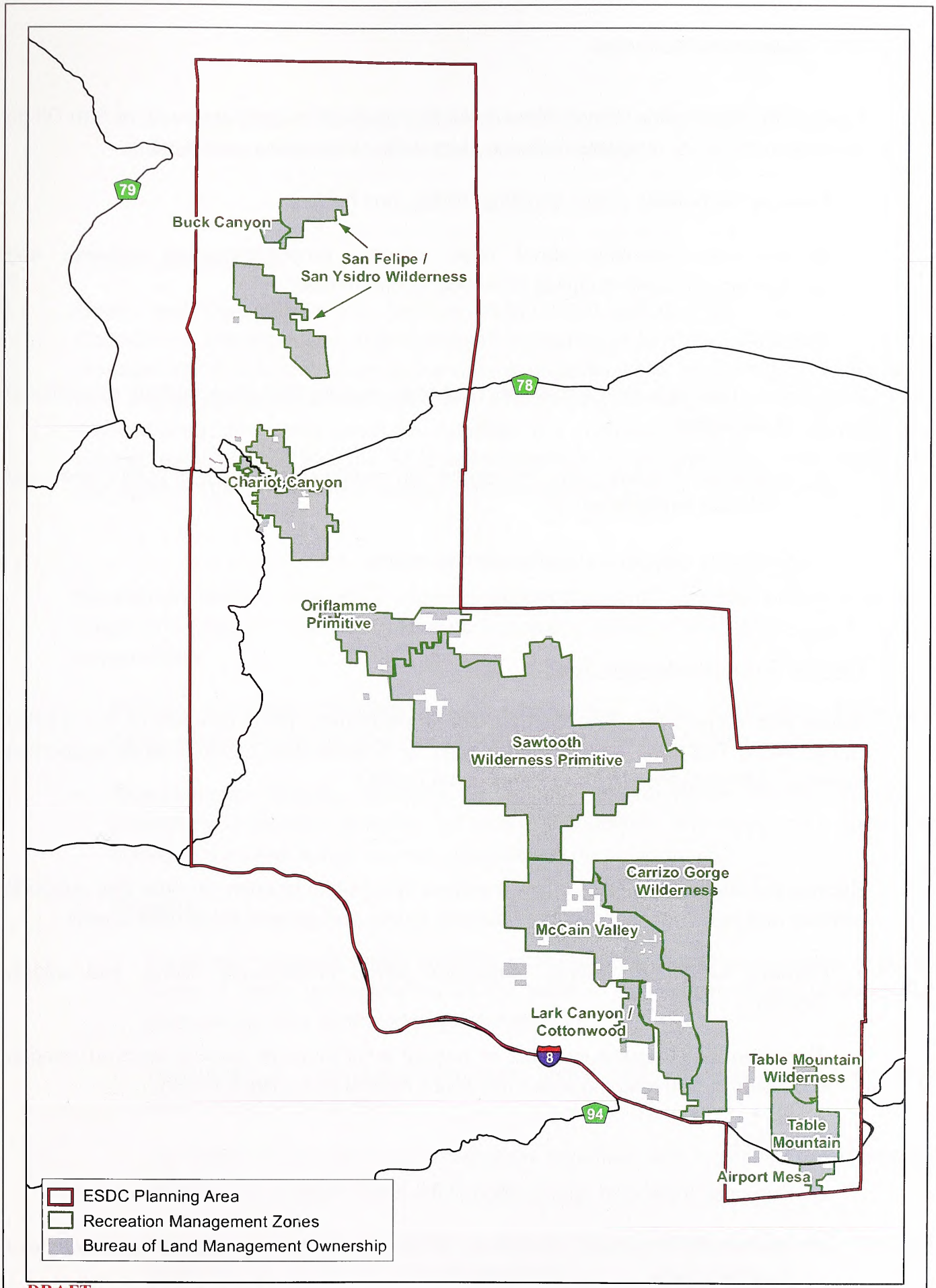

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FIGURE 2-12: Recreation Management Zones
Alternative C

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.

Carrizo Gorge Wilderness RMZ

Goals and Objectives: The Carrizo Gorge Wilderness RMZ consists of the Carrizo Gorge WSA. This RMZ would 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, 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.

McCain Valley RMZ

Goals and Objectives: The McCain Valley RMZ includes the Lark Canyon and Cottonwood Campgrounds and developed recreational facilities. This RMZ would be managed for it 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 would 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, mountain bike riding, hiking, OHV riding, 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.

Table Mountain RMZ

Goals and Objectives: The Table Mountain RMZ would be managed for it 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.

Table Mountain Wilderness RMZ

Goals and Objectives: Table Mountain Wilderness RMZ consists of the Table Mountain Wilderness Study Area. This RMZ would 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 and wildlife viewing.
- **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.

2.3.16.2.2 Julian SRMA

San Felipe Hills/San Ysidro Wilderness RMZ

Goals and Objectives: San Felipe/San Ysidro Hills Wilderness RMZ consists of the San Felipe Hills and San Ysidro WSAs. This RMZ would be managed for it wilderness qualities while working in conjunction with Native American tribes, California State Parks, and USFS. The BLM would 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; 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.

Buck Canyon RMZ

Goals and Objectives: Buck Canyon RMZ would be managed as a Limited Use Area emphasizing its historical, cultural and natural qualities while supporting recreational activities. An equestrian parking/turnaround area has been proposed for future development 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 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.

Chariot Canyon RMZ

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

2.3.16.2.3 Sawtooth Destination SRMA

The establishment of the Sawtooth Destination SRMA is proposed under Alternatives B and D, as well as the Preferred Alternative (E). The two RMZs in this SRMA would be managed as Semi-Primitive under these three alternatives, as described below.

Oriflamme Semi-primitive RMZ

Goals and Objectives: Oriflamme Semi-Primitive RMZ is a remote Limited Use Area that would be managed for it historical, cultural and natural qualities. The RMZ would continue to support the management plan and agreements for Pacific Crest NST, USFS, and California State Parks. Road improvements and the development of a picnic area have been proposed 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 are of the Planning Area.

- **Primary Activities:** OHV riding, hunting, hiking, horseback riding, photography, and wildlife viewing.
- **Experiences:** Recreating as a family, enjoying safe access to our public lands, 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.

Sawtooth Wilderness Semi-primitive RMZ

Goals and Objectives: The Sawtooth Wilderness Semi-primitive RMZ consists of the Sawtooth Wilderness and Wilderness Study Areas. There are also a few small scattered BLM-administered lands adjacent to the designated wilderness and WSAs within the RMZ. This RMZ is a rugged area that would be managed for it wilderness qualities while working in conjunction with Native America tribes and California State Parks. Road improvements and the development of a trailhead have been proposed on the BLM-lands adjacent to the designated wilderness 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 and photography.
- **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.

2.3.16.2.4 Sawtooth Undeveloped SRMA

The establishment of the Sawtooth Undeveloped SRMA is proposed under Alternative C. The two RMZs in this SRMA would be managed as primitive under this alternative, as described below.

Oriflamme Primitive RMZ

Goals and Objectives: Oriflamme Primitive RMZ is a remote Limited Use Area that would be managed for it historical, cultural, and natural qualities. The RMZ would continue to support the management plan and agreements for the Pacific Crest NST and California State Parks.

Recreation Niche: The RMZ provides a range of trail-based recreation opportunities for limited OHV use and undeveloped, dispersed and non-motorized activities.

- **Primary Activities:** Camping, picnicking, hunting, hiking, horseback riding, and wildlife viewing.
- **Experiences:** Recreating as a family, enjoying safe access to our public lands, 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.

Sawtooth Wilderness Primitive RMZ

Goals and Objectives: The Sawtooth Wilderness Primitive RMZ consists of the Sawtooth designated wilderness and WSAs. There are also a few small scattered BLM-administered lands adjacent to the designated wilderness and WSAs within the RMZ. This RMZ is a rugged area that would be managed for its wilderness qualities while working in conjunction with Native America tribes and California State Parks.

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

- **Primary Activities:** Hiking, backcountry camping, horseback riding, wildlife viewing and photography.
- **Experiences:** Regular exercise in natural environments, seeing riparian ecosystems, learning about the area's natural and cultural history, and living adjacent to safe and convenient access to public lands with recreational opportunities.
- **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.

2.3.16.3 Management Actions Common to All Alternatives

- Collect Recreation Use Permit (RUP) fees at Cottonwood and Lark Canyon Campgrounds under the authority of Federal Lands Recreation Enhancement Act (FLREA).
- 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.
- Maintain, install, and improve informational and interpretive kiosks and signs at the main points of access and interest throughout the field office. Signage should focus on informing visitors of applicable regulations and sustainable outdoor recreation ethics.
- Protect at-risk cultural resources from recreational damage as needed throughout the field office. Protection measures could include, but are not limited to fencing, signage, and trail realignments, restorations, and use limitations.
- 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.

2.3.16.4 Management Actions by Alternative

Table 2-17 provides a list of management actions that vary by alternative.

TABLE 2-17
PROPOSED RECREATION MANAGEMENT ACTIONS BY ALTERNATIVE

Management Action	Alternative				
	A	B	C	D	E
Limit group size for Table Mountain to 12 visitors.		X	X		X
Reseed and fence off eroding sites in the McCain Valley campgrounds and restrict off-road vehicle use in campgrounds as decided in the 1979 McCain RAMP; allow other sites to revegetate naturally. Install erosion control devices in campground areas where necessary, but protect archaeological resources from construction activities in Cottonwood Campground. Reseed only with native species.	X				
Take steps to control erosion on vehicle routes now closed to use east of the McCain Valley Road. Reseed "Competition Hill"; allow natural revegetation in other areas. Install erosion control structure on "Competition Hill" as needed. Utilize native species for reseeding.	X				
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 would 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.	X	X		X	X
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 would be reviewed for consistency with approved DRMP and revised accordingly.		X	X	X	X

2.3.17 Transportation and Public Access

Public lands managed by the BLM in the Planning Area are intermingled with lands administered by other federal agencies, county, state, and private lands. Managing access to and across public lands is a vital task for BLM. The authorities for the BLM to manage transportation and public access to and on the public lands include but are not limited to:

- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)
- Endangered Species Act (16 U.S.C. 1531 et seq.)
- Americans with Disabilities Act (ADA), 1990
- EO 11644
- EO 11989

- Title 5 ROWs
- Revised Statute (RS 2477 roads)
- *National Management Strategy Motorized Off-Highway vehicle Use on Public Lands* (2001)
- *National Mountain Bicycle Strategic Action Plan* (2002)

Upon signing the Record of Decision for this DRMP/EIS, BLM would make the following decisions concerning transportation and public access for the public lands within the Planning Area:

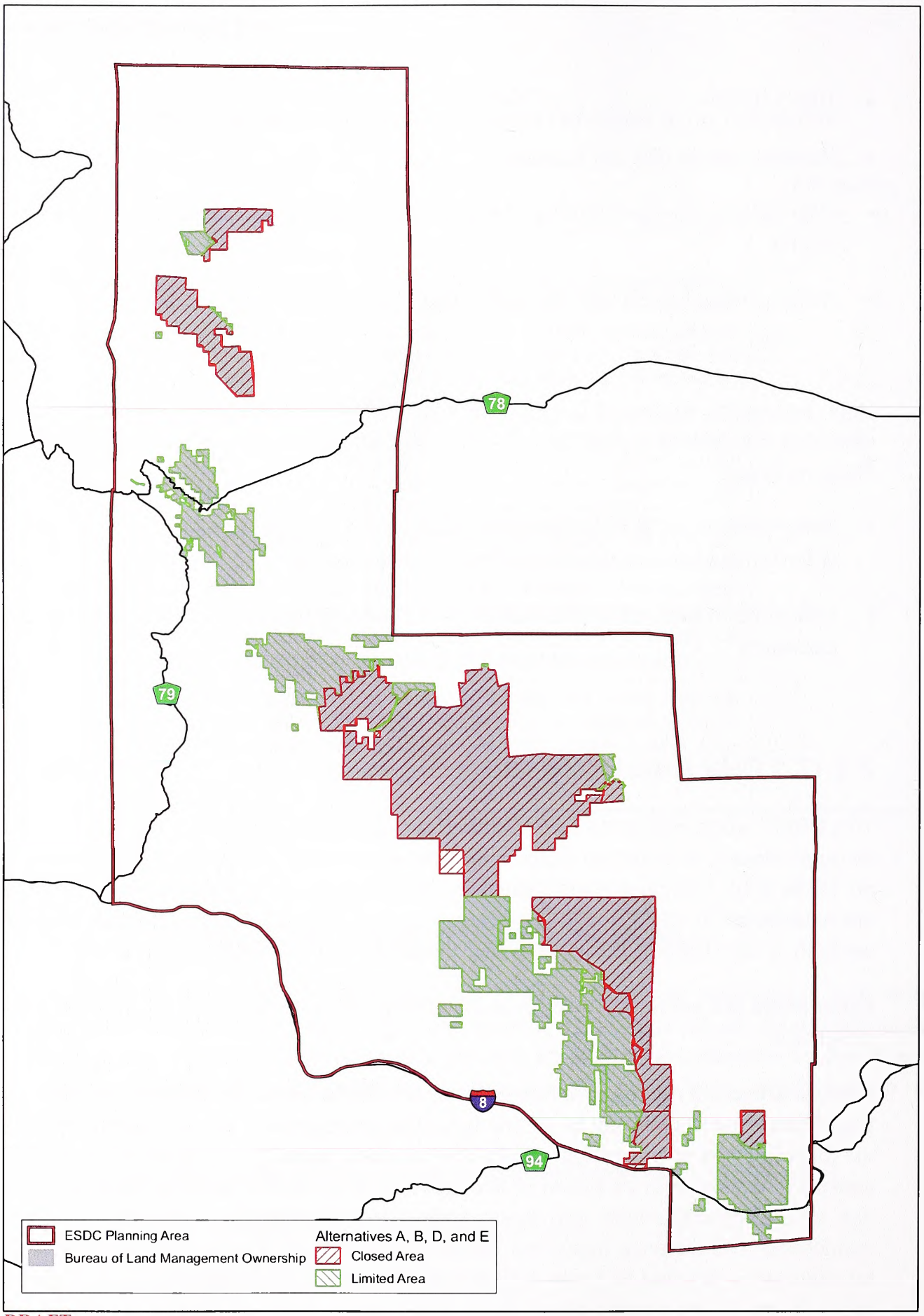
- Designation of all BLM-administered lands within the Planning Area as open, closed, or limited to OHV use (Land Use Plan-level decision).
- Designate routes of travel within the Planning Area as Implementation-Level Decisions.

2.3.17.1 OHV Area Designations

This DRMP would designate all BLM-administered public lands within the Planning Area as open, closed, or limited to motorized travel as identified in Figures 2-13 and 2-14 and on Table 2-18. 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 this DRMP/EIS may only be changed through a DRMP amendment.

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 could pull off of a designated route varies by alternative (detailed in Table 2-18 below). This would be monitored on a continuing basis. If monitoring results show effects that exceed limits of acceptable change, the



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FIGURES 2-13: OHV Area Designations
Alternatives A, B, D, and E

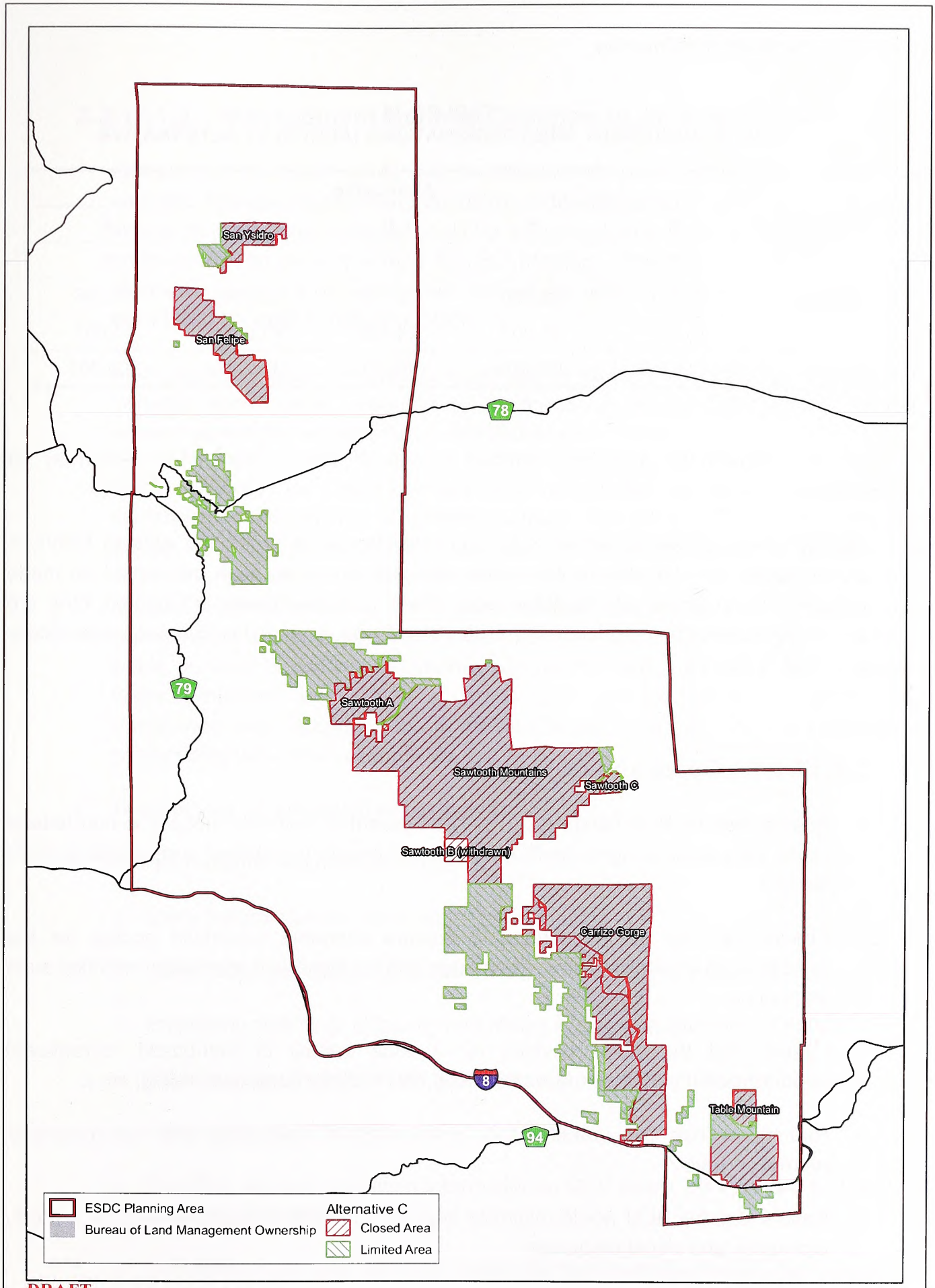

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FIGURE 2-14: OHV Area Designations Alternative C

TABLE 2-18
OHV MANAGEMENT AREA DESIGNATIONS (ACRES) BY ALTERNATIVE

Designation	Alternative				
	A	B	C	D	E
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303

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.

2.3.17.1.1 Goals and Objectives

- Ensure that the BLM continues to provide essential motorized access to non-federal lands, prior existing rights on BLM lands, and private in-holdings surrounded by BLM lands.
- Ensure that the BLM continues to provide adequate motorized access for the maintenance of wildlife water catchments and for dispersed recreation activities such as hunting.
- Ensure that the BLM provides for a wide variety of trail-based recreational opportunities (i.e. hiking, mountain biking, OHV riding, horseback riding, etc.).
- Reduce or halt the unauthorized proliferation of motorized and non-motorized recreation trails.
- Ensure that the BLM would minimize impacts to identified sensitive cultural, natural, biological, and visual resources.

2.3.17.1.2 Management Actions Common to All Alternatives

- General vehicle travel would 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 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. Areas proposed for restoration would first undergo NEPA compliance and compliance with Section 106 of the NHPA of 1966, as amended, to ensure compatibility with other resource values.

- The methods of restoration would 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.

2.3.17.2 Implementation Level Decisions: Routes of Travel

The BLM may use a single land use planning/NEPA (i.e., RMP/EIS) process to make both land use plan and implementation level decisions. The routes of travel displayed in this section and on Table 2-19 are implementation level decisions, not land use plan (RMP) level decisions.

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. Land use plan level decisions may be protested to the Director of the BLM when the Proposed RMP/Final EIS are filed with the Environmental Protection Agency before the RMP is approved. The implementation level decisions in this section may not be protested at this time since they are not RMP level decisions.

The BLM will make its decision on the implementation level decision in this section in the ROD for the approved RMP. Once these decisions are made in the ROD, only these implementation level decisions may be appealed in accordance with the appeal procedures that are applicable to designating routes of travel (43 CFR Part 4).

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. Non-motorized routes would be closed to motorized vehicles, including OHV, but open to biking, hiking, and equestrian use. Table 2-20 provides the total mileage of each of these classifications by alternative, and Figures 2-15 through 2-17 illustrate the locations of the various routes of travel classifications by alternative.

TABLE 2-19
ROUTES OF TRAVEL BY ALTERNATIVE

Route Designations	A	B	C	D	E
Designate all areas within Class M (as defined in Section 2.3.12) for vehicle use as "limited to existing routes of travel." All existing routes are open unless posted closed by BLM. Designate all areas within Class L (as defined in Section 2.3.12) for vehicle use as "limited to approved routes of travel," with the exception of Class L portion of the In-Ko-Pah Mountain ACEC north of the Sacatone Springs Road.	X				
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.		X	X	X	X
Non-motorized routes would be restored.		X	X	X	X
Designate the Class L portion of the In-Ko-Pah Mountains ACEC north of Lost Valley as "closed to vehicle use.	X				
Lark Canyon Recreation Zone, routes limited to ATVs 40" or less would be 10 feet wide, or 5 feet on each side of center.		X	X	X	X
Designate the Sawtooth Mountains WSA as limited to approved routes of travel for grazing and administrative purposes.	X				
Designate the Carrizo Gorge WSA as "closed" to vehicle use.	X				
Motorized vehicles may be allowed to pull off 300 feet from the edge of a designated route.	X			X	
Motorized vehicles may be allowed to pull off 100 feet from the edge of a designated route.		X			
Motorized vehicles may be allowed to pull off 25 feet from the edge of a designated route.			X		X
Route decisions based on importance for recreation, cultural, and biological.		X			X
Route decisions based on cultural and biological resources.			X		
Route decisions based on importance of the route.				X	
BLM roads would be inspected and maintained on a periodic basis.		X	X	X	X

TABLE 2-20
ROUTES OF TRAVEL CLASSIFICATION (MILES) BY ALTERNATIVE

Classification	Alternative				
	A	B	C	D	E
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage	191.20	191.20	191.20	191.20	191.20

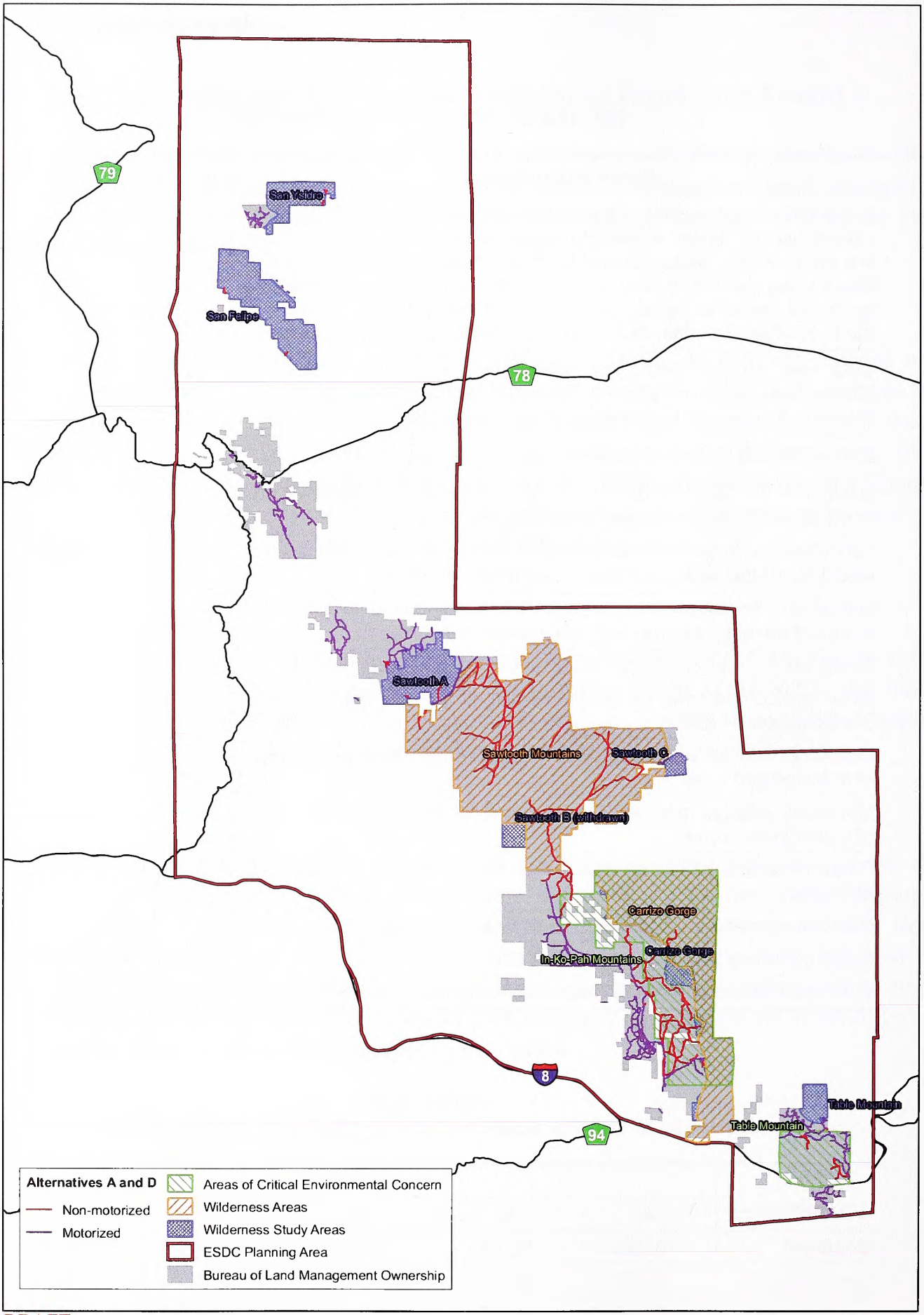

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FIGURE 2-15: Routes of Travel
Alternatives A and D

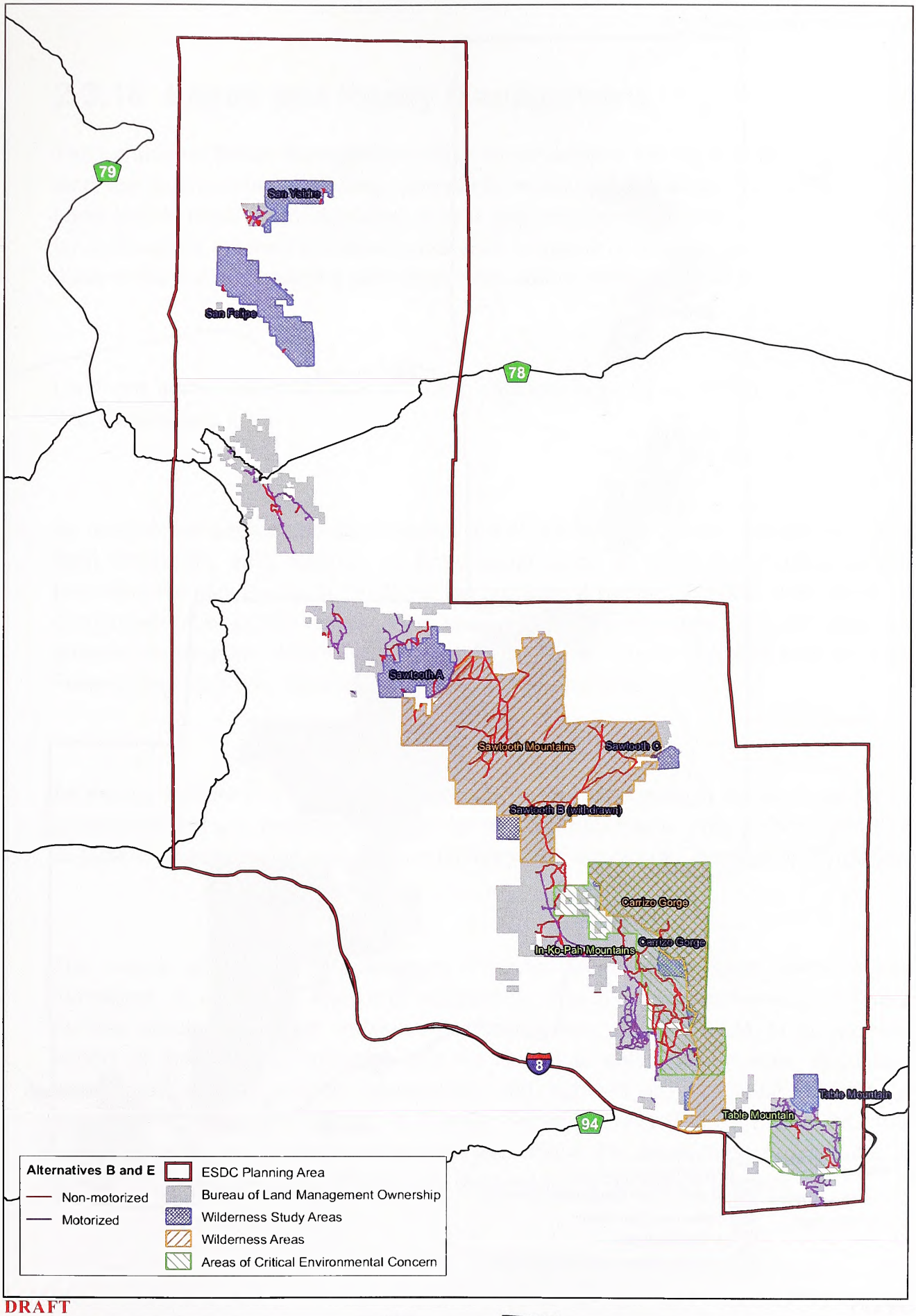

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FIGURE 2-16: Routes of Travel
Alternatives B and E

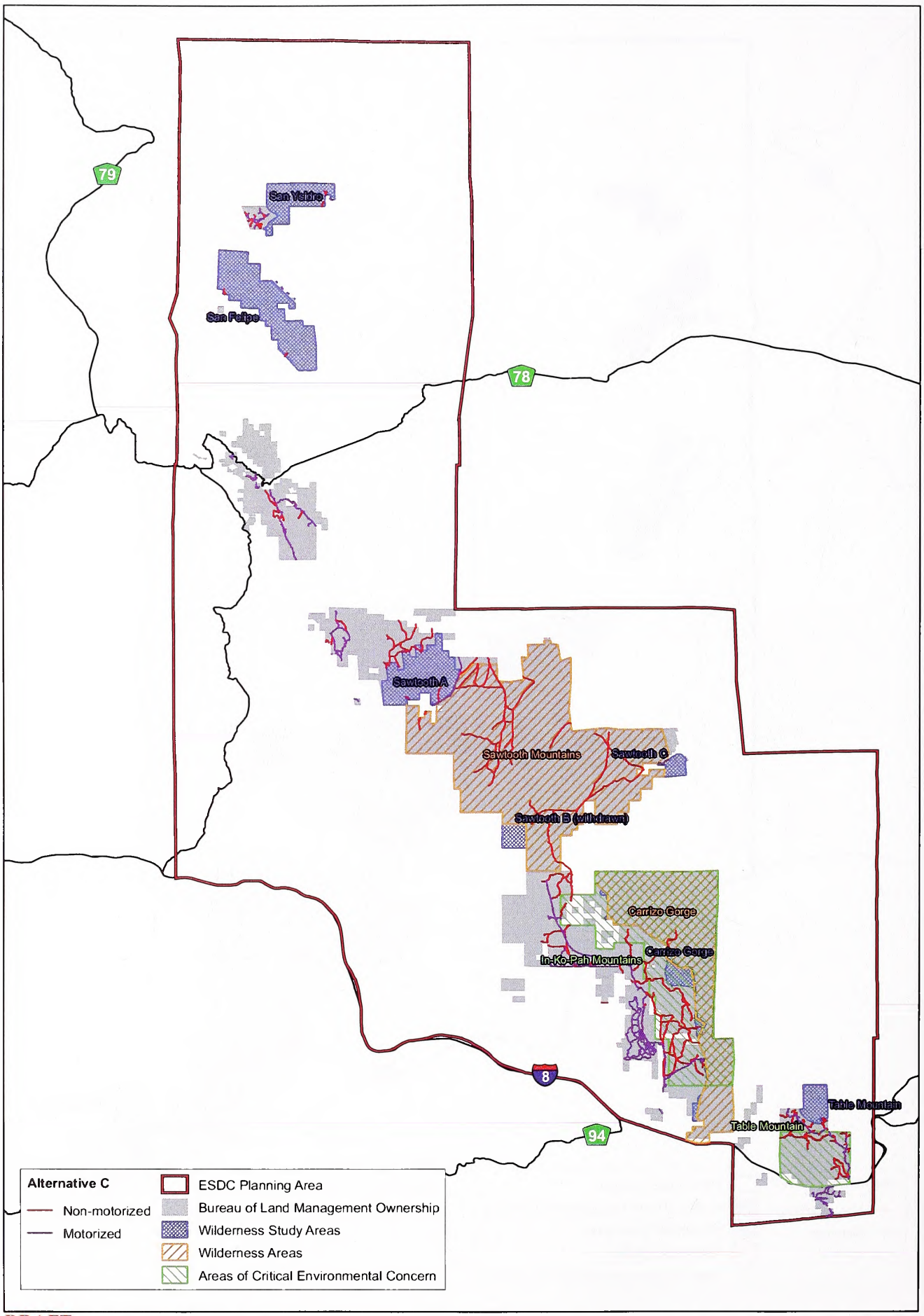

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FIGURE 2-17: Routes of Travel
Alternative C

2.3.18 Lands and Realty Management

The Lands and Realty Management Program consists of four distinct parts: land tenure, land use authorization (including renewable energy), withdrawals, and utility corridors. Land tenure focuses 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.

Land use authorization focuses on public demand requests for ROWs, permits, leases, and easements.

As used in the lands and realty program, a withdrawal removes an area of Federal land from settlement, sale, location, or entry under some or all of the general land laws (including the Mining Law of 1872), for the purpose of limiting activities under those 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 jurisdiction over an area of Federal land from one department, bureau, or agency to another.

An energy corridor is a linear strip that has been identified through the land use planning process as being a preferred location for existing and future utility ROWs, and that is suitable to accommodate one or more ROWs which are similar, identical or compatible

The Lands and Realty Management Program administers public lands within a framework of numerous laws and regulations. The most comprehensive of these is FLPMA which, along with implementing regulations, enables BLM to accomplish a variety of land actions, including but not limited to sales, withdrawals, acquisitions, exchanges, leases, permits, easements, and rights-of-way. In 1988, FLPMA was amended by the Federal Land Exchange Facilitation Act (FLEFA, 102 Stat. 1087). FLEFA established uniform rules and regulations for appraisals, procedures, and guidelines for the resolution of appraisal disputes in the exchange process.

Other applicable laws and policies include:

- Mineral Leasing Act (MLA) of 1920 (30 U.S.C. 185) as amended: BLM issues ROWs for oil and natural gas pipelines and related facilities pursuant to Section 28 of the MLA.

- Recreation and Public Purposes (R&PP) Act as amended: The act of June 14, 1926, as amended, (43 U.S.C. 869 et seq.) is used primarily for providing land to fulfill the need for public services (parks, monuments, schools, community buildings, hospitals, sanitary landfills) due to urban expansion.

- Airport and Airway Improvement Act of 1982 (49 U.S.C. 2215): The act provides for the conveyance of BLM administered lands to public agencies for use as airports and airways.

- Federal Highway Acts: Various Federal Highway Acts codified in 23 U.S.C., Sections 17 and 317 and the current Interagency Agreement also apply to lands and realty management.

- Federal Land Transaction and Facilitation Act (FLTFA [114 Stat. 613; 43 U.S.C. 2301 et seq.]) of July 25, 2000: The FLTFA amended FLPMA to allow retention by the BLM of receipts received from the sale of land or interests in land under Section 203 of FLPMA or conveyance of mineral interest under Section 209(b) of FLPMA, as long as the applicable land use plan was completed prior to July 25, 2000.

- The National Energy Policy and Executive Order 13212, dated May 18, 2001 provides direction to federal agencies to take appropriate actions to expedite the review of energy related ROW projects, support renewable energy development on federal lands (including wind energy), and improve efficiencies in the processing of ROW applications.

A summary of potential lands and realty management actions by alternative is presented in Table 2-21 below.

TABLE 2-21
PROPOSED LANDS AND REALTY ACTIONS BY ALTERNATIVE

Lands Actions	Alternative				
	A	B	C	D	E
Land Tenure					
Disposal (acres)	1,715	1,080	0	1,080	490
Acquisitions	Lands and interests in lands (including easements) would be acquired from willing sellers on a case-by-case basis. Emphasis would 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.				
Land Use Authorizations					
Leases, Permits, and Easements	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				
ROWs	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				
Communication Sites (number)	2	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.			
Renewable Energy	Considered and authorized on a case-by-case basis to meet public demand consistent with exclusion and avoidance areas identified by alternative.				
WAs and WSAs are exclusion areas	X			X	X
ACECs and VRM Class II are avoidance areas.		X	X		X
Critical habitat is avoidance area.		X			X
Critical habitat is an exclusion area. Quino recovery area is avoidance.			X		
No exclusion or avoidance areas except WAs and WSAs. No adverse modification for critical habitats.				X	
Wind energy development would be subject to best management practices, as outlined in the national wind energy policy or as updated.		X	X	X	X
Withdrawals (acres)					
Existing Withdrawal–WAs	48,333	48,333	48,333	48,333	48,333
Existing Withdrawal-PLOs[1]	26,696	26,696	26,696	26,696	26,696
Proposed Withdrawal–BLM only[2]	26,479	0	26,102	0	9,471
Utility Corridor (number/miles)	1/1,920	1/980	1/980	1/980	1/980

[1] These lands are withdrawn from application under certain non-mineral public land laws and from disposition under the homestead, desert land, and scrip selection laws, and excludes overlap with WAs.

[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.

2.3.18.1 Land Tenure

2.3.18.1.1 Disposal

All land disposal actions are discretionary with emphasis on the evaluation of whether such lands are 1) manageable, 2) needed for any particular federal purpose, or 3) better suited to serving the public. Exchanges are used for disposal in order to assure an optimum final land ownership pattern and provide better overall land management. Sales would be considered where more efficient. Sales are primarily competitive or modified competitive. Disposal of these lands would be made on a case-by-case basis and would be accomplished by the most appropriate disposal authority.

Public lands 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 or affect Native American cultural values. Exceptions to these criteria could occur, such as disposal to a non-Federal governmental agency or private organization better qualified to ensure the protection of the sensitive species, habitat, or resources. Disposal actions are usually in response to a public request or application. BLM could dispose of withdrawn lands with the concurrence of the withdrawing agency.

There are two distinct disposal methods outlined in FLPMA, sale and exchange.

- Land disposal by public sale is addressed in Section 203 of FLPMA. This section contains three criteria to apply in identifying public lands suitable for disposal by public sale. The criteria are that a) the tract of public land is difficult and uneconomical to manage as part of the public lands and is not suitable for management by another federal department or agency, b) the land is no longer required for a specific purpose, or c) disposal would serve important public objectives.

- The criteria for determining which public lands or interests therein are available for disposal by exchange are covered in Section 206 of FLPMA. These criteria require BLM to consider the public interest by giving full consideration to better federal land management and the needs of state and local people. These include the need of lands for the economy, community expansion, recreation areas, food fiber, minerals, and fish and wildlife. The criteria also require that the public objectives to be served must be greater on the lands to be acquired than on the lands to be conveyed.

The BLM may also dispose of lands under the following four authorities:

- **Desert Land Entry Act of 1877**. No lands have been identified as meeting the criteria for entry under this authority; therefore, none are available for disposal under this authority.

- **Indian Allotment Act of 1887.** No lands have been identified as meeting the criteria for entry under this authority; therefore, none are available for disposal under this authority.

- **The 1954 Revision of the Act of June 14, 1926 (R&PP) Act.** This authorizes the lease and/or conveyance of BLM-administered lands for recreational or public purposes to state and local governments and to qualified nonprofit organizations under specified conditions at less than the fair market value.

- **The Airport and Airway Improvement Act of 1982.** This act provides for the conveyance of BLM-administered lands to public agencies for use as airport and airways.

In general, under all land ownership adjustments, BLM would protect valid existing rights and pre-existing authorizations, including but not limited to authorized permits, leases, and ROWs.

Land Available for Disposal by Alternative

Specific lands available for disposal are shown on Figures 2-18 (Alternative A), 2-19 (Alternatives B and D), and 2-20 (Alternative E) and are listed by alternative in Appendix F.

Goals and Objectives

- 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.

- Retention of lands to benefit resource values and management.

- Land ownership patterns would be consolidated to achieve more efficient and effective resource management.

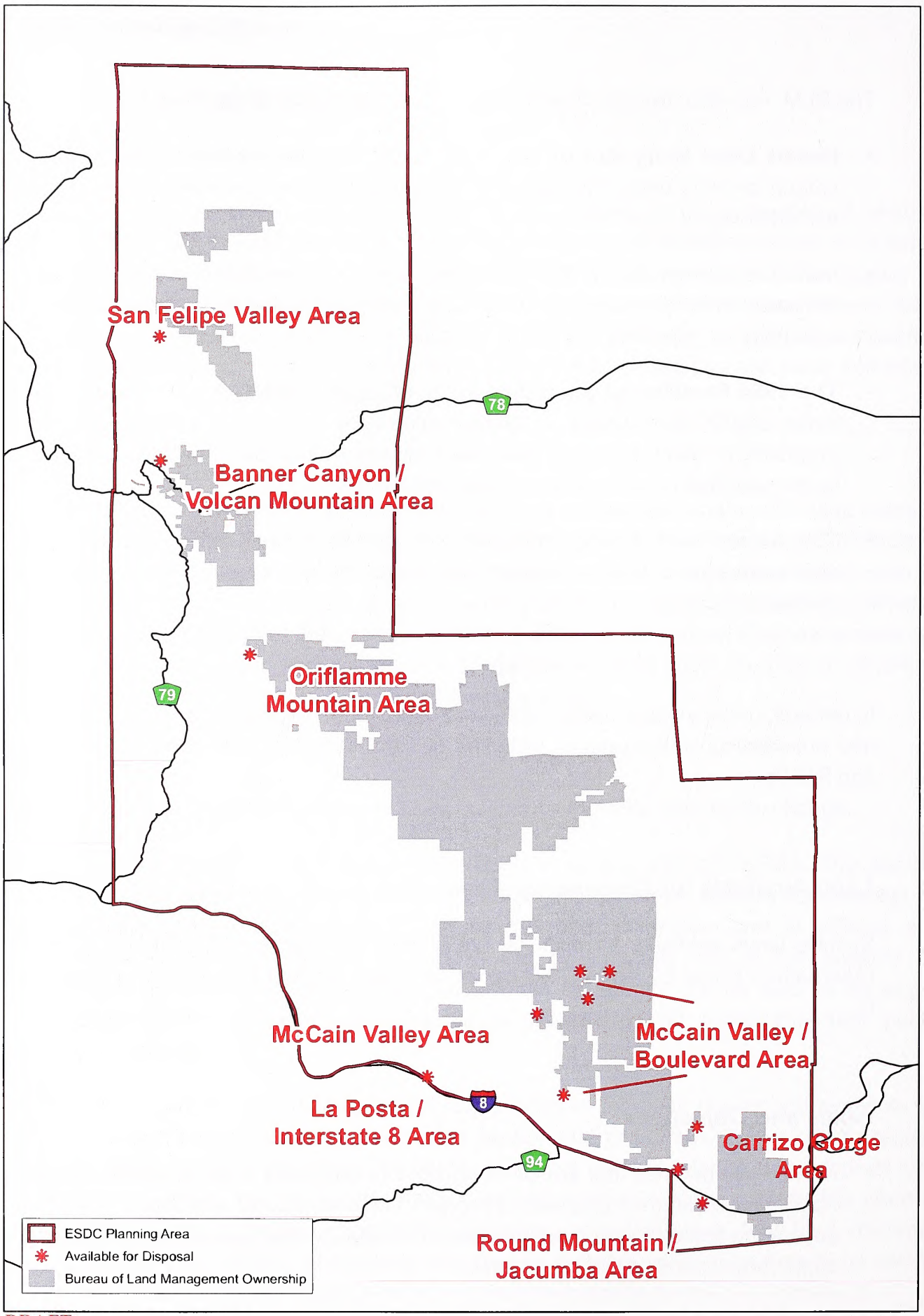

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FIGURE 2-18: Lands Available for Disposal Alternative A

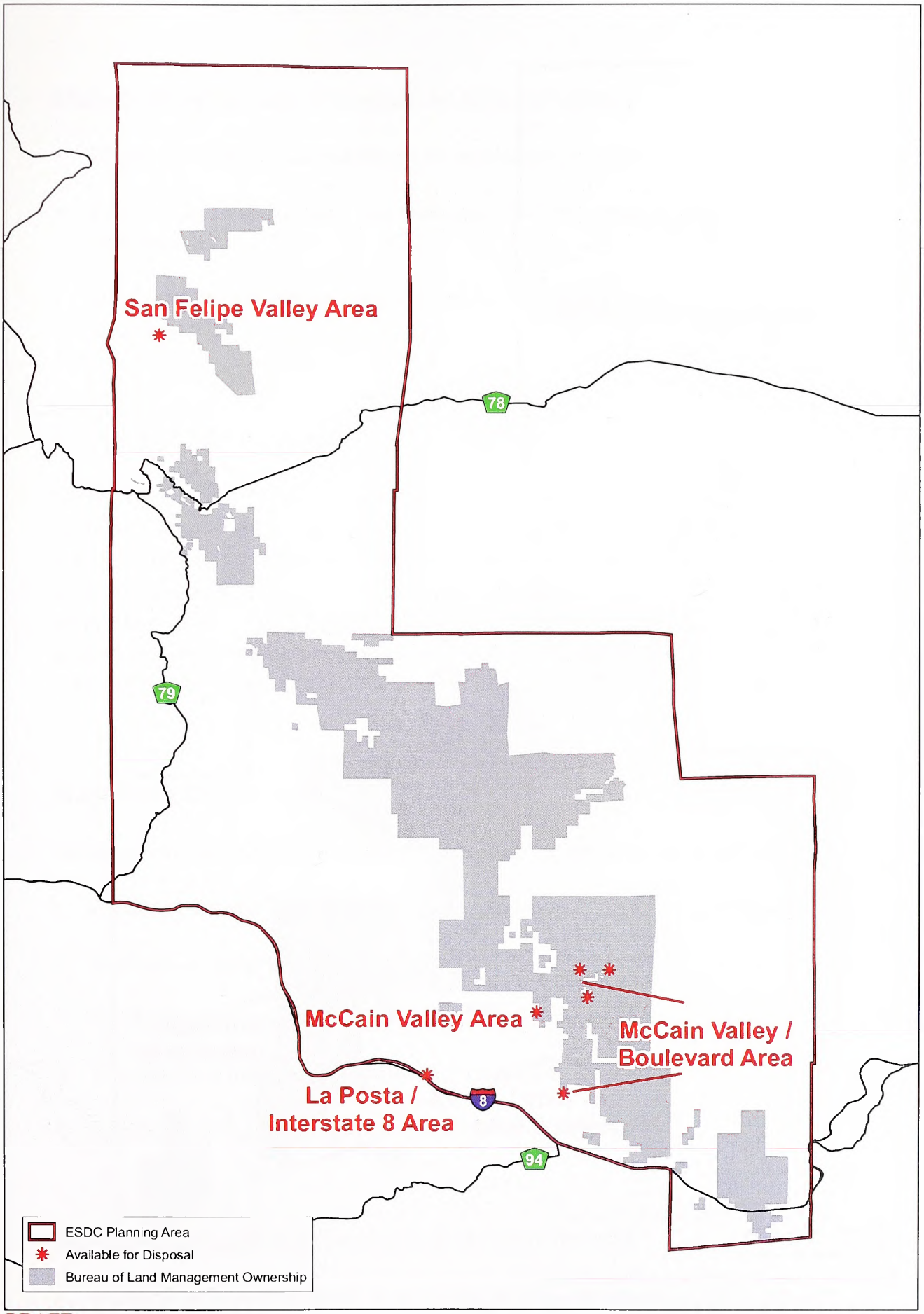

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FIGURE 2-19: Lands Available for Disposal Alternatives B and D

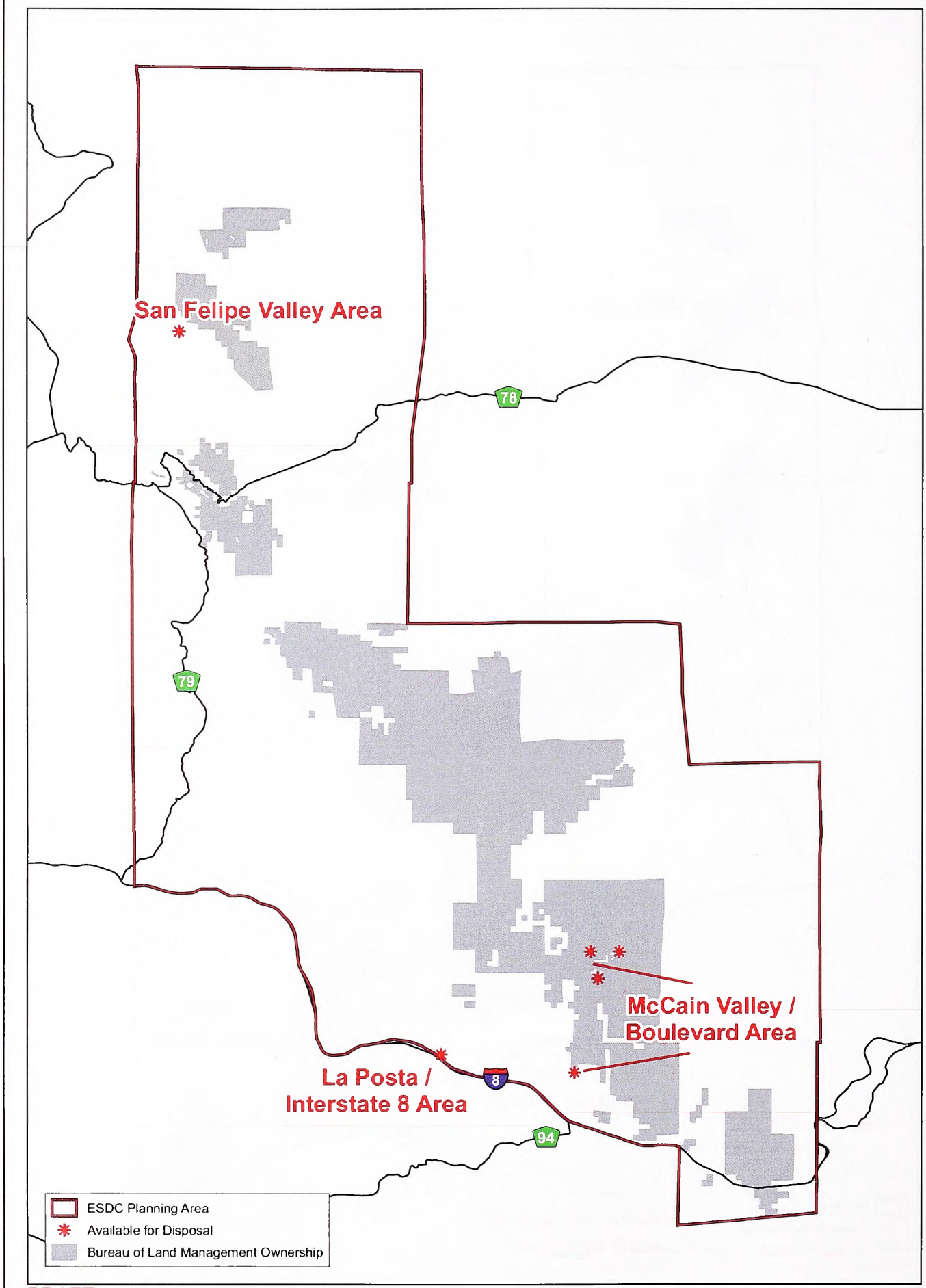

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FIGURE 2-20: Lands Available for Disposal Alternative E

Management Actions Common to All Alternatives

- Disposal of mineral estate would be evaluated on a case-by-case basis.
- When disposing by sale, the preferred method would be competitive or modified-competitive.
- Land tenure adjustment actions would be determined by resource management priorities.

2.3.18.1.2 Acquisition

Lands or interest in lands (including easements) may be acquired by BLM through purchase, exchange, donation, or eminent domain. Section 205 of FLPMA authorizes the Secretary of the Interior (delegated to BLM) to acquire non-federal lands or interests in lands pursuant to FLPMA by purchase, exchange, donation, or eminent domain. The acquisition of lands by exercising the power of eminent domain is restricted to securing access to public lands, "and then only if the lands so acquired are confined to as narrow a corridor as is necessary" (43 U.S.C. 1715).

Goals and Objectives

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 DRMP/EIS,
- Provide for a more manageable land ownership pattern, or
- Include significant natural or cultural resource values.

Management Actions Common to All Alternatives

- Manage all acquired lands in accordance with the approved land use plan decisions for surrounding or adjacent BLM-administered lands.
- Consolidate split-estate pursuant to Sections 205 and 206 of FLPMA.

- Any lands acquired by the BLM would include both the surface and subsurface (minerals) estate when possible and would be managed in accordance with the approved land use decisions for the surrounding area.

2.3.18.2 Land Use Authorizations

2.3.18.2.1 Leases/Permits/Easements

Section 302 of FLPMA states ..."regulate through easements, permits, leases, licenses, published rules, or other instruments as the Secretary deems appropriate, the use, occupancy, and development of the public lands"...

Leases, permits, or easements would be considered and issued under applicable laws and regulations pursuant to regulations found at 43 CFR 2900. Issuance of leases, permits, or easements is a discretionary action. These authorizations may include but are not limited to the following:

- Airport leases
- R&PP Act leases
- 2920 Leases, permits, or easements (film permits, apiary permits, etc.)

Public land is subject to application for community expansion needs under a wide variety of public land laws. Community expansion needs would continue to be handled on a case-by-case basis in accordance with the appropriate authority. BLM would utilize federal lands for community expansion needs such as airports, parks, hospitals, and community centers pursuant to applicable laws and regulations.

An easement is defined as the right to use another person's real estate for a specific purpose. The most common type of easement is the right to travel over another person's land, known as a ROW. In addition, property owners commonly grant easements for the placement of utility poles, utility trenches, water lines, or sewer lines. The owner of property that is subject to an easement is said to be "burdened" with the easement, because he or she is not allowed to interfere with its use.

Goals and Objectives

- Be responsive to public demand for leases, permits, and easements on case-by-case basis, consistent with management proscriptions in Table 2-21.

- Land would not be available for leasing for residential purposes.

Management Actions Common to All Alternatives

- Use R&PP leases to meet community needs.

2.3.18.2.2 Rights-of-Way

Under the authorities of FLPMA (1976) and the MLA of 1920, BLM grants ROWs to qualified individuals, businesses, and government entities for use of public lands.

Title V of FLPMA, as amended, states that BLM is authorized to grant, issue, or renew ROWs over, upon, under or through lands for various uses. The type of uses that would be authorized by ROW grants issued pursuant to FLPMA would include access roads, power lines, telephone lines, fiber-optic systems, communications facilities, water and sewer pipelines, etc.

BLM may also allow the use of the public lands or interests in lands through issuance of ROWs pursuant to MLA. Examples of uses that would be authorized by ROW grants issued pursuant to the MLA would include crude oil pipelines and oil and gas pipelines.

Goals and Objectives

- Be responsive to public demand for ROWs on a case-by-case basis, consistent with management proscriptions in Table 2-21.

Management Actions Common to All Alternatives

- 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.

2.3.18.2.3 Communication Sites

Communication sites are generally limited by the BLM to designated mountain peaks with existing facilities. Emphasis would be placed on consolidating single facility sites into more efficient communication facilities through site development plans.

Public lands may also be designated for use as a communications site. BLM communications sites accommodate the wireless systems referred to in the Telecommunications Act of 1996 as well as many other uses, including AM/FM broadcast facilities, commercial mobile radios, private mobile radios, and microwaves on designated communications sites located on mountaintops.

There are two existing communication sites in the Planning Area:

- Table Mountain, with two authorized site users; one government agency and one commercial user.
- Banner Grade, with one authorized user; a local government agency.

See Figure 3-15 for the locations of the existing communication sites.

Goals and Objectives

- When practicable, consolidate future proposed facilities within existing communication sites, consistent with management proscriptions in Table 2-21.

Management Actions Common to All Alternatives

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

- Applications for new communication sites outside the two existing sites would be considered on a case-by-case basis emphasizing co-location and subleasing of facilities, consistent with management proscriptions in Table 2-21.

2.3.18.2.4 Renewable Energy

This section addresses renewable energy development not discussed in the Minerals Section. The potential for renewable energy in the Planning Area is based on environmental, physical, and economic criteria, in conjunction with policy directives. BLM's general policy is to facilitate environmentally responsible commercial development of solar energy projects on public lands and use solar energy systems on BLM facilities where feasible.

Regulations applicable to wind energy development on public lands in the Planning Area include FLPMA, 43 CFR 2800, and other applicable laws, regulations, and policies. As stated in EO 13212, the Energy Project Streamlining process requires expediting production, transportation, and conservation of energy.

BLM would strive to increase and diversify our nation's sources of both traditional and alternative energy resources, improve our energy transportation network, and ensure sound environmental management in accordance with the President's National Energy Policy (National Energy Policy Development Group 2001).

Regulations applicable to solar arrays on public lands in the Planning Area include FLPMA, 43 CFR 2800, IM WO-2005-006 Solar Energy Development Policy, or subsequent BLM policy for solar energy.

Goals and Objectives

- Provide for the production and distribution of renewable energy, consistent with management proscriptions in Table 2-21.

- Encourage the use of public lands for production of renewable energy compatible with management of sensitive resources (e.g., ACECs).

Management Actions Common to All Alternatives

- Process applications for commercial renewable energy facilities as ROWs on a case-by-case basis.

- Do not allow surface occupancy of renewable energy facilities in Special Designation areas.
- Do not locate solar or wind generating facilities in VRM Classes I and II.
- 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 land use plan.

2.3.18.3 Withdrawals

A withdrawal removes an area of federal land from settlement, sale, location, or entry under some or all of the general land laws, for the purpose of limiting activities under those 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 jurisdiction over an area of federal land from one department, bureau, or agency to another.

2.3.18.3.1 Land Withdrawn Current and Proposed

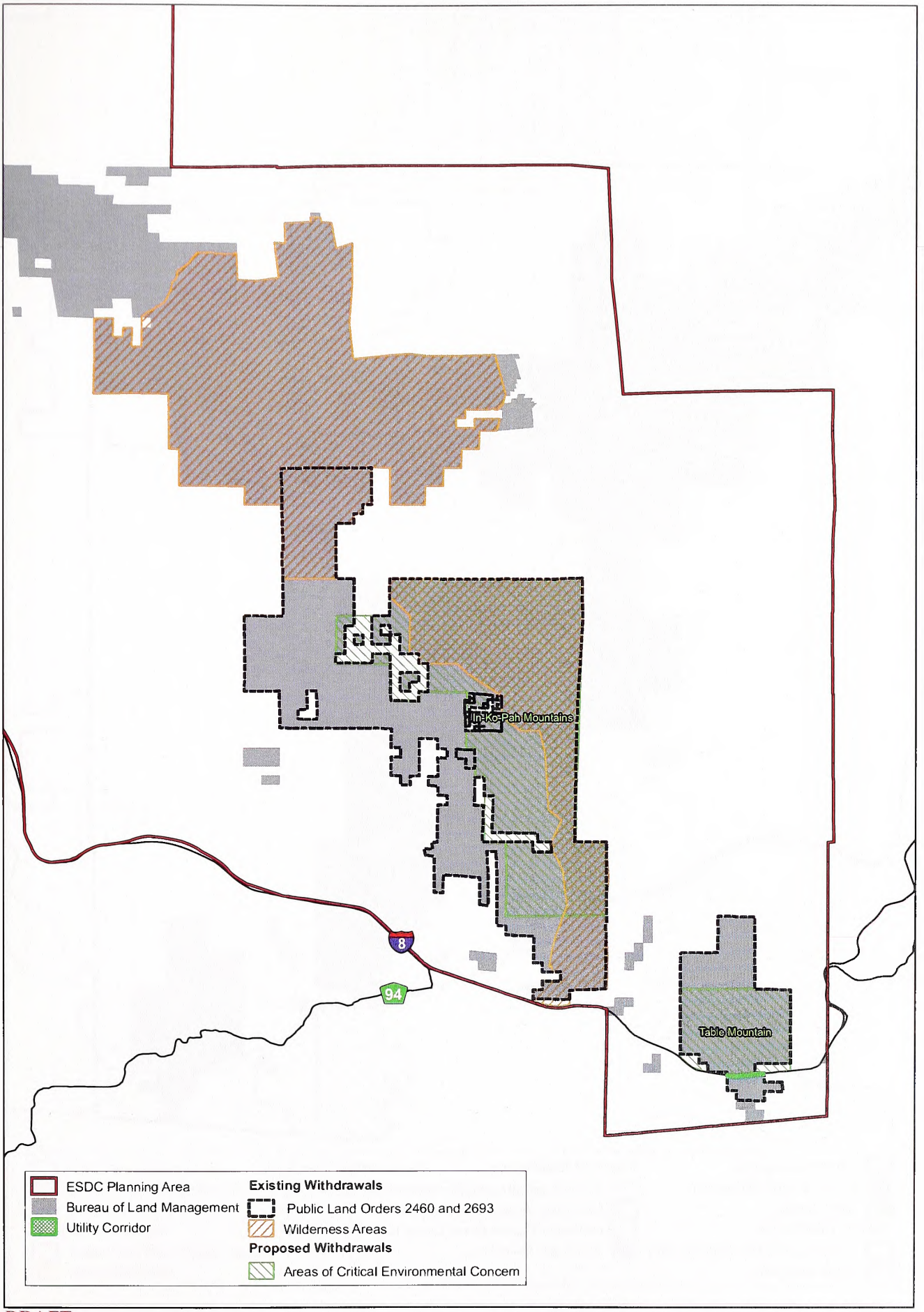
BLM-administered lands currently withdrawn and additional lands BLM would propose to withdraw are shown on Figures 2-21, 2-22, and 2-23 for Alternatives A, C, and E. Alternatives B and D do not propose any additional withdrawals.

2.3.18.3.2 Goals and Objectives

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

2.3.18.3.3 Management Actions

- 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.
- Propose withdrawal for the Table Mountain ACEC and that portion of the In-Ko-Pah ACEC that is outside of designated Wilderness Areas (see Table 2-21 for alternatives including proposed withdrawals).



DRAFT

EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

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Miles
3 0 3 6
Kilometers

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U.S. DEPARTMENT OF THE INTERIOR
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El Centro Field Office
February 2007

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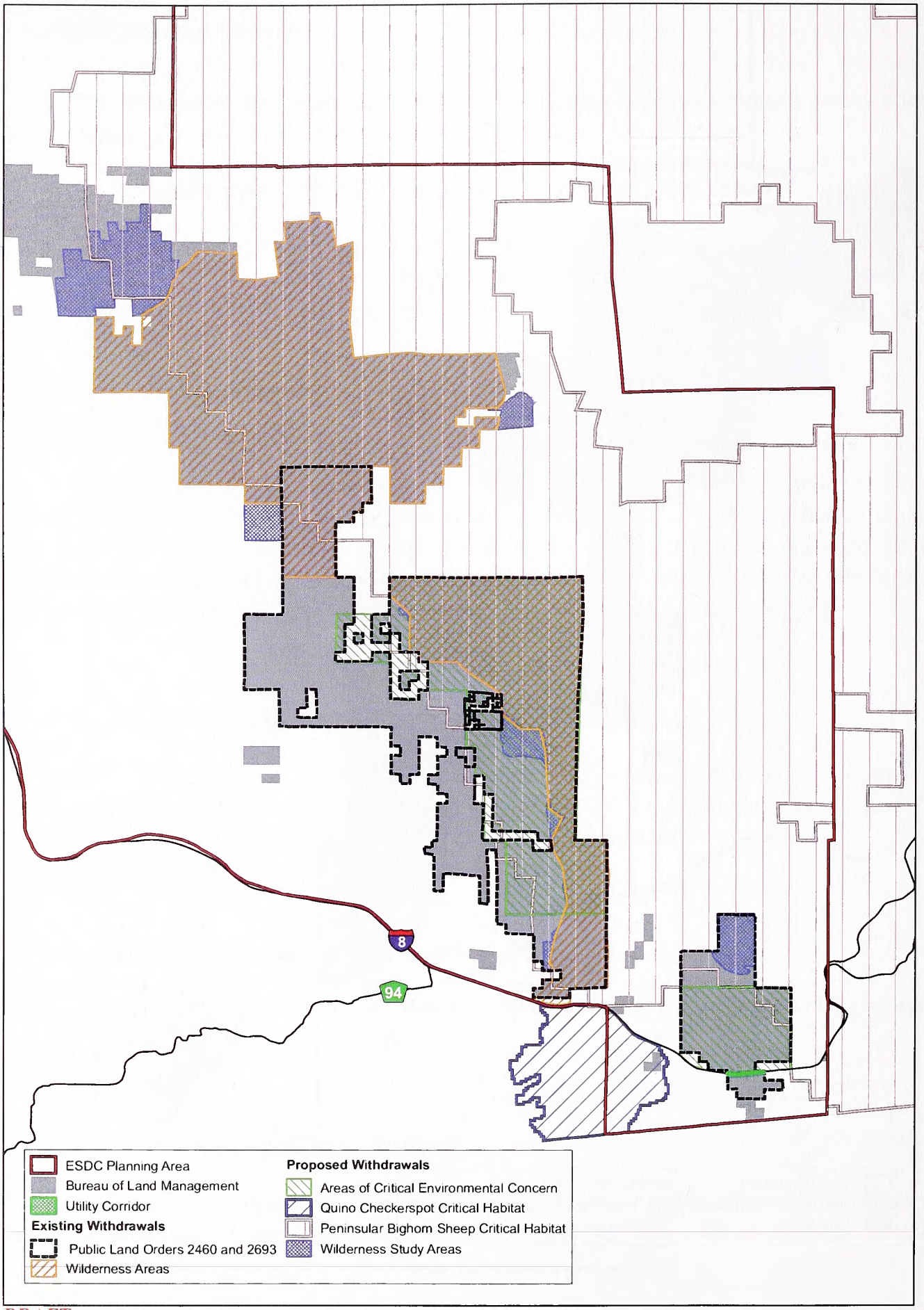
FIGURE 2-21: Existing and Proposed Withdrawals Alternative A



DRAFT

EL CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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Miles
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U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
February 2007

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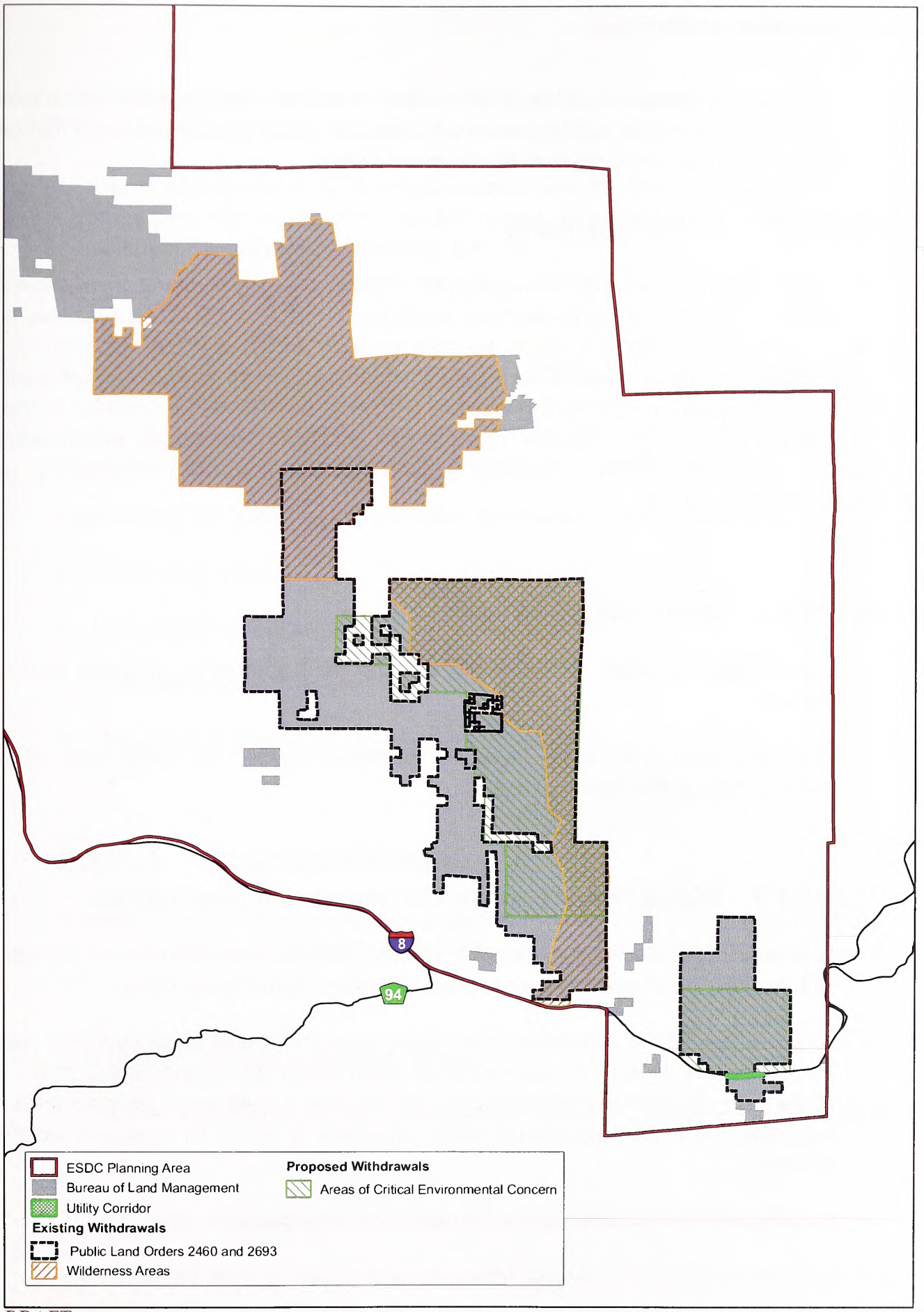
FIGURE 2-22: Existing and Proposed Withdrawals
Alternative C



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EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

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FIGURE 2-23: Existing and Proposed Withdrawals Alternative E

- Continue to review existing withdrawals, including 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.

2.3.18.4 Utility Corridors

In order to minimize adverse environmental impacts and the proliferation of separate ROWs, the utilization of ROW corridors would be required to the extent practical, and each ROW would reserve to BLM the right to grant additional ROWs or permits for compatible uses on or adjacent to ROWs granted pursuant to FLPMA. In designating ROW corridors and in determining whether to require that ROWs be confined to them, BLM would take into consideration national and state land use policies, environmental quality, economic efficiency, national security, safety, and good engineering and technological practices.

2.3.18.4.2 Goals and Objectives

- Consolidation of major ROWs within the approved corridor to minimize resource impacts.
- The designated corridor would be the preferred location for major utility ROWs passing through the planning area.

2.3.18.4.3 Management Actions Common to All Alternatives

- BLM is planning to continue one utility corridor common to all alternatives, consistent with the Western Regional Corridor Study (Western Utility Group 1993).
- All new utility ROWs, consisting of the following types, would 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.
- Avoid Special Designation areas and environmentally sensitive areas.

2.3.18.4.4 Management Actions by Alternative

- Under Alternative A (No Action) there is one existing utility corridor south of Table

Mountain near Interstate 8 that is 1.5 miles long and approximately 2 miles wide, encompassing 1,920 miles within the Planning Area.

- Under Alternatives B, C, D, and E, a utility corridor would be designated that is 1.5 miles long with a width of 1 mile (960 acres) whose northern boundary would be the southern boundary of the Interstate 8 ROW.

2.3.19 Public Health and Safety

According to applicable federal and state laws and regulations, BLM would identify areas or hazards which have potential impact to public health and safety.

The following are public health and safety concerns in the Planning Area:

- Abandoned mines
- Unexploded ordnance
- International border issues
- Hazardous materials

2.3.19.1 Abandoned Mines

A primary public safety concern with regard to abandoned mines is the danger of a person being injured or killed by falling into or collapse of an open shaft, adit, or pit.

2.3.19.1.1 Goals and Objectives

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

2.3.19.1.2 Management Actions Common to All Alternatives

- Implement fencing, gating, signage, and/or closure of abandoned mine openings.
- Consider using abandoned mines for wildlife habitat.

2.3.19.2 Unexploded Ordnance

Unexploded ordnance (UXO) consists of military materials used in tests and on training ranges. UXO may include but is not limited to bombs, mortars, artillery shells, rockets, submunitions and landmines.

Two sources of risk exist at UXO sites: (1) risks from explosions and (2) risks from munition constituents (materials originating from UXO or other munitions, including the chemical constituents that result from their breakdown) that have leached into soil and water. Although there are no known occurrences within the Planning Area, there is a low potential for UXOs on public lands to be present as a result of military maneuvers.

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

Given the amount of aircraft used on the various military facilities in the vicinity of the Planning Area, it is possible that a military aircraft could crash and be a source of UXO.

2.3.19.2.1 Goals and Objectives

- Promote pubic and/or environmental safety from UXO.

2.3.19.2.2 Management Actions Common to All Alternatives

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

2.3.19.3 International Border Issues

BLM manages approximately 0.5 miles of public land along the international border within the Planning Area. Along the international border there are incidences of undocumented immigrant traffic and other occasional criminal activity.

2.3.19.3.1 Goals and Objectives

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

2.3.19.4 Hazardous Materials

Hazardous materials consist of chemicals and materials that have the potential to adversely impact human health and the environment. In the Planning Area, hazardous materials could include but are not limited to petroleum products, industrial chemicals, acids, heavy metals, lead-based paint, and asbestos-containing materials. Potential sources of hazardous materials include abandoned mines, mining mill sites, landfills, illegal dumping, leaking fuel tanks, illegal drug manufacturing sites, abandoned buildings, and other sites.

Illegal dumping has a potential to cause environmental impacts to BLM-administered land within the Planning Area. Chemical leachate from these sites has the potential to contaminate soil and reach surface and/or ground water.

Laws governing the management of these materials include Comprehensive Environmental Recovery, Compensation and Liability Act (CERCLA), the Resource Conservation Recovery Act (RCRA), other federal laws and regulations, and state and local regulations. Mining and milling wastes are managed under CERCLA as potentially hazardous materials or hazardous waste.

2.3.19.4.1 Goals and Objectives

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

2.3.19.4.2 Management Actions Common to All Alternatives

- Perform public notification of potential health risks by means of notices, signage, and other forms of communication.
- Remediate areas contaminated with hazardous materials in accordance with applicable laws and regulations.

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2.4 Comparison of Impacts by Alternative

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Air Quality	No air quality impacts.	No air quality impacts.	No air quality impacts.	No air quality impacts.	No air quality impacts.
Soil Resources	Potential for erosion and compaction along routes of travel and continued surface disturbance in the existing campgrounds. Erosion measures would be incorporated into projects on a case-by-case basis. Erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover.	Potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. Erosion measures would be incorporated into projects on a case-by-case basis. Erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative B, construction of new wildlife waters would be authorized on a case-by-case basis; the lands available for livestock grazing would be reduced; and the restoration of closed routes of travel would occur.	Potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. Erosion measures would be incorporated into projects on a case-by-case basis. Erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative C, there would be no construction of new wildlife waters; all BLM-administered lands would be unavailable for livestock grazing; and the restoration of non-motorized routes of travel would occur.	Potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. Erosion measures would be incorporated into projects on a case-by-case basis. Erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative D, construction of new wildlife waters would be authorized on a case-by-case basis; and the restoration of non-motorized routes of travel would occur.	Potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. Erosion measures would be incorporated into projects on a case-by-case basis. Erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover. Under Alternative E, all BLM-administered lands would be unavailable for livestock grazing; construction of new wildlife waters would be authorized on a case-by-case basis; and the restoration of non-motorized routes of travel would occur.
Water Resources	Potential effects include reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water.	Potential effects include reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water.	Potential effects include reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water.	Potential effects include reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water.	Potential effects include reducing disturbance to riparian waters; increasing sedimentation of surface waters; decreasing demands on surface and ground water, and conversely increasing the use of surface and ground water.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Water Resources (cont.)	Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater.	Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative B, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores; the lands available for livestock grazing would be reduced, resulting in a reduction in the amount of water used.	Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative C, all BLM-administered lands would be unavailable for livestock grazing, which would reduce the amount of water used.	Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative D, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores.	Quality of groundwater could be affected by historic mineral and associated processing activities and illegal dumping or accidental spills. Restoration could result in the reduction of any input of biological contaminants into the groundwater. Under Alternative E, construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores; all BLM-administered lands would be unavailable for livestock grazing, which would reduce the amount of water used.
Vegetative Resources	Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.	Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.	Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.	Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.	Some BLM LUP decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to vegetation.
Wildlife Resources	Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.	Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.	Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.	Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.	Some BLM LUP decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be negative by authorizing discretionary activities that could result in detrimental effects to habitat.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Special Status Species	Allow current grazing practices to continue and mineral entry within critical habitat found on BLM-administered lands within the Planning Area. This could result in effects to special status species.	Eliminate grazing from all critical habitat which would result in no effect to special status species. Mineral entry would be allowed within critical habitat which could result in effects to some special status species. The parcel supporting quino checkerspot butterfly critical habitat is land-locked by state parks and private lands and has limited access and thus mineral entry is unlikely to affect this species.	Eliminate grazing and mineral entry from critical habitat within the BLM-administered lands within the Planning Area. This would result in no effect to special status species	Eliminate grazing from all critical habitat which would result in no effect to special status species. Mineral entry would be allowed within critical habitat which could result in effects to some special status species. The parcel supporting quino checkerspot butterfly critical habitat is land-locked by state parks and private lands and has limited access and thus mineral entry is unlikely to affect this species.	Eliminate grazing from all critical habitat which would result in no effect to special status species. Mineral entry would be allowed within critical habitat which could result in effects to some special status species. The parcel supporting Quino Checkerspot Butterfly Critical Habitat is land-locked by state parks and private lands and has limited access and thus mineral entry is unlikely to affect this species.
Wildland Fire Ecology	Removal of forage by livestock can result in fewer fires of lower intensity or lower rates of spread; less frequent wildfires, but an increased likelihood of a catastrophic fire. Lands and realty-related facilities would: result in ground disturbance and increased opportunities for accidental human-caused ignition; more structures to protect; more hazards and restrictions to prescribed burning. Recreation uses and international border issues could also present a risk of accidental human-caused ignition. Limitations to fire suppression tactics and/or less intense suppression methods occur for WAs, WSAs, the Pacific Crest NST, ACECs. Vegetation resource management, vegetation treatments, and prescribed fire would provide beneficial impacts.	Removal of forage by livestock can result in fewer fires of lower intensity or lower rates of spread; less frequent wildfires, but an increased likelihood of a catastrophic fire. Lands and realty-related facilities would: result in ground disturbance and increased opportunities for accidental human-caused ignition; more structures to protect; more hazards and restrictions to prescribed burning. Recreation uses and international border issues could also present a risk of accidental human-caused ignition. Limitations to fire suppression tactics and/or less intense suppression methods occur for WAs, WSAs, the Pacific Crest NST, ACECs. Vegetation resource management, vegetation treatments, and prescribed fire would provide beneficial impacts.	Lands and realty-related facilities would: result in ground disturbance and increased opportunities for accidental human-caused ignition; more structures to protect; more hazards and restrictions to prescribed burning. Recreation uses and international border issues could also present a risk of accidental human-caused ignition. Limitations to fire suppression tactics and/or less intense suppression methods occur for WAs, WSAs, the Pacific Crest NST, ACECs. Vegetation resource management, vegetation treatments, and prescribed fire would provide beneficial impacts.	Removal of forage by livestock can result in fewer fires of lower intensity or lower rates of spread; less frequent wildfires, but an increased likelihood of a catastrophic fire. Lands and realty-related facilities would: result in ground disturbance and increased opportunities for accidental human-caused ignition; more structures to protect; more hazards and restrictions to prescribed burning. Recreation uses and international border issues could also present a risk of accidental human-caused ignition. Limitations to fire suppression tactics and/or less intense suppression methods occur for WAs, WSAs, the Pacific Crest NST, ACECs. Vegetation resource management, vegetation treatments, and prescribed fire would provide beneficial impacts.	Lands and realty-related facilities would: result in ground disturbance and increased opportunities for accidental human-caused ignition; more structures to protect; more hazards and restrictions to prescribed burning. Recreation uses and international border issues could also present a risk of accidental human-caused ignition. Limitations to fire suppression tactics and/or less intense suppression methods occur for WAs, WSAs, the Pacific Crest NST, ACECs. Vegetation resource management, vegetation treatments, and prescribed fire would provide beneficial impacts.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Cultural Resources	Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling. Land disposal could have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any cultural resources that exist within the acquired property.	Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling. Land disposal could have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any cultural resources that exist within the acquired property.	Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of surface artifacts and features. Land disposal could have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any cultural resources that exist within the acquired property.	Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects could concentrate livestock and wildlife in areas increasing the potential for trampling. Land acquisitions would have a beneficial effect on any cultural resources that exist within the acquired property.	Discretionary and construction actions which involve ground-disturbing actions could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of surface artifacts and features. Land disposal could have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any cultural resources that exist within the acquired property.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Paleontological Resources	Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits. Land disposal could have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.	Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits. Land disposal could have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.	Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of exposed deposits. Land disposal could have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.	Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits. Land acquisitions would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.	Discretionary and construction actions which would involve excavation or ground disturbance could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Wildlife improvement projects could concentrate wildlife in areas increasing the potential for trampling of exposed deposits. Land disposal could have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.
Visual Resources	Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.	Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.	Alternatives A and C are identical in their designation of lands to Class II and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provide the highest protection for scenic quality values, followed closely by Alternative A.	Alternative D identifies many specific land areas as Class III lands and two as Class IV lands. Therefore this alternative would provide the greatest allowance for visual contrast in any future proposals for cultural modifications.	Alternative E would have approximately 10,000 fewer acres of Class II lands than Alternatives A, B, and C (this difference varies by alternative), because it designates the Lark Canyon and Cottonwood Campgrounds and the Airport Mesa area as Class III rather than Class II due to considerations for allowable visual contrast of cultural modifications. In addition, Alternative E identifies McCain Valley West as Class IV to accommodate renewable energy development.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Special Designations	Potential impacts to WAs: from use of motor vehicles and heavy motorized equipment; values can be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities; short-term on naturalness and solitude related to vehicle use and access to private lands in the area; construction and maintenance of wildlife and range improvement facilities could degrade WA values; livestock and associated structures and ranchers would have an impact on naturalness. Approximately 26,497 acres of WA are being grazed under Alternative A.	Potential impacts to WAs: from use of motor vehicles and heavy motorized equipment; values can be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities; short-term on naturalness and solitude related to vehicle use and access to private lands in the area; construction and maintenance of wildlife and range improvement facilities could degrade WA values; livestock and associated structures and ranchers would have an impact on naturalness. Under Alternative B, grazing would be eliminated from critical habitat which would reduce the extent of grazing and enhance the wilderness characteristics of the Sawtooth WA. However, any new structures, such as fences, necessary to implement this would reduce the wilderness characteristics.	Potential impacts to WAs: from use of motor vehicles and heavy motorized equipment; values can be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities; short-term on naturalness and solitude related to vehicle use and access to private lands in the area; construction and maintenance of wildlife and range improvement facilities could degrade WA values. Under Alternative C, grazing would be eliminated from wilderness areas, thereby reducing impacts to the wilderness.	Potential impacts to WAs: from use of motor vehicles and heavy motorized equipment; values can be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities; short-term on naturalness and solitude related to vehicle use and access to private lands in the area; construction and maintenance of wildlife and range improvement facilities could degrade WA values; livestock and associated structures and ranchers would have an impact on naturalness. Under Alternative D, grazing would be eliminated from critical habitat which would reduce the extent of grazing and enhance the wilderness characteristics of the Sawtooth WA. However, any new structures, such as fences, necessary to implement this would reduce the wilderness characteristics.	Potential impacts to WAs: from use of motor vehicles and heavy motorized equipment; values can be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities; short-term on naturalness and solitude related to vehicle use and access to private lands in the area; construction and maintenance of wildlife and range improvement facilities could degrade WA values. Under Alternative E, grazing would be eliminated from wilderness areas, thereby reducing impacts to the wilderness.
	Potential impacts to WSAs: from construction and maintenance of range and wildlife habitat improvement projects; values could be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings.	Potential impacts to WSAs: from construction and maintenance of range and wildlife habitat improvement projects; values could be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings.	Potential impacts to WSAs: from construction and maintenance of range and wildlife habitat improvement projects; values could be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings.	Potential impacts to WSAs: from construction and maintenance of range and wildlife habitat improvement projects; values could be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings.	Potential impacts to WSAs: from construction and maintenance of range and wildlife habitat improvement projects; values could be impacted by vegetation treatments and wildfire suppression activities and management responses; short-term from construction and maintenance activities, hunting activities or discharge of firearms, OHV use in and adjacent to WSAs and access to private in-holdings.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Special Designations (continued)	Potential impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.	Potential impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.	Potential impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.	Potential impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.	Potential impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land use allocations, land tenure, construction-related activities, mineral development and leasing, recreation, OHV allocation of open areas, routes of travel, and military training. Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.
Public Health and Safety	Potential public health and safety issues in the planning area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.	Potential public health and safety issues in the planning area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.	Potential public health and safety issues in the planning area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.	Potential public health and safety issues in the planning area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.	Potential public health and safety issues in the planning area include abandoned mines, unexploded ordnance, international border issues, and hazardous materials. Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death.
Livestock Grazing Program	Currently allowed livestock grazing would continue. This alternative would allow for the authorization and maintenance of range improvement projects.	The lands available for livestock grazing would be reduced. Allotments would be adjusted to exclude grazing from the OHV use area in Lark Canyon and Table Mountain ACEC. This alternative would allow for the authorization and maintenance of range improvement projects.	All BLM-administered lands would be unavailable for livestock grazing.	Currently allowed livestock grazing would continue. This alternative would allow for the authorization and maintenance of range improvement projects.	All BLM-administered lands would be unavailable for livestock grazing.
Lands and Realty Program (Including Renewable Energy)	This alternative has the most lands identified as available for disposal.	ROWs, Renewable Energy ROWs, Communication Sites, and Site Permits would be considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas.	ROWs, Renewable Energy ROWs, Communication Sites, and Site Permits would be considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas. Under this alternative no lands are available for disposal.	ROWs, Renewable Energy ROWs, Communication Sites, and Site Permits would be considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas.	ROWs, Renewable Energy ROWs, Communication Sites, and Site Permits would be considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas.

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Minerals Program	WAs are withdrawn from the operation of the mining and mineral leasing laws. Issuance of mineral materials contracts in special designations is restricted.	WAs are withdrawn from the operation of the mining and mineral leasing laws. Does not allow authorization of mineral material contracts or permits, or geothermal leasing. Issuance of mineral materials contracts in special designations is restricted. Mineral material disposals from public land would not be authorized in critical habitat in ACECs.	WAs are withdrawn from the operation of the mining and mineral leasing laws. Does not allow authorization of mineral material contracts or permits, or geothermal leasing. Issuance of mineral materials contracts in special designations is restricted. Mineral material disposals from public land would not be authorized in critical habitat outside ACECs. WSAs, ACECs, and critical habitat would be withdrawn from mineral entry.	WAs are withdrawn from the operation of the mining and mineral leasing laws.	WAs are withdrawn from the operation of the mining and mineral leasing laws. Does not allow authorization of mineral material contracts or permits, or geothermal leasing. Issuance of mineral materials contracts in special designations is restricted. Mineral material disposals from public land would not be authorized in critical habitat outside ACECs. ACECs would be withdrawn from mineral entry.
Recreation Program	Although Alternative A does not provide for any SRMAs, it creates 38,690 acres in accordance with the McCain Valley RAMP.	103,303 acres of Special Recreation Management Areas (SRMAs) would be created, which allows for more recreation management in these areas. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ).	103,303 acres of Special Recreation Management Areas (SRMAs) would be created, which allows for more recreation management in these areas. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ) This alternative provides the greatest amount of OHV area designated as closed.	103,303 acres of Special Recreation Management Areas (SRMAs) would be created, which allows for more recreation management in these areas. Would improve staging areas outside WAs to wilderness trailheads. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ).	103,303 acres of Special Recreation Management Areas (SRMAs) would be created, which allows for more recreation management in these areas. Would improve staging areas outside WAs to wilderness trailheads. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ).

TABLE 2-22
SUMMARY OF ENVIRONMENTAL EFFECTS BY ALTERNATIVES
(CONT.)

Topic	Alternative A (No-Action)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Social and Economic	If and when a wind energy development project is proposed, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would address the potential impacts (including economic and social impacts).	If and when a wind energy development project is proposed, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would address the potential impacts (including economic and social impacts).	If and when a wind energy development project is proposed, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would address the potential impacts (including economic and social impacts).	If and when a wind energy development project is proposed, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would address the potential impacts (including economic and social impacts).	If and when a wind energy development project is proposed, the BLM and operator(s) will need to develop project-specific Plans of Development (PODs), which would address the potential impacts (including economic and social impacts).
Environmental Justice	The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts.	The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts.	The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts.	The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts.	The socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts.

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2.5 Implementation and Monitoring

2.5.1 Implementation

Many land use plan decisions are implemented or become effective upon approval of the RMP. Examples of decisions that become effective upon approval of the RMP 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.

2.5.2 Requirements for Further Environmental Analysis

The RMP/EIS 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 do not require any further environmental analysis or documentation until modified through a 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/EIS 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.

2.5.3 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 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.

2.5.4 Monitoring and Evaluation

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 data base 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.

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.

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CHAPTER 3.0
Affected Environment

3.1 Introduction

The Planning Area spans a portion of the eastern escarpment of Southern California's Peninsular Ranges. It is a land of remarkable diversity, encompassing a range of environments from pine forests and flowing streams to palm oases overlooking shimmering desert basins. As early Spanish, Mexican, and American pioneers and settlers traversed the region on their way to developing coastal population centers, they encountered small bands of Kumeyaay and Mountain Cahuilla Indians. Except for cattlemen who established isolated ranches in order to graze their stock in the grassy valleys and shrub-covered hills, few of the newcomers settled here. Today, much of the region remains wild and uncrowded in spite of the steady growth of the urban society only a short distance to the west.

Scattered in a north–south band along the mountain front are 103,303 acres of public land under the administration of the BLM. 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. The Riverside County and Mexican border mark the northern and southern boundaries of the unit (see Figure 1-1).

Chapter 3 describes the environmental components of BLM-administered lands in the Planning Area that would potentially be affected by implementation of the DRMP. This chapter is organized by resources, resource uses, special designations, public health and safety, social and economic considerations, and environmental justice conditions. Resources include air, soil, water, vegetative communities, wildlife, special status species, wildland fire ecology and management, and cultural, paleontological, and visual resources. Resource uses include livestock grazing management, minerals, recreation management, transportation and public access, and lands and realty. Special designations include ACECs, National Scenic Trails, WAs, and WSAs.

Information sources and analysis data utilized to write this chapter were obtained from the 1981 Management Framework Plan, Plan Amendments, and various other management planning documents from BLM. Information and data were also collected from many other related planning documents and research publications prepared by various federal and state agencies as well as from private publications pertaining to the resources found within the Planning Area, key resource conditions, and resource uses. The purpose of this chapter is to provide a description of key resources found within the existing environment of the Planning Area, which will be used as a baseline to evaluate and assess the impact of the five resource management alternatives. Descriptions and analyses of the impacts themselves are presented in Chapter 4, Environmental Consequences.

3.2 Air Resources

3.2.1 Climate and Weather

The Coast/Peninsular Ranges extend from north to southeast through the Planning Area. Along the western side of the Peninsular Ranges the climate is dominated by the Pacific Ocean. Warm winters, cool summers, small daily and seasonal temperature ranges, and a high relative humidity are characteristic of this area. With increasing distance from the ocean the maritime influence decreases. The mountainous areas, which are well protected from the ocean, experience warmer summers and winters cold enough to allow snowfall. In the areas east of the mountains, a continental desert regime prevails.

Summer is a dry period over most of the state. With the northward migration of the semi-permanent Pacific high pressure center (Pacific high) during summer, most storm tracks are deflected far to the north. California seldom receives precipitation from Pacific storms during this time of year. Occasionally, however, moist air drifts northward during the warm months from the Gulf of Mexico or the Gulf of California. At such times, scattered, locally heavy showers occur, mostly over the desert and mountain portions of the state.

A dominating factor in the weather of California is the semi-permanent high pressure area of the northern Pacific Ocean. This pressure center moves northward in summer, holding storm tracks well to the north, and as a result California receives little or no precipitation from this source during that period. In winter, the Pacific high decreases in intensity and retreats southward permitting storm centers to swing into and across California. These storms bring widespread, moderate precipitation to California at low elevations and snow at high elevations. Some of them travel far enough to the south to spread moisture beyond the Mexican border. When changes in the circulation pattern permit storm centers to approach the California coast from a southwesterly direction, copious amounts of moisture are carried by the northeastward streaming air. This results in heavy rains and often produces widespread flooding during the winter months.

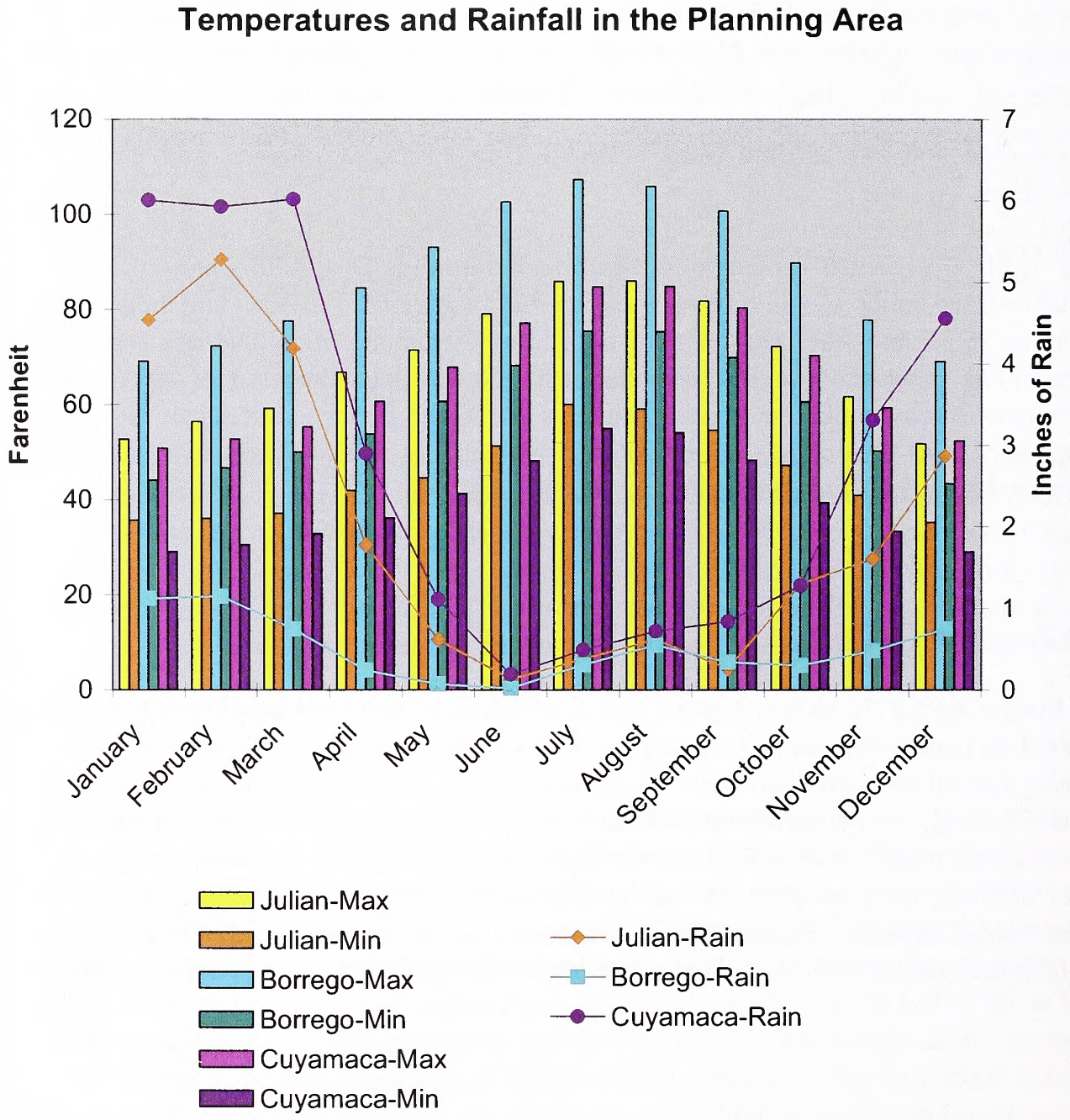
During the winter under certain weather conditions, "Santa Ana Winds" occur where winds flow out of the Great Basin into the Central Valley, the Southeastern Desert Basin, and the South Coast. The air is typically very dry. The winds are strong and gusty, sometimes exceeding 100 miles per hour (mph), particularly near the mouth of canyons oriented along the direction of airflow. It is a situation that occasionally leads to serious fire suppression problems and often results in the temporary closing of sections of main highways to campers, trucks, and light cars (Western Regional Climate Center 2006).

Temperature and rainfall data were obtained from Julian, Cuyamaca, and Borrego Desert Park, and are shown in Figure 3-1. Temperature data from Julian show average annual monthly temperatures ranging between maximums of 52° to 86° and minimums of 35° to 60° Fahrenheit. Temperature data from the Borrego Desert Park show average annual monthly temperatures ranging between maximums of 69° to 107° and minimums of 44° to 75° Fahrenheit. Temperature data from Cuyamaca show average monthly temperatures ranging between maximums of 51° to 85° and minimums of 29° to 55° Fahrenheit. The average annual precipitation is 24, 6, and 33 inches at Julian, Borrego Desert Park, and Cuyamaca, respectively. The majority of rain falls from November to March (Western Regional Climate Center 2006).

3.2.2 Air Quality

The Environmental Protection Agency has established primary and secondary National Ambient Air Quality Standards (NAAQS) for seven pollutants (carbon monoxide, nitrogen dioxide, particulate matter less than 10 microns [PM_{10}], particulate matter less than 2.5 microns [$PM_{2.5}$], ozone, sulfur dioxide, and lead). Primary standards are adopted to protect public health, and secondary standards are adopted to protect public welfare. States are required to adopt ambient air quality standards which are at least as stringent as the federal NAAQS; however, the state standards may be more stringent. California has adopted standards more stringent than federal standards for some pollutants (Table 3-1).

Section 176 of the CAA requires any action on the part of a federal agency in a non-attainment area that does not meet one or more of the NAAQS for the criteria pollutants designated in the CAA to conform to the state's efforts to attain and maintain these standards. San Diego County is a basic non-attainment area for ozone (O_3) under federal standards and is classified as a serious non-attainment area under state standards. San Diego County is also a non-attainment area for $PM_{2.5}$ and PM_{10} under state standards. San Diego County is listed as unclassifiable/attainment for the federal PM_{10} and $PM_{2.5}$ standards.



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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FIGURE 3-1: Temperature and Rainfall Data in the Planning Area

TABLE 3-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	California Standards	Federal Standards	
	Concentration	Primary	Secondary
Ozone (O_3)	0.09 ppm (180 µg/m^3)	–	Same as Primary Standard
	0.070 ppm (137 µg/m^3)	0.08 ppm (157 µg/m^3)	
Respirable Particulate Matter (PM_{10})	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	20 µg/m^3	50 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	No Separate State Standard	35 µg/m^3	Same as Primary Standard
	12 µg/m^3	15 µg/m^3	
	Concentration	Primary	Secondary
Carbon Monoxide (CO)	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	6 ppm (7 mg/m^3)	–	–
Nitrogen Dioxide (NO_2)	–	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	0.25 ppm (470 µg/m^3)	–	
Sulfur Dioxide (SO_2)	–	0.030 ppm (80 µg/m^3)	–
	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	–
	–	–	0.5 ppm (1300 µg/m^3)
	0.25 ppm (655 µg/m^3)	–	–
Lead	1.5 µg/m^3	1.5 µg/m^3	Same as Primary Standard
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards	
Sulfates	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride	0.01 ppm (26 µg/m^3)	No Federal Standards	

ppm = parts per million
µg/m^3 = micrograms per cubic meter.

There are no air monitoring stations within the Planning Area. The nearest air monitoring station is the Alpine-Victoria Drive station approximately 10 miles west of the western Planning Area boundary.

On November 30, 1993, the EPA promulgated its rules for determining general conformity of federal actions with state air quality implementation plans, as required by Clean Air Act Section 176(c). To demonstrate conformity with a local State Implementation Plan (SIP), a project must clearly demonstrate that it does not

- cause or contribute to any new violation of any standard in the area;
- interfere with provisions in the applicable SIP for maintenance or attainment of air quality standards;
- increase the frequency or severity of any existing violation of any standard; or
- delay timely attainment of any standard, any interim emission reduction, or other milestones included in the SIP for air quality.

The Environmental Protection Agency (EPA) has developed specific procedures for conformity determinations for federal actions, which include preparing an assessment of emissions associated with the project based on the latest and most accurate emissions estimating techniques.

Activities in the Planning Area that generate air pollutants include motorized and non-motorized recreational use; vehicle travel; fires (including wildfire and prescribed burns); fire suppression with heavy equipment; construction and maintenance of facilities and roads (including by Border Patrol); mining activities; remedial earthwork and revegetation; helicopters monitoring transmission lines; and the Carrizo railroad.

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3.3 Soil Resources

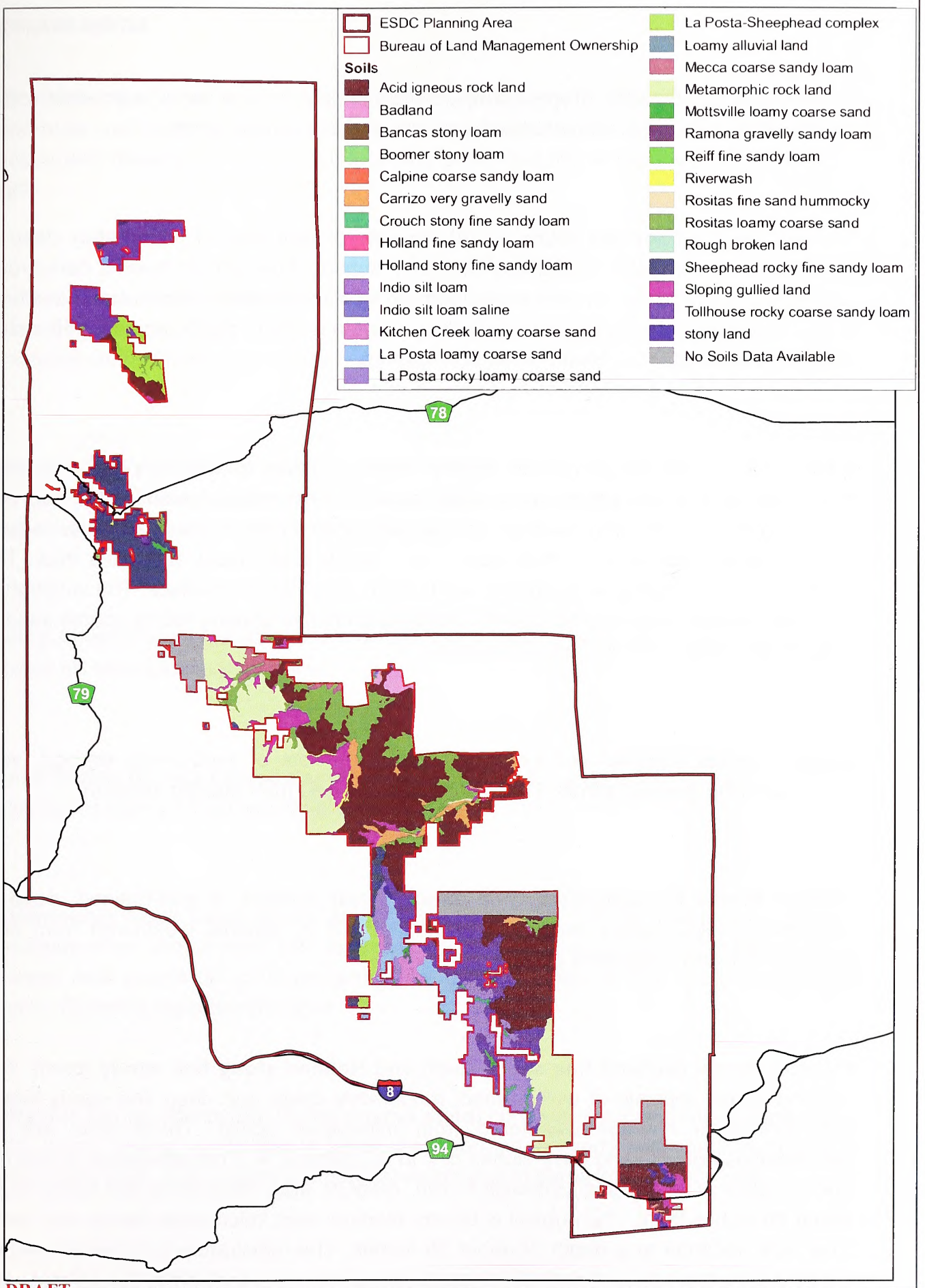
The Planning Area contains a wide variety of soil types, as might be expected in a zone which spans the transition from low desert to coastal mountains. This variety of types is the result of diversity in parent material, relief, climate, living organisms, and age of the soils. A discussion of the major soil groups in the region can be found in the grazing and wilderness EIS for the Planning Area.

The majority of the Planning Area falls in a moderate erosion class. Approximately 40 percent of the land consists of slope of 50 percent or greater. Despite the high incidence of steep slopes, soil loss due to water erosion is not of major significance because of low annual surface runoff and the high percent of ground cover, which averages 48 percent throughout the Planning Area. This percentage of ground cover is much higher than that of the adjacent desert, because the rain pattern in the surrounding desert is scarce and sporadic. This limits the presence and growth of perennials and limits coverage by annual plant species to years when rain is plentiful. In comparison to this adjacent land, a ground cover of 48 percent by chaparral vegetation communities in the Planning Area is considered high. Most erosion problems are the result of human disturbances associated with use of the land for grazing and recreation.

Twenty-four soil series composed of thirty different soil types are found on BLM-administered lands in the Planning Area (USDA 1973). Figure 3-2 shows the soil types on BLM-administered lands in the Planning Area. The following is a brief description of the soil types shown in Figure 3-2.

Acid Igneous Rock Land is rough broken terrain. Large boulders and rock outcrops of granite, granodiorite, tonalinte, quartz diorite, gabbro, basalt, or gabbro diorite cover 50 to 90 percent of the total area of this soil type in San Diego County. The soil material is loamy to coarse sand in texture and is very shallow over decomposed granite or basic igneous rock.

Badland consists of areas of essentially barren, eroded, soft shale. The terrain is broken by numerous intermittent drainage channels that have cut into the soft shale. Runoff is very rapid, and the erosion hazard is very high. Also, sediment yield is very high.



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Miles
5 0 5 10
Kilometers

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FIGURE 3-2: Soil Types

Bancas Series (Bancas stony loam) consists of well-drained stony loam with a clay loam subsoil. The soils are underlain by quartz diorite and mica schist.

Boomer Series (Boomer stony loam) consists of well-drained, moderately deep to deep stony loams that have a stony clay loam subsoil. The surface layer is dark-brown and reddish-brown, slightly acid stony loam about 8 inches thick. The subsoil is strong-brown and yellowish-red, medium acid stony loam, and stony clay loam about 38 inches thick. The substratum is deeply weathered gabbro.

Calpine Series (Calpine coarse sandy loam) consists of well-drained, very deep coarse sandy loams that formed in granitic alluvium. These soils are on alluvial fans and have slopes of 2 to 15 percent. In a representative profile the surface layer is dark grayish-brown, neutral to medium acid coarse sandy loam about 12 inches thick. The subsoil is brown, slightly acid, coarse sandy loam about 22 inches thick. The substratum is brown, neutral, stratified fine gravelly sandy loam to fine gravelly loamy coarse sand. It extends to a depth of more than 60 inches.

Carrizo Series (Carrizo coarse sandy loam) consists of excessively drained, very deep, and very gravelly sands. These soils were derived from granitic alluvium.

Crouch Series (Crouch stony fine sandy loam) consists of well-drained, deep to moderately deep coarse sandy loams that formed in material weathered from acid igneous rock and micaceous schist.

Holland Series (Holland fine sandy loam and Holland stony fine sandy loam). The Holland series consists of well-drained, moderately deep, and deep fine sandy loams that formed in material weathered from micaceous schist. These soils are on mountainous uplands and have slopes of 2 to 60 percent. In a representative profile the surface layer is brown and yellowish-brown, medium acid, micaceous fine sandy loam about 20 inches thick. The subsoil is brown, medium acid, micaceous sandy clay loam. This layer extends to a depth of about 35 inches. The substratum is brownish-yellow, highly weathered mica schist. In some areas the soil is stony and cobbly throughout.

Indio Series (Indio silt loam and Indio silt loam saline) consists of well drained and moderately well drained, very deep silt loams that formed in alluvium derived from acid, igneous and micaceous rocks. Runoff is very slow, and the erosion hazard is none to slight.

Kitchen Creek Series (Kitchen Creek loamy coarse sand) consists of somewhat excessively drained, deep to moderately deep loamy coarse sands. These soils formed in material derived from granodiorite.

La Posta Series (La Posta loamy coarse sand, La Posta rocky loamy coarse sand, and La Posta–Sheephead complex) consists of somewhat excessively drained loamy coarse sands that formed in material weathered from granodiorite.

Loamy Alluvial Land consists of somewhat poorly drained, very deep, very dark brown to black silt loams and sandy loams.

Mecca Series (Mecca coarse sandy loam) consists of well-drained, very deep coarse sandy loams derived from granitic alluvium.

Metamorphic Rock Land occurs as excessively drained, hilly to mountainous areas. Numerous areas are covered with rock outcrops and angular stones and cobblestones; exposed rock covers 50 to 90 percent of the entire acreage of this soil in San Diego County. Runoff is rapid to very rapid.

Mottsville Series (Mottsville loamy coarse sand) consists of excessively drained, very deep, loamy coarse sands that in some areas formed in sandy sediments transported from granitic rock, and in others in material weathered in place from granitic rock.

Ramona Series (Ramona gravelly sandy loam) consists of well-drained, very deep sandy loams that have a sandy clay loam subsoil. These soils formed in granitic alluvium.

Reiff Series (Reiff fine sandy loam) consists of well-drained, very deep fine sandy loams that formed in alluvium derived from granitic rock.

Riverwash soils occur in intermittent stream channels and typically consist of sand, gravel, or cobble. Riverwash soil may be devoid of vegetation in many places or may contain sparse patches of shrubs and forbs. These soils are rapidly permeable and excessively drained.

Rositas Series (Rositas fine sand hummocky and Rositas loamy coarse sand) consists of somewhat excessively drained, very deep loamy coarse sands derived from granitic alluvium.

Rough Broken Land is made up of well-drained to excessively drained, steep and very steep land dissected by many narrow V-shaped valleys and sharp tortuous divides. Areas of exposed raw sediments are common, and there are a few areas of very shallow soils. Runoff is rapid to very rapid, and erosion is very high. The vegetation is a sparse cover of low woody shrubs.

Sheephead Series (Sheephead rocky fine sandy loam) consists of well-drained, shallow fine sandy loams that formed in material weathered from micaceous schist and gneiss. Rock outcrop covers about 10 percent of the area.

Sloping Gullied Land occurs in the desert on alluvial fans adjacent to mountains. It consists of a wide variety of material derived from igneous, sedimentary, and metamorphic rocks. The texture ranges from clay loam to gravelly, cobbly sand. Limy material has been exposed where gullies have dissected areas of old alluvium. Drainage is good to somewhat excessive. Runoff is medium to very rapid, and the erosion hazard is moderate to high.

Tollhouse Series (Tollhouse rocky coarse sandy loam) consists of excessively drained, shallow to very shallow coarse sandy loams that formed in material weathered from granodiorite.

Stony Land occurs at the base of cliffs or below steep rocky slopes. It is strongly sloping to very steep. The material consists of many stones, boulders, and cobblestones, and some finer material. In many places there are large boulders three to six feet in diameter on the surface.

3.4 Water Resources

3.4.1 Surface Water

There are no major lakes or reservoirs in the Planning Area. However, there are several small retention dams, built for the purpose of supplying water to livestock and wildlife. There are several springs in the Planning Area, which produce intermittent flow. Figure 3-3 shows the springs in the Planning Area.

3.4.2 Groundwater

The Planning Area falls within portions of the South Coast and the Colorado River Hydrologic Regions. There are several groundwater basins within the Planning Area; however, they are considered to be "low use basins" (SWRCB 2003). Figure 3-4 shows the groundwater basins in the Planning Area. As seen in Figure 3-4, the majority of the area covered by groundwater basins is on non-BLM-administered lands. The primary groundwater basins located on BLM-administered lands are the Vallecito-Carrizo Valley Basin (#7-28) and the Canebrake Valley Basin (#7-46)(see Figure 3-4). Mineral analyses of the Vallecito-Carrizo Valley Basin indicate that the quality is marginal for domestic use because of elevated levels of fluoride (Department of Water Resources [DWR] 2003). The total storage capacity of the Vallecito-Carrizo Valley Basin is 2,500,000 acre-feet with the amount of stored water unknown; however, the majority of this basin's coverage is outside the Planning Area. For the Canebrake Valley Basin, the storage capacity is unknown, as is the groundwater quality pertaining to domestic use (DWR 2003).

The state agencies that implement groundwater-related monitoring programs are the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs), DWR, Department of Health Services (DHS), Department of Toxic Substances Control (DTSC), and Department of Pesticide Regulation (DPR). These agencies are represented on the Interagency Task Force. Federal agencies that implement groundwater-related monitoring programs include the EPA, Bureau of Reclamation, and the United States Geological Survey (USGS). The DWR requires that water from newly constructed wells be sampled and the water quality assessed. 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.

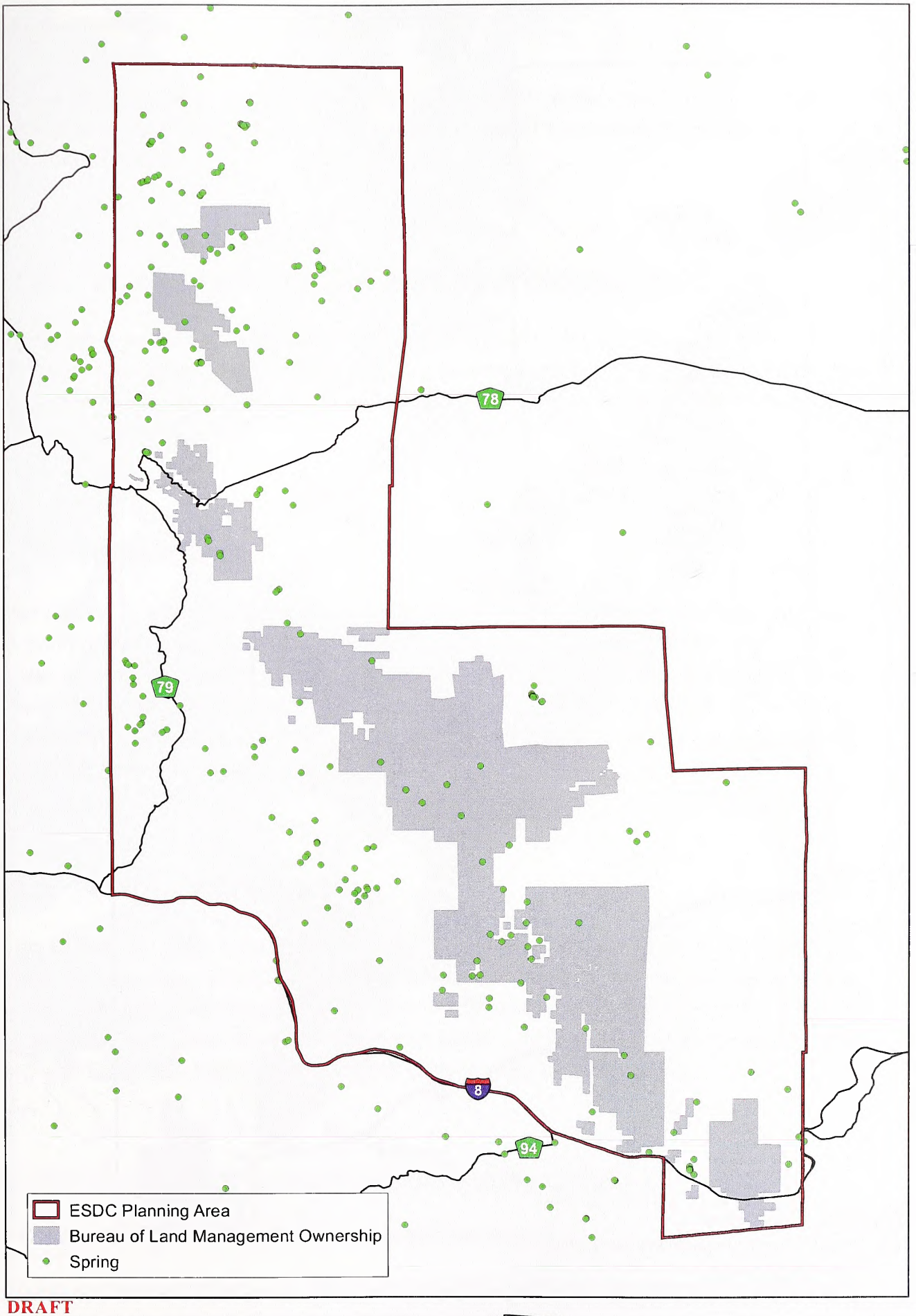

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FIGURE 3-3: Springs

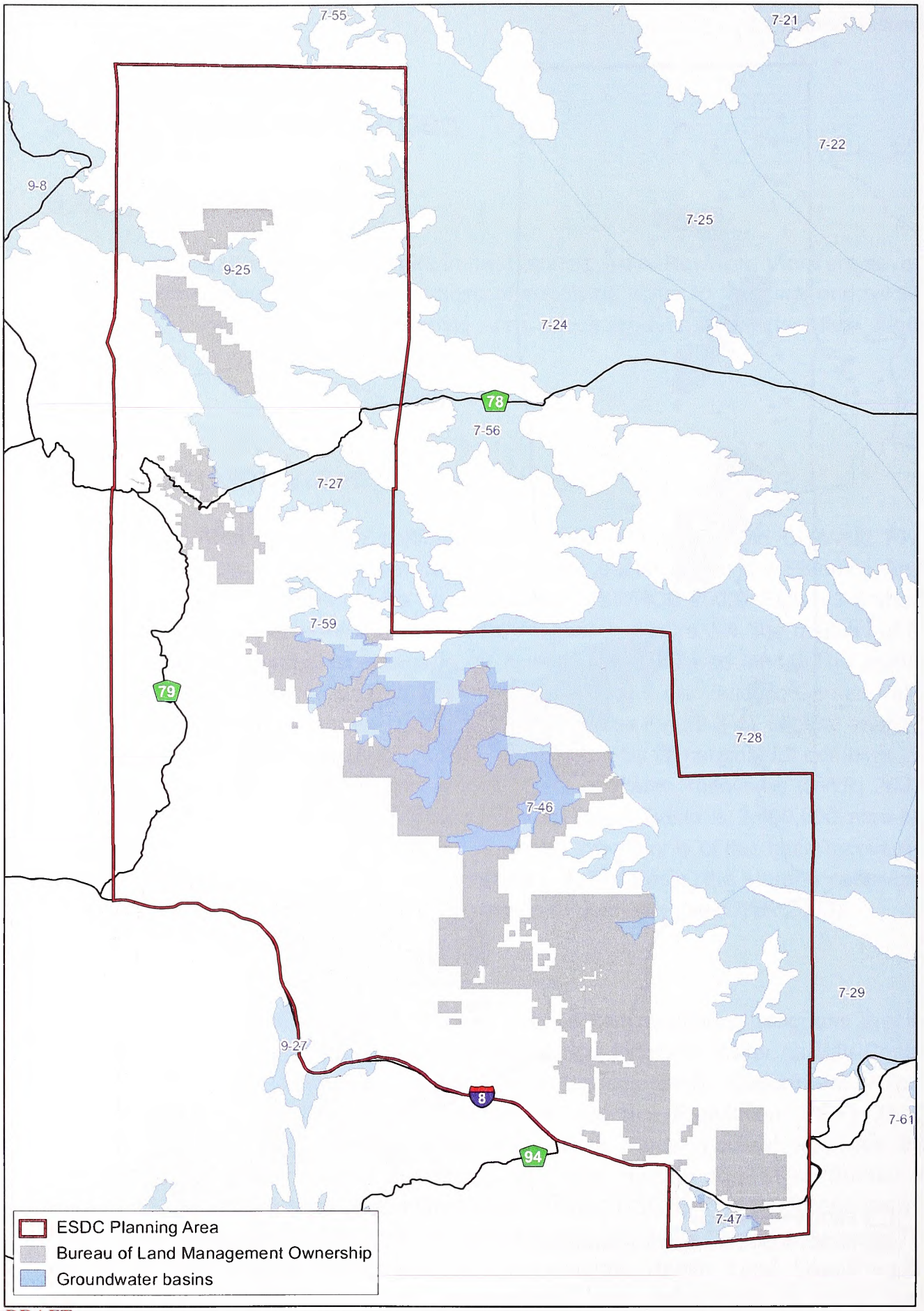

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FIGURE 3-4: Groundwater Basins

The laws and regulations applicable to the public supply wells establish numerical water quality criteria for these contaminants, called Maximum Contaminant Levels (MCLs), to protect public health.

3.4.3 Watershed Basins and Hydrologic Units

The Planning Area is located within the San Diego (Region 9) and the Colorado River (Region 7) watershed basins. The boundary between the two watersheds is within the Peninsular Range Mountains, as seen in Figure 3-5. Within these watersheds, smaller hydrologic units are defined.

3.4.4 Water Use

Water use on BLM-administered lands in the Planning Area consists of wildlife, livestock, and campground use. The natural springs and some developed springs are important sources of water for wildlife, including both game and non-game animals. Grazing on the McCain Valley Allotment is not occurring at this time since the springs are currently dry. The campgrounds have several water spigots which are supplied by groundwater pumped by windmill.

3.4.5 Regulatory Setting

Clean Water Act. The objective of the Federal Water Pollution Control Act (CWA; PL 92-500, as amended; 33 USC §§ 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters (Section 101a). Under Sections 401 and 404, the Clean Water Act regulates point- and non-point-source pollution and, along with EO 11990 titled Protection of Wetlands, impacts to wetlands.

The CWA has three major approaches to water pollution control:

1. Construction grants for reducing municipal discharges;

2. National Pollutant Discharge Elimination System (NPDES) permits for control of point source (storm water and waste water) discharges; and

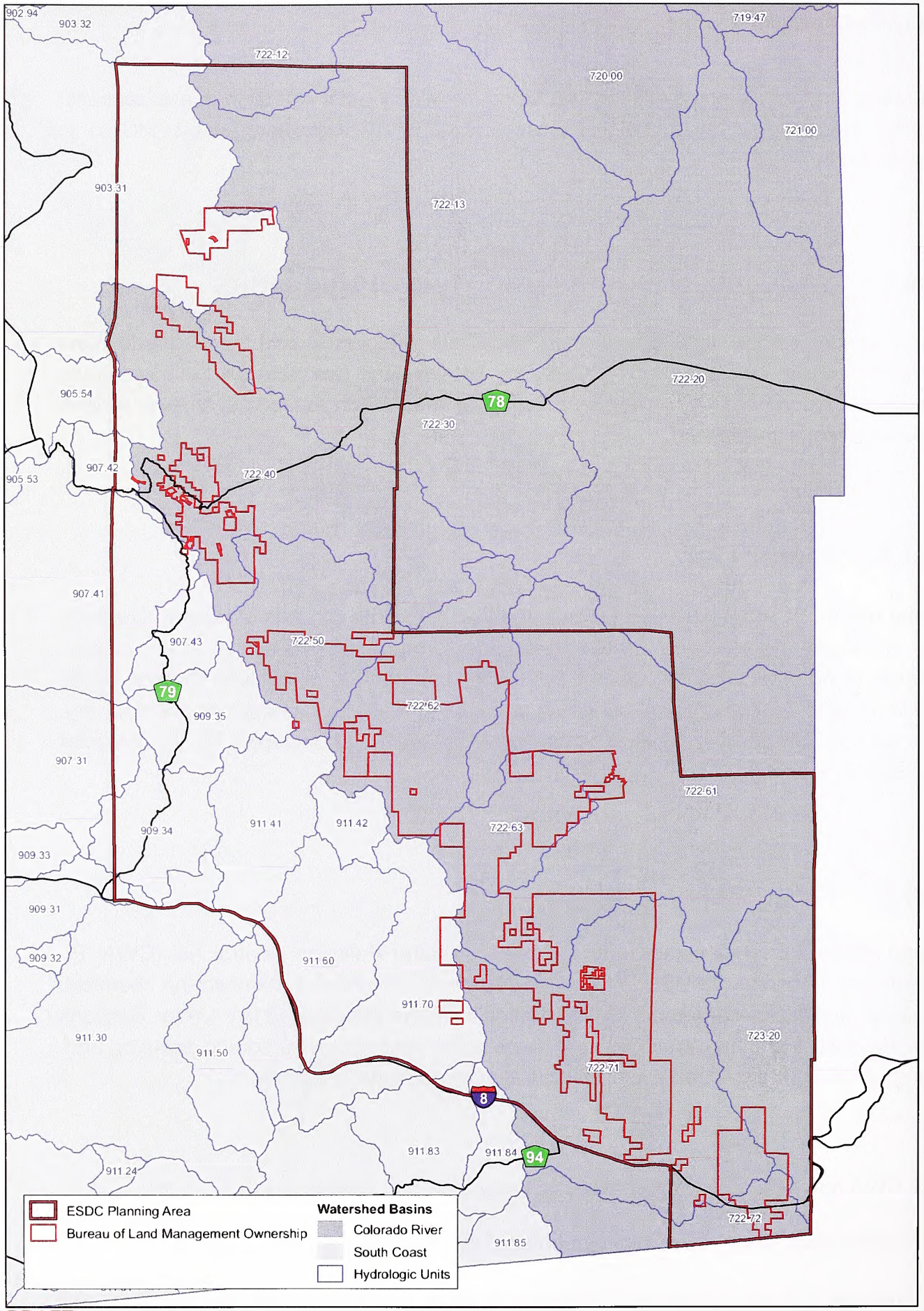

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FIGURE 3-5: Watershed Basins and Hydrologic Units

3. Water quality management planning for non-point-source (NPS) control from diffuse natural origins such as sediment.

In 1972 Congress adopted a "zero-discharge" goal and a focus on "preventable causes of pollution" to emphasize the source of contamination rather than controls at the outfall or water body itself. Water quality "standards" include a legal designation of the desired use for a given body of water and the water quality criteria appropriate for that use. The "criteria" are specific levels of water quality which are expected to make a water body suitable for its desired use. "Effluent limitations" are restrictions on quantities, rates, and concentrations in wastewater discharges measured at the discharger's outfall pipe.

Administration of Section 401 of the act is delegated to the State Water Resources Control Board (SWRCB) in California and, locally, to the San Diego Regional Water Quality Control Board (RWQCB) and the Colorado River RWQCB. The boundary between the two RWQCBs is within the Peninsular Range Mountains. The RWQCBs are responsible for setting water quality standards and criteria for water bodies in their respective regional plans, and for issuing and enforcing NPDES permits. A NPDES permit is currently not required for BLM activities in the Planning Area. The 401 Water Quality Certification application is available on the internet (http://www.swrcb.ca.gov).

Section 13241 of the California Water Code provides that each Regional Water Quality Control Board shall establish water quality objectives for the waters of the state (i.e., ground and surface waters) which, in the Regional Board's judgment are necessary for the reasonable protection of beneficial uses and prevention of nuisance. Section 303 of the Clean Water Act requires the state to adopt water quality objectives for surface waters. The San Diego RWQCB and the Colorado River RWQCB have established surface and ground water quality objectives and water quality standards for contaminants (California RWQCB, San Diego Region 1994; California RWQCB, Colorado River Basin 2005).

Data collected in 1978 showed that four springs (Black Water, Diablo, Cimarron, and Carrizo) were in excess of or approaching the recommended limits of chloride and/or sulfate concentrations for livestock and wildlife consumption (DOI BLM 1980). More recent data are not available.

The DWR is the primary state agency mandated to address water quantity (water supply) information (DWR 2005).

3.4.6 Federal Reserved Water Rights for Designated Wilderness Areas

"Today, federal reserved water rights can be asserted on most lands managed by the federal government. Reserved rights are, for the most part, immune from state water laws and therefore, are not subject to diversion and beneficial use requirements and cannot be lost by non-use. The federal government, however, is required to submit all reserved water rights claims to the state's adjudication process, limited by the 'primary purpose' and 'minimal needs' requirements. In addition, federal reserved water rights are nontransferable. By law, these rights can only exist on lands owned by the federal government. If a land transfer occurs, any existing federal reserved water right becomes invalid." (DOI BLM 2006b).

"Wilderness designations can be considered the most restrictive of the federal land management designations. Reserved water rights are set aside pursuant to the Wilderness Act of 1964 (16 USC Section 1131). Development within Wilderness Areas is restricted, and these restrictions extend to the development of water supplies. The Wilderness Act reserves the amount of water within the Wilderness Area necessary to preserve and protect the specific values responsible for designation of the area and to provide for public enjoyment of these values. Only the minimum amount of water necessary to fulfill the primary purpose of the reservation may be asserted as a reserved right." (DOI BLM 2006b).

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. As of 1997, no claims had been filed for water rights within wilderness areas in the Planning Area.

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3.5 Vegetative Communities

The Planning Area is bordered by the Colorado Desert on the East and by the coniferous forest of the Laguna Mountains on the west. Elevation escalates dramatically from east to west in the Planning Area. These sharp elevation changes make the Planning Area a highly diverse area for plant life.

BLM lands within the Planning Area harbor many different types of vegetation communities: mixed riparian woodland, oak woodland, desert wash, semi-desert chaparral, desert fan palm oasis, mixed conifer woodland, and enriched desert scrub. Figure 3-6 illustrates the vegetation communities on the BLM-administered lands within the Planning Area.

Mixed riparian woodlands occur along most water drainage systems within the Planning Area. A total of approximately 96.9 acres of riparian woodlands occur within the Planning Area. These areas are found in Upper Bow Willow Canyon, Pepperwood Canyon, Storm Canyon, and Buck Canyon, to name a few. These riparian woodlands comprise cottonwoods (*Populus* spp.), willow (*Salix* spp.), California bay (*Umbellularia californica*), and sycamore (*Platanus* spp.). Many of the riparian woodlands found within the Planning Area are infested with the invasive tamarisk (*Tamarix* spp.). Some areas have a small infestation, while others have a large infestation that could, if left untreated, turn into a monoculture of tamarisk, and a loss of native riparian vegetation.

Oak woodlands are also found within the Planning Area and make up a unique plant community. Oak woodlands occupy less than 1 percent of the Planning Area, but they are an important community for many types of animals that call Eastern San Diego County home. Oak groves are found in McCain Valley, Chariot Canyon, Buck Canyon and Oriflamme Canyon. The oak woodlands are made up of coast live oaks (*Quercus agrifolia*).

The desert wash plant community is common in the lower elevation areas of the Planning Area. This plant community is comprised of several species, including cheese bush (*Hymenoclea salsola*), desert willow (*Chilopsis linearis*), mesquite (*Prosopis* spp.), and indigo bush (*Psorothamnus emoryi*). In years with sufficient rainfall, many annuals may be found within the desert wash plant community. A few of the more common

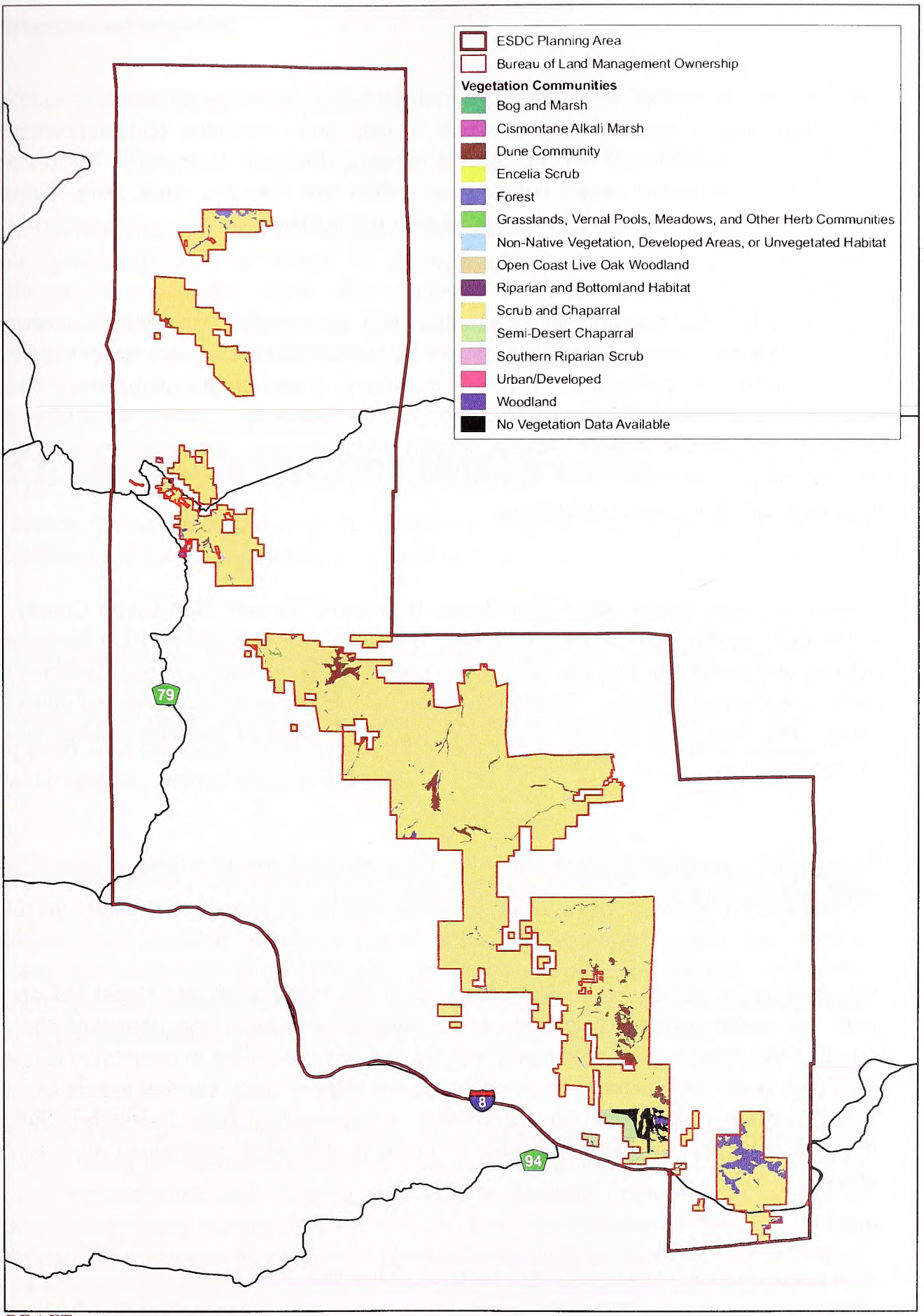

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FIGURE 3-6: Vegetation Communities

annuals found in this community include birdcage evening primrose (*Oenothera deltoides*), desert sand verbena (*Abronia villosa*), and cryptantha (*Cryptantha* spp.). Most years, regardless of rainfall, Sahara mustard (*Brassica tournefortii*) sprouts and flowers in most desert wash communities within the Planning Area. This invasive species competes with native annuals for water and nutrients.

Semi-desert chaparral is another widespread plant community found within the Planning Area. This plant community consists mostly of buckwheat (*Eriogonum* spp.), California juniper (*Juniperus californica*), mountain mahogany (*Cercocarpus betuloides*), desert apricot (*Prunus fremontii*), sumac (*Rhus* spp.), sage (*Salvia* spp.), Mormon tea (*Ephedra trifurca*), and catclaw acacia (*Acacia greggii*). Many annuals also make up this plant community on a seasonal basis, such as California poppy (*Eschscholzia californica*) and Coulter's lupine (*Lupinus sparsiflorus*).

Desert fan palm oases occur sporadically throughout Eastern San Diego County, in elevations ranging from 500 to 1000 feet. There are a few found on BLM lands near springs and seeps, but they are fairly rare. These oases normally comprise California fan palm (*Washingtonia filifera*). The California fan palm is native to California and occurs in moist soils near springs and seeps and also in shaded or partially shaded desert canyons.

Mixed conifer woodlands found within the Planning Area consist mainly of pine (*Pinus* spp.) and big cone spruce (*Pseudotsuga macrocarpa*).

Enriched desert scrub and alluvial desert scrub are found at slightly higher elevations than the desert wash and creosote scrub plant communities. The dominant species found in this type of plant community include, but are not limited to brittlebush (*Encelia farinosa*), burro bush (*Ambrosia dumosa*), agave (*Agave* spp.), catclaw acacia (*Acacia greggii*), range ratany (*Krameria parvifolia*), and creosote (*Larrea tridentata*). Sahara mustard (*Brassica tournefortii*) is also common in this plant community after rainfall events.

Also common to the lower elevation sections of the Planning Area is the creosote bush scrub plant community. This plant community is quite widespread and comprises mostly creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*). Common annuals found in the creosote scrub include birdcage evening primrose (*Oenothera deltoides*), desert sand verbena (*Abronia villosa*), and cryptantha (*Cryptantha* spp.). Sahara

mustard (*Brassica tournefortii*) is also common in this plant community after rainfall events.

The chamise chaparral plant community is also common within the Planning Area. This plant community consists mostly of chamise (*Adenostoma fasciculata*), redshank (*Adenostoma sparsifolia*), scrub oak (*Quercus* probably *berberidifolia*), sagebrush (*Artemisia* spp.) and California lilac (*Ceanothus* spp.). This plant community is also prone to infestation from the non-native Sahara mustard (*Brassica tournefortii*).

3.5.1 Mixed Riparian Woodland Inventory

An inventory was conducted by BLM biologists in 2005 to map all riparian areas within the BLM-administered lands within the Planning Area.

Riparian ecosystems act as ecotones between aquatic and terrestrial environments. They have unique biotic, biophysical and landscape characteristics, and they are important pathways for the flow of energy, matter and organisms through the landscape. A riparian area can occur along lotic systems such as the banks of rivers and streams, or lentic systems such as lakes and ponds.

Riparian vegetation accomplishes an assortment of essential ecosystem functions, including stream bank stabilization, thermal regulation of water, filtering and retention of nutrients, and provision of wildlife habitat. Riparian vegetation usually has a deep binding root mass that protects stream banks from erosion by trapping sediments. Without riparian plants, a stream bank may easily deteriorate, since upland vegetation may not hold sediments together as efficiently under high flow conditions.

Riparian zones are often the ecosystem-level component that is most sensitive to changes within the surrounding environment. Human activities such as cattle grazing, mining, transportation and camping may lead to denuded soils and degradation of riparian ecosystems through soil compaction. One key disturbance linked to human activities is the invasion of non-native plant species, such as tamarisk (*Tamarix* spp.). While invasive species can reproduce and spread on their own, human activities can increase the rates of spread. Species such as tamarisk and non-native grasses have root systems that provide little or no soil stabilization and can lead to quick erosion. Non-native species also out-compete native species for space and water resources.

Based on water conditions, riparian areas can be classified as perennial, intermittent, wet meadow and spring. Perennial streams have water flowing year-round. Intermittent streams have visible water in some areas, but water remains below the surface of the ground in other areas. In this case, water may appear above ground only in response to precipitation. A wet meadow has saturated soils, but no standing water. Wet meadows are often dominated by herbaceous riparian obligates instead of woody obligates. A spring or seep is a type of groundwater discharge. Springs typically display a higher flow rate than seeps.

Several wildlife species of concern utilize the riparian areas found within the Planning Area for food, shelter and water. These species include Peninsular bighorn sheep (*Ovis canadensis*), arroyo toad (*Bufo californicus*), least Bell's vireo (*Vireo bellii pusillus*), and the southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*).

There are 32 riparian areas were mapped on BLM-administered public lands within the Planning Area. These 32 riparian areas cover an area of approximately 96.90 acres (39.2 hectares) and range in size from less than 1 square foot (1 square meter) to 655,867 square feet (60,932 square meters) (DOI BLM 2005e). Table 3-2 lists the riparian areas by name with their respective areas.

Several native riparian obligate woody plant species are found within the Planning Area. These species are willow (*Salix* spp.), California fan palm (*Washingtonia filifera*), Fremont cottonwood (*Populus fremontii*), sycamore (*Platanus* spp.), alder (*Alnus rhombifolia*), ash (*Fraxinus* spp.), and arrow weed (*Pluchea sericea*).

Several desirable native herbaceous riparian obligates can also be found within the Planning Area: rush (*Juncus* spp.), sedge (*Carex* spp.), horse tail (*Equisetum* spp.), nettle (*nettle* spp.), and cattail (*Typha* spp.).

TABLE 3-2
RIPARIAN AREAS WITHIN BLM-ADMINISTERED LANDS IN THE PLANNING AREA

Riparian Area Name	Total Acreage	Acreage Burned	Assessment Post-fire	Tamarisk Coverage (percent of total)
Banner	0.37	0.37	NF	0
Bow Willow LR	6.04	0	PFC	<1%
Bow Willow north UR	5.34	0	PFC	1-15%
Bow Willow south UR	5.72	0	PFC	1-15%
Buck Canyon LR	2.84	2.84	FAR	0
Buck Canyon UR	3.90	3.90	FAR	0
Burnt Trunk	0.37	0	PFC	1-15%
Campbell Spring	0.25	0	PFC	>15%
Chariot Canyon LR	4.95	4.95	FAR	<1%
Chariot Canyon MR	11.63	11.63	PFC	<1%
Chariot Canyon UR	5.26	5.26	NF	<1%
Cottonwood Campground LR	0.91	0	PFC	0
Cottonwood Campground UR	0.42	0	FAR	0
Cottonwood Canyon	4.92	4.92	FAR	<1%
Cottonwood Spring	0.005	0	NF	0
Desert Agave	0.25	0.25	FAR	>15%
Desert Queen	0.007	0.007	FAR	0
Dome Tributary #1	0.23	0.20	PFC	0
Dome Tributary #2	0.05	0.05	PFC	1-15%
End of McCain	0.06	0	PFC	0
Foundation	0.17	0.17	FAR	0
Four Frogs LR	2.50	0	PFC	<1%
Four Frogs UR	1.64	0	PFC	<1%
Jacumba Jim	6.56	0	PFC	<1%
Lone Willow	0.03	0.03	PFC	0
Oriflamme Canyon LR	4.43	4.43	FAR	<1%
Oriflamme Canyon UR	0.81	0.81	PFC	<1%
Pepperwood LR	7.89	0	PFC	<1%
Pepperwood UR	4.09	0	PFC	0
Red Water	0.20	0.20	FAR	0
Rusty Pipe	0.0002	0.0002	NF	0
Storm Canyon	15.06	15.06	PFC	<1%
Total	**96.90**	**55.11**		

LR = lower reach
MR = middle reach
UR = upper reach
PFC = proper functioning condition
FAR = functional at risk
NF = nonfunctional

Five invasive species (other than *Tamarix* spp.) have been found in riparian areas within the Planning Area: rip gut (*Bromus diandrus*), cheatgrass (*Bromus tectorum*), black mustard (*Brassica nigra*), spiny sowthistle (*Sonchus asper*), and Mediterranean mustard (*Hirsfeldia incana*).

Eighteen out of the 32 riparian areas found within the Planning Area were burned in 2002 covering a total of 55.11 acres (see Table 3-2). Of the eighteen burned riparian areas, six were assessed in 2005 as being in proper functioning condition. Nine of the burned areas were assessed as functional at risk level, and three areas as non-functional.

Tamarix spp. was found in 17 out of 32 riparian areas in the Planning Area during the 2005 field season (see Table 3-2). Of these seventeen areas, two areas were more than 15 percent covered. Three areas had 1 to 15 percent coverage and 12 areas had less than 1 percent coverage. *Tamarix* spp. invasion is a real threat to riparian ecosystems within the Planning Area. The ECFO currently removes *Tamarix* spp. using the following methods: mechanical (loppers, chainsaws, and handsaws) chemical, and in some cases, by hand as funding and man-power are available. As of 2006, the BLM has removed approximately 90 acres of *Tamarix* spp. infestations.

3.5.2 Invasive and Noxious Weed Species

Throughout southern California, native vegetation has been altered by the introduction—and in many cases dominance—of non-native plant species, some of which can change ecosystem dynamics dramatically. These invasive and noxious weed species may outcompete natives for water, nutrients, or sun; disrupt processes such as soil nitrogen cycling or pollination relationships; or predispose an area to wildfire by providing excess fuel in areas that would normally have supported lower fuel loads. Several non-native species have the ability to completely change the structure of the vegetation, making it unsuitable to most native wildlife species. Special status wildlife and plant species are particularly at risk from these invasive weed species.

Some non-native plants that occur in very low numbers or seem innocuous for years may expand their range dramatically and become a difficult pest weed under the right environmental conditions. These conditions might be brought about by a year with very late rains or a flood that results in heavy sedimentation of drainages leading to the establishment of riparian weeds.

EO 13112 was signed in February 1999 directing federal agencies to identify and manage invasive species. The order stipulates that actions will be taken to prevent the introduction of invasive species, monitor for their presence, and respond rapidly to eliminate them.

An effective way to implement these actions is through the Federal Noxious Weed Act of 1975 that requires federal land managers to develop a management program to control undesirable plants on federal lands under the agency's jurisdiction and to cooperate with state and federal agencies to manage undesirable plants.

The BLM maintains a federal list of noxious weeds of concern. In addition, the State of California and California Invasive Plant Council (Cal-IPC) also maintain lists that focus particularly on California. All three lists are included in Appendix C.

3.5.3 Priority Plant Species

Priority plant species are rare, unusual, or key species that are not BLM sensitive or listed as threatened and endangered. They are worthy of special treatment and indicate ecological health, biological diversity, and unique habitats. A number of priority plant species are either known or suspected to occur on BLM-administered lands within the Planning Area based on direct observations or presence of the species within the vicinity of BLM lands (Table 3-3).

TABLE 3-3
PRIORITY PLANT SPECIES

Scientific Name	Common name	Family	CNPS Status	Occurrence Known or Suspected
Agave deserti (Engelm.) Gentry	Desert agave	Liliaceae	--	Known
Arctostaphylos peninsularis var. *peninsularis*	Peninsular manzanita	Ericaceae	List 2	Suspected
Eucnide rupestris	Rock nettle	Loasaceae	List 2	Suspected
Ferocactus viridescens (Torrey & A. Gray) Britt. & Rose	Coast barrel cactus	Cactaceae		Known
Geraea viscida	Sticky geraea	Asteraceae	List 2	Known
Hesperocaulus ungulate	Desert lily	Liliaceae		Known
Hulsea mexicana	Mexican hulsea	Asteraceae	List 2	Known
Ipomopsis tenuifolia	Slender-leaved Ipomopsis	Polemoniaceae	List 2	Known
Linanthus bellus	Desert beauty	Polemoniaceae	List 2	Known
Lycium parishii	Parish's desert thorn	Solanaceae	List 2	Suspected
Malperia tenius	Brown turbans	Asteraceae	List 2	Suspected
Mentzelia hirsutissima	Hairy stickleaf	Loasaceae	List 2	Known
Nolina bigelovii	Beargrass	Liliaceae		Known
Fouquieria splendens Engelm. ssp. *splendens*	Ocotillo	Fouquieraceae	--	Known
Opuntia wolfii	Wolf's cholla	Cactaceae	List 4	Suspected
Opuntia spp.	Cholla and cactus	Cactaceae		Known
Quercus agrifolia	Coast live oak	Fagaceae	--	Known
Quercus chrysolepis	Canyon live oak	Fagaceae	--	Known
Quercus kelloggii	California black oak	Fagaceae	--	Known
Quercus wislizeni	Interior live oak	Fagaceae	--	Known
Senecio aphanactis	Rayless ragwort	Asteraceae	List 2	Suspected
Yucca schidigera K.E. Ortgies	Mohave yucca	Liliaceae	--	Known

CNPS = California Native Plant Society
List 2 = Species rare, threatened, or endangered in California but which are more common elsewhere. These species are eligible for state listing.
List 3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information are needed.
List 4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

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3.6 Wildlife

3.6.1 General Wildlife Habitat

The Planning Area is bordered by the Colorado Desert on the east and by coniferous forest of the Laguna Mountains on the west and precipitation shows a pronounced increase from south to north. Because of its transitional situation, the area shows a complex vegetation pattern that has also been modified by fire exclusion, flood, drought, and grazing. The vegetative pattern is sparse and open along the southern limits of the area, while the pattern in the north is very dense. This provides a complex variety of wildlife habitats throughout the Planning Area. An abundance of wildlife exists within the Planning Area including several sensitive and federally threatened species (see Section 3.7). The area serves as a migratory corridor for numerous species of neotropical migrant birds.

3.6.2 Wildlife Habitat Improvements

CSFG in coordination with Quail Unlimited maintains a number of artificial water sources (wildlife waters) for wildlife in the McCain Valley and Table Mountain areas. These wildlife waters consist of an underground concrete tank with a concrete apron at the opening (20 feet long) to funnel rainwater in. Many of these wildlife waters were constructed in the 1940s and 50s, and there is no clear record of their locations. Quail Unlimited continually maps the locations of unknown wildlife waters and provides the locations to BLM and the CDFG.

3.6.3 Priority Wildlife Species Habitat

The priority wildlife identified by the BLM for management includes raptors, non-game migratory birds, bats, and game animals. The following provides a brief description of the basic needs of each of these wildlife categories.

Raptors. Raptors require a variety of foraging and nesting/roosting habitat. Most raptor species in the Planning Area require large open, primarily grassland areas in which to hunt for small mammals. Most raptors nest in tall trees, though some raptor species in the Planning Area nest on cliffs or on the ground in grasslands.

Non-game migratory birds. Non-game migratory birds include neotropical migrants, which are an important component of the ecosystem. They have a wide variety of habitat needs for food, water, cover, and nesting and are a good environmental indicator of overall ecosystem health.

Bats. Bats have specialized roosting and breeding habitat requirements, often establishing colonies in caves/mines, rock outcrops, bridges, tree cavities, abandoned buildings, or other enclosed protected places. These species are nocturnal and will exit the roosting location in the evenings to forage for food within the vicinity of the colony.

Game animals. BLM is required to manage for the habitat of all game animals that occur on their administered lands within the Planning Area. Habitat features include ensuring there is sufficient food/forage, water, and cover/nesting locations. Mule deer and quail occur in the semi-desert, mixed, and chamise chaparral communities Hunting is popular in the McCain Valley area where these species occur. Much of the mixed chamise chaparral is overgrown and has limited the structure and diversity of the under story, which has an impact on the quality of forage that is available for game species.

3.7 Special Status Species

There are a number of special status plant and wildlife species that are known from the Planning Area. Table 3-4 lists all species that are listed by the federal or state government as threatened or endangered or are listed as sensitive by BLM. Table 3-4 also provides an assessment regarding occurrence on BLM-administered lands in the Planning Area.

3.7.1 Federally Listed Species

USFWS has identified ten federally listed species as occurring within the Planning Area: Peninsular bighorn sheep, least Bell's vireo, SWFL, arroyo toad, quino checkerspot butterfly, Laguna Mountains skipper, unarmored threespine stickleback, Mexican flannelbush, Nevin's barberry, and San Bernardino blue grass. Species accounts are presented below for the ten listed species identified in this section as possibly occurring in the Planning Area. Pertinent aspects of the status, distribution, life history, and habitat requirements of these species have been extracted from a variety of sources, including the proposed and final rules to list these species; the proposed and final rules to designate critical habitat, recovery plans, scientific journal articles, and other relevant documents. Records of occurrence for the Planning Area are based on BLM file documents and field notes; published literature sources, technical reports, and the California Natural Diversity Database (CDFG 2006).

3.7.1.1 Peninsular Bighorn Sheep

Species

The Peninsular Ranges population of bighorn sheep (*Ovis canadensis*) was listed as an endangered species in March 1998 in response to population declines associated with habitat loss, disease, predation, low recruitment, and adverse behavioral responses to residential and commercial development, among other factors (USFWS 1998). The range of the listed population extends from the San Jacinto Mountains in Riverside County to the Mexican border. Most of the population lives along east facing slopes of the Peninsular Ranges at elevations ranging from 300 to 4,000 feet on the northwestern edge of the Sonoran Desert. Their distribution, particularly during the summer, tends to be concentrated around permanent water sources. The Peninsular Ranges population was recently estimated to contain 335 animals, distributed among eight known ewe groups. Sexually mature females in good health typically produce one lamb per year and

TABLE 3-4
SPECIAL STATUS SPECIES

Scientific Name	Common Name	Federal Status	State Status	BLM Status	Occurrence Known or Suspected
Plant Species					
Astragalus douglasii var. *perstrictus*	Jacumba milkvetch			Sensitive	Known
Clarkia delicata	Delicate clarkia			Sensitive	Suspected
Deinandra floribunda	Tecate tarplant			Sensitive	Suspected
Fremontodendron mexicanum	Mexican flannelbush	FE	SR		Not expected
Heuchera brevistaminea	Laguna Mountains alumroot			Sensitive	Suspected
Hulsea californica	San Diego sunflower			Sensitive	Known
Lupinus excubitus var. medius	Mountain Springs bush lupine			Sensitive	Known
Machaerantha asteroides var. lagubnensisq	Laguna Mountains aster		SR		Suspected
Berberis nevinii	Nevin's barberry	FE	SE		Not expected
Poa atropurpurea	San Bernardino blue grass	FE			Not expected
Streptanthus campestris	Southern jewelflower			Sensitive	Known
Tetracoccus dioicus	Parry's tetracoccus			Sensitive	Suspected
Wildlife Species					
Euphydryas editha quino	Quino checkerspot butterfly	FE			Suspected
Pyrgus ruralis lagunae	Laguna Mountains skipper	FE			Not expected
Gasterosteus aculeatus williamsoni	Unarmored three-spined stickleback	FE	SE		Not expected
Bufo californicus	Arroyo toad	FE			Not expected
Coleonyx switaki	Barefoot gecko		ST	Sensitive	Known
Buteo swainsoni	Swainson's hawk		ST		Known
Empidonax traillii extimus	SWFL	FE	SE	Sensitive	Suspected
Vireo vicinior	Gray vireo			Sensitive	Known
Vireo bellii pusillus	Least bell's vireo	FE	SE	Sensitive	Known
Myotis ciliolabrum	Small footed myotis				Known
Myotis evotis	Long-eared myotis				Suspected
Plecotus townsendii	Townsend's western big-eared bat				Known
Ovis canadensis nelsoni	Peninsular bighorn sheep	FE	ST		Known

FE = federally listed endangered
SE =state-listed endangered
ST = state-listed threatened
SR = state-listed rare

have a gestation period of five to six months. Lambing occurs between January and June, with most lambs being born between February and May. Lambs are precocial and within a day or two are able to climb nearly as well as the ewes. Ewes and lambs frequently occupy steep terrain that provides a diversity of slopes and exposures for escape cover and shelter from excessive heat. Lambs are able to eat native grass within two weeks of birth and are weaned between one and seven months of age. By their second spring, bighorn sheep lambs are independent of the ewes and, depending upon physical condition, may attain sexual maturity during the second year of life.

Habitat

Peninsular bighorn sheep inhabit hot, dry regions of the desert that possess key habitat characteristics relating to topography, visibility, water availability, and forage quality and quantity. Alluvial fan areas are used for breeding and feeding activities. Steep topography is required for lambing and rearing habitat and for escaping from predators. Open terrain with good visibility is needed because bighorn sheep rely primarily on their sense of sight to detect predators. Caves and other forms of shelter (e.g., rock outcrops) are used during inclement weather. Lambing areas are associated with ridge benches or canyon rims adjacent to steep slopes or escarpments. On BLM-administered lands within the Planning Area, the only known lambing areas are in designated WAs. Summer concentration areas are associated primarily with dependable water sources, which have sufficient vegetation nearby to meet their forage requirements. The primary constituent elements of critical habitat, as stated in the final rule (USFWS 2001) include: "...space for the normal behavior of groups and individuals; protection from disturbance; availability of the various native desert plant communities found on different topographic slopes, aspects, and landforms, such as steep slopes, rolling foothills, alluvial fans, and canyon bottoms; a range of habitats that provide forage, especially during periods of drought; steep, remote habitat for lambing, rearing of young, and escape from disturbance and/or predation; water sources; suitable linkages allowing individual bighorn to move freely between ewe groups, and maintain connections between subpopulations within the Peninsular Range metapopulation; and other essential habitat components to accommodate population expansion to a recovery level."

Occurrence in the Planning Area

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 (USFWS 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 State Park. Of

the 846,618 acres of critical habitat for Peninsular bighorn sheep, approximately 53,000 acres (6.3 percent of the total) overlap with BLM-administered lands in the Planning Area (Figure 3-7). Most of the overlap is within the Carrizo Gorge Wilderness. Much of the Carrizo Gorge Wilderness 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.

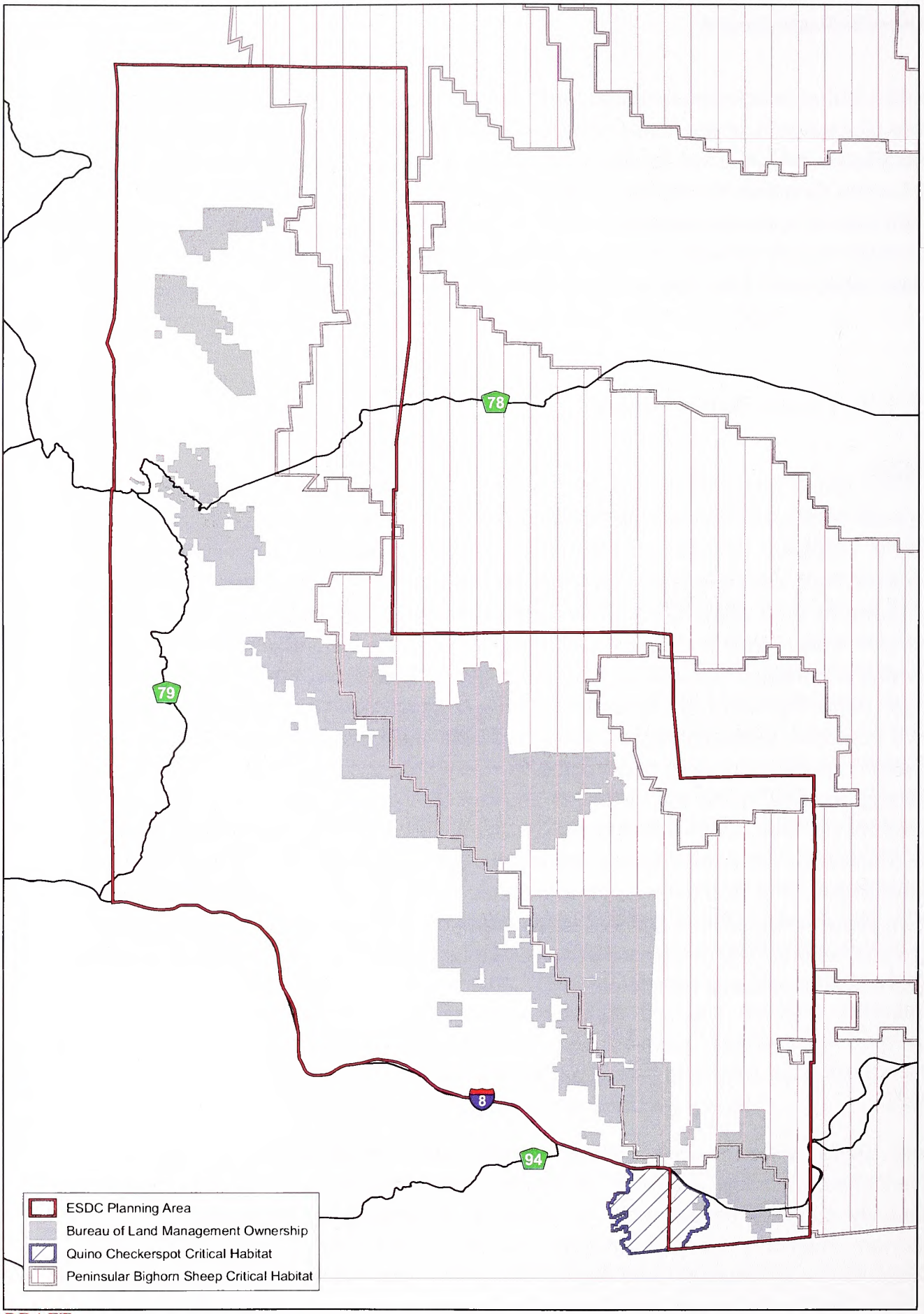
3.7.1.2 Least Bell's Vireo

Species

The least Bell's vireo (*Vireo bellii pusillus*) was listed as an endangered species in May 1986 in response to population declines associated with urban development, water diversion, flood control projects, grazing, riparian habitat loss, and brood-parasitism by the brown-headed cowbird (USFWS 1986). The historical distribution of this species extended from Tehama County, California, to northern Baja California, Mexico. The surviving populations occur seasonally in the United States and are concentrated in San Diego, Santa Barbara, and Riverside Counties. Least Bell's vireos generally begin to arrive from their wintering range in southern Baja California by mid- to late March and establish breeding territories soon thereafter. Most breeding least Bell's vireos depart the breeding grounds by the third week of September. Very few winter in California or the United States. Least Bell's vireos typically occupy home ranges that vary in size from 0.5 to 7.5 acres. At the time of listing, there were approximately 300 breeding pairs in the United States. The distribution and abundance of this bird has increased somewhat in recent years in response to brown-headed cowbird control programs and riparian habitat restoration efforts. The overall population estimate for 1997 was 2000 pairs, about half of which occurred at Camp Pendleton.

Habitat

Least Bell's vireo nesting habitat consists of well-developed overstories and understories, with low densities of aquatic and herbaceous cover. The understory frequently contains dense shrub or subshrub thickets, often dominated by willows. Important overstory species include mature arroyo willows and black willows. Occasionally, cottonwoods and western sycamore are included among the overstory habitats used by vireos and in some cases coast live oak may be locally important. Most least Bell's vireo nest sites are in willow stands between five and ten years of age. It appears that the structure of the vegetation is more important than species composition, age of the stand, or other factors. Critical habitat was designated for the least Bell's vireo



DRAFT

EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

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CALIFORNIA
Sacramento
Planning Area
El Centro

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
February 2007

The Bureau of Land Management makes no warranties, implied or expressed, with respect to information shown on this map.

FIGURE 3-7: Critical Habitat

in February 1994 (USFWS 1994a). It consists of ten separate stream reaches in southern California encompassing about 38,000 acres in Santa Barbara, Ventura, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The primary constituent elements of designated critical habitat are "riverine and floodplain habitats (particularly willow-dominated riparian woodland with dense understory vegetation maintained, in part, in a non-climax stage by periodic floods or other agents) and adjacent coastal sage scrub, chaparral, or other upland plant communities."

Occurrence in the Planning Area

There are small amounts of potential habitat present in remote canyons that have dense understory vegetation. Surveys conducted by Anza-Borrego Desert State Park have found least Bell's vireo in Carrizo Gorge Wilderness and the species is documented as breeding along Bow Willow Canyon on state park land which originates in the Carrizo Gorge Wilderness (Wells and Kus 2001). One of the designated critical habitat units for this species, Coyote Creek, occurs in the Planning Area on lands managed by the California Department of Parks and Recreation. However, there is no overlap of least Bell's vireo critical habitat with BLM-administered public lands.

3.7.1.3 Southwestern Willow Flycatcher

Species

The SWFL (*Empidonax traillii extimus*) was listed as an endangered species in February 1995 in response to population declines associated with habitat loss (resulting primarily from urban and agricultural development, water diversion and impoundment, livestock grazing, and altered hydrological conditions) and nest depredation and brood parasitism by the brown-headed cowbird (USFWS 1995). The breeding range of this species extends from southern California to western Texas, including portions of southernmost Nevada and Utah, and northernmost Sonora and Baja California. Nesting begins in late May and early June and young are fledged from late June through mid-August. Currently only about 70 nesting pairs of SWFLs remain in southern California. These individuals are found in ten nesting groups, of which only two are considered to be stable or increasing. Recent increases in these two nesting groups are believed to have occurred because of brown-headed cowbird control efforts. SWFLs typically forage within and above the canopy of riparian vegetation, taking insects on the wing or gleaning them from vegetation. Nesting occurs in even-aged thickets of trees and shrubs approximately 13 to 23 feet tall, which have a high percentage of canopy cover and dense foliage from ground level up to about 13 feet above the riparian floor.

Habitat

Suitable breeding habitat for the SWFL consists of dense riparian vegetation near water or saturated soil. The dominant plant species, size and shape of habitat patches, canopy structure, and other habitat variables vary from monotypic to mixed-species stands and from simple to complex vegetation structures. In different parts of its range, breeding habitat is comprised of dense high-elevation willow stands; mixtures of native broadleaf shrubs and trees (willow, cottonwood, box elder, ash, alder, and buttonbush); monotypic closed-canopy stands of tamarisk or Russian olive; or a mix of native shrubs and exotic species. Narrow linear riparian patches only one or two trees deep that do not have the potential to increase in depth are not considered breeding habitat, although they can be used by SWFLs during migration. Critical habitat was originally designated for the SWFL in July 1997. As a result of a lawsuit, this was set aside in 2001 by the 10th Circuit Court of Appeals. Critical habitat was subsequently reevaluated and redesignated in 2005 (USFWS 2005b). Five Recovery and 15 Management Units were designated in California, Arizona, New Mexico, Nevada, Colordao, and Utah. Of the 737 miles of stream and river corridors designated as critical habitat, about 195 miles are in California. The primary constituent elements (PCE) of critical habitat identified in the final rule (USFWS 2005b) are:

1) Riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) that comprises:

   (a) Trees and shrubs that include Goodding's willow (*Salix gooddingii*), coyote willow (*Salix exigua*), Geyers willow (*Salix geyerana*), arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), yewleaf willow (*Salix taxifolia*), pacific willow (*Salix lasiandra*), box elder (*Acer negundo*), tamarisk (*Tamarix ramosissima*), Russian olive (*Eleagnus angustifolia*), buttonbush (*Cephalanthus occidentalis*), cottonwood (*Populus fremontii*), stinging nettle (*Urtica dioica*), alder (*Alnus rhombifolia*, *Alnus oblongifolia, Alnus tenuifolia*), velvet ash (*Fraxinus velutina*), poison hemlock (*Conium maculatum*), blackberry (*Rubus ursinus*), seep willow (*Baccharis salicifolia*, *Baccharis glutinosa*), oak (*Quercus agrifolia*, *Quercus chrysolepis*), rose (*Rosa californica*, *Rosa arizonica*, *Rosa multiflora*), sycamore (*Platinus wrightii*), false indigo (*Amorpha californica*), Pacific poison ivy (*Toxicodendron diversilobum*), grape (*Vitus arizonica*), Virginia creeper (*Parthenocissus quinquefolia*), Siberian elm (*Ulmus pumila*), and walnut (*Juglans hindsii*).

(b) Dense riparian vegetation with thickets of trees and shrubs ranging in height from 2 metes to 30 meters (6 to 98 feet). Lower-stature thickets (2 to 4 meters or 6 to 13 feet tall) are found at higher elevation riparian forests and tall-stature thickets are found at middle- and lower- elevation riparian forests;

(c) Areas of dense riparian foliage at least from the ground level up to approximately 4 m (13 feet) above ground or dense foliage only at the shrub level, or as a low, dense tree canopy;

(d) Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground) (i.e., a tree or shrub canopy with densities ranging from 50 percent to 100 percent);

(e) Dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that creates a mosaic that is not uniformly dense. Patch size may be as small as 0.1 hectare (0.25 acre) or as large as 70 hectares (175 acres); and

(2) A variety of insect prey populations found within or adjacent to riparian floodplains or moist environments, including: flying ants, wasps, and bees (Hymenoptera); dragonflies (Odonata); flies (Diptera); true bugs (Hemiptera); beetles (Coleoptera); butterflies/moths and caterpillars (Lepidoptera); and spittlebugs (Homoptera).

The discussion above outlines those physical and biological features essential to the conservation of the SWFL and presents the rationale as to why those features were selected. The primary constituent elements described above are results of the dynamic river environment that germinates, develops, maintains, and regenerates the riparian forest and provides food for breeding, non-breeding, dispersing, territorial, and migrating SWFLs. Human activities and actions such as dams, irrigation ditches, or agricultural field return flow can assist in providing conditions that support flycatcher habitat. Because the flycatcher exists in disjunct breeding populations across a wide geographic and elevation range, and is subject to dynamic events, critical habitat river segments described below are essential for the flycatcher to maintain metapopulation stability, connectivity, gene flow, and protect against catastrophic loss. All river segments designated as SWFL Critical Habitat are within the geographical area occupied by the species and contain at least one of the primary constituent elements. It is important to recognize that the PCEs are present throughout the river segments selected (PCE 1a and 2), but the specific quality of riparian habitat for nesting (PCE 1b, 1c, 1d, 1e), migration (PCE 1), foraging (PCE 1 and 2), and shelter (PCE 1) will not remain constant in their condition or location over time due to succession (i.e., plant germination and growth) and the dynamic environment in which they exist.

Occurrence in the Planning Area

Surveys conducted by California Partners in Flight have not detected recent use of the Planning Area by breeding SWFLs. Critical habitat has been designated for this species along San Felipe Creek, adjacent to the San Felipe Hills WSA, but there is no overlap of BLM-administered land with critical habitat. It is possible that SWFLs might make transitory use of secluded riparian areas that have dense understory vegetation, but it is doubtful that any of the BLM-administered public lands in the Planning Area currently possess the suite of habitat features needed to support a breeding population. A search of the California Natural Diversity Database (State of California 2006) revealed no occurrence records for the SWFL on public lands in the Planning Area.

3.7.1.4 Arroyo Toad

Species

The arroyo toad (*Bufo californicus*) was listed as an endangered species in December 1994 in response to population declines associated with urbanization, stream channelization, water development, predation, habitat fragmentation, and other human influences (USFWS 1994b). The arroyo toad is one of three members of the southwestern toad (*B. microscaphus*) complex, in the family of true toads, Bufonidae (USFWS 1999). Arroyo toads were historically found in many coastal drainages from Monterey County to San Diego County and at a few inland sites in Los Angeles, San Bernardino, Riverside, San Diego, and Imperial Counties. They have been extirpated from approximately 75 percent of their historic range and now survive as small isolated headwater populations in only a score or so of the watersheds they once occupied (USFWS 1999). At the time of listing, only eight of the surviving populations were considered to be viable.

Habitat

Arroyo toads require a mosaic of habitats for breeding, foraging, sheltering, and living space, as well as for migration and dispersal corridors. Adult toads excavate shallow burrows on terraces, which they use for daytime shelter during the "damp" season and for much longer periods during the dry season. Breeding occurs from late March until mid-June in low-gradient streams that have sandy or fine gravel substrates. Eggs are deposited and larvae develop in shallow pools with minimal current and little or no emergent vegetation. After metamorphosis occurs in June or July, the juvenile toads remain on the adjacent gravel bars until the pools no longer persist. Dispersal habitats consist of alluvial terraces and valley bottomlands that have loose, sandy soils (usually

within a mile of the stream course and no more than 80 feet above the elevation of the stream channel) where adult toads can burrow underground. A total of approximately 4,733 hectares (11,695 acres) is designated as critical habitat in Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside Counties in California, (USFWS 2005a). Critical habitat identifies specific areas that are essential to the conservation of a listed species and, with respect to areas within the geographic range occupied by the species, which may require special management considerations or protection. USFWS identified the primary constituent elements required by the arroyo toad when designating critical habitat (USFWS 2005a). These are:

1) rivers or streams with a hydrologic regime that supplies sufficient flowing water of suitable quality and sufficient quantity and at the appropriate times to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads;

2) low-gradient stream segments (typically less than 6 percent) with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles;

3) a natural flooding regime or one sufficiently corresponding to a natural regime that will periodically scour riparian vegetation, rework stream channels and terraces, and redistribute sands and sediments, such that breeding pools and terrace habitats with scattered vegetation are maintained;

4) riparian and adjacent upland habitats (e.g., alluvial scrub, coastal sage scrub, chaparral, and oak woodlands, but particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground) to provide foraging, aestivation, and living areas for subadult and adult arroyo toads;

5) stream channels and adjacent upland habitats allowing for migration between foraging, burrowing, or aestivating sites, dispersal between populations, and recolonization of areas that contain suitable habitat.

Arroyo toads are not distributed uniformly throughout the critical habitat units. Arroyo toad breeding habitat is patchily distributed along the stream courses, and the same is true of appropriate upland habitat. Some areas primarily provide for migration and dispersal between breeding and foraging habitats or allow for dispersal to additional breeding pools that will accommodate expanding populations. Habitat conditions within streams can change rapidly in response to streamflows and other factors, such as the

development and shifting of sand and gravel bars, and creation and disappearance of pools. Terrace and upland habitats, although more stable than streambed and riparian habitats, may change as a result of rainfall, earthquakes, fires, and other natural events. These factors may cause the habitat suitability of given areas to vary over time, thus affecting the distribution of toads.

Occurrence in the Planning Area

The Arroyo Toad Recovery Plan identifies three recovery units, northern, southern, and desert (USFWS 1999). The Planning Area falls within the southern recovery unit, however, none of the critical habitat units are located within the Planning Area or within San Diego County. The recovery plan does identify two historic arroyo toad collection localities within the Planning Area: San Felipe Creek (Country Club at Borrego on July 25, 1950) and Vallecitos Creek (10 miles southeast of Vallecito Stage Station on April 12, 1954). The former collection record is from private land; the latter locality is within Anza-Borrego Desert State Park. It is possible that suitable habitat for the arroyo toad may exist in one or more isolated canyons in the Planning Area. However, there are only 97 acres of riparian woodland in the Planning Area and the stream reaches that flow through public land do not appear to possess the suite of habitat features needed to support all life stages of the arroyo toad. A search of the California Natural Diversity Database (State of California 2006) revealed no occurrence records for the arroyo toad on BLM-administered lands in the Planning Area.

3.7.1.5 Quino Checkerspot Butterfly

Species

The quino checkerspot butterfly (*Euphydryas editha quino*) was listed as an endangered species in January 1997 in response to population declines associated with: (1) loss, degradation, and fragmentation of habitat due to grazing, urban development, and fire management practices; (2) over-collection and other human disturbance; and (3) naturally occurring events such as fire and weather extremes (USFWS 1997). Historically, the geographic range of the quino checkerspot butterfly extended from Point Dume in Los Angeles County to northern Baja California. At the time of listing, there were only seven or eight known extant populations in the United States. The surviving U.S. populations occur in southwestern Riverside and north-central San Diego Counties. The life cycle of the quino checkerspot butterfly, as summarized in the final rule, includes the following key stages. The adult flight season occurs from mid-January to late April and peaks between March and April. The eggs hatch in about 10 days and the larvae begin to feed immediately. They feed until summer, when their primary host plant, dot-

seed plantain (*Plantago erecta*), dies. The larvae undergo diapause during the dry season and the winter. The larvae develop through four instars, then pupate and emerge as adults in early spring of the following year. The adults live from 4 to 8 weeks.

Habitat

The quino checkerspot butterfly prefers open grassland and sunny openings within chaparral and coastal sage shrublands that contain its larval host plant and adult nectar sources. The principal larval host plant is dot-seed plantain. However, the larvae may also use desert Indian wheat (*Plantago ovata*), Coulter's snapdragon (*Antirhinnum coulteri*), and exserted Indian paintbrush (*Castilleja exserta*). These plants grow in or near grasslands, and may extend into upland shrub communities of sparse chaparral and coastal sage scrub. In the chaparral and coastal sage scrub habitats where this species survives, it is most likely to be found at sites where high densities of the host plants occur. Within such areas, the quino checkerspot butterfly may preferentially select sites where exposure to winter sun is the greatest. The elevational distribution of this butterfly historically ranged from near sea level to about 3,000 feet.

Approximately 13,770 hectares (34,025 acres) is designated as critical habitat in San Diego and Riverside Counties in California (USFWS 2002b). Critical habitat identifies specific areas that are essential to the conservation of a listed species and, with respect to areas within the geographic range occupied by the species, which may require special management considerations or protection. USFWS identified the primary constituent elements required by the quino checkerspot butterfly when designating critical habitat (USFWS 2002b). These are: 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 planty communities within and between habitat patches utilized for quino checkerspot butterfly mating, basking, and movement; 3) prominent topographic features, such as hills and/or ridges, with an open woody or herbaceous canopy at the top. Prominence should be determined relative to other local topographic features.

Threats

As stated in the recovery plan (USFWS 2003), the reasons for the decline and current threats to the species include:

1) urban and agricultural development; 2) invasion by non-native species; 3) off-road vehicle use; 4) grazing; 5) fire management practices; 6) enhanced nitrogen deposition; 7) elevated atmospheric carbon dioxide concentrations; and 8) climate change.

Of these, "urban development poses the greatest threat and exacerbates other threats" (USFWS 2003). It is believed that more than 90 percent of the species previous known range has been lost due to conversion of loss of habitat (D. Murphy pers. comm. as cited in USFWS 2003).

Non-native grasses and other annual herbaceous plant species have invaded much of the historical habitat which can result in loss of dot-seed plantain (*Plantago erecta),* the primary host plant for the butterfly larva. Invasion of these non-natives can occur following fire or other disturbances.

Off-road vehicles can degrade or destroy suitable habitat through soil compaction, destruction of host plants, increase in erosion and fire frequency, destruction of eggs and larva, and ground surface disturbance which can facilitate invasion by non-native plants. However, off-road vehicle use can also temporarily increase the amount of suitable habitat if new trails open up the canopy for use by the butterfly.

Grazing impacts vary based on the timing, duration, and intensity of the activity.

Increased fire frequency can result in a loss of native plant communities, and thus a correlated decline in quino populations. Fires become more frequent as the human population increases and through the increase in habitat fragmentation which exposes a larger amount of flammable non-native plants to the interface between urban and undeveloped lands. Studies have indicated that intervals of 5 years or less create a larger conversion of shrubland to grassland, which enhances the invasion of non-native grasses (USFWS 2003).

Occurrence in the Planning Area

The only known extant quino checkerspot butterfly population on BLM-administered lands occurs outside the Planning Area in Riverside County. A known quino population exists in the Jacumba area on private land. A search of the California Natural Diversity Database (State of California 2006) revealed no occurrence records for the quino checkerspot butterfly on BLM-administered lands in the Planning Area. According to quino checkerspot habitat assessments conducted in spring 2005, suitable habitat is present in some of the chaparral and shrubland habitats particularly on Table Mountain and on Round Mountain (DOI BLM 2005d; Osbourne 2006).

3.7.1.6 Laguna Mountains Skipper

Species

The Laguna Mountains skipper is federally listed as endangered (USFWS 1997). It is a rare subspecies of the widespread two-banded skipper that is endemic to San Diego County and is restricted to Mt. Palomar and the Laguna Mountains.

Habitat

The Laguna Mountains skipper inhabits large open meadows in pine forests. The primary host plant of the larvae is Cleveland's horkelia (*Horkelia clevelandii*). Adults will nectar on goldfields (*Lasthenia* spp.), pentachaetas (*Pentachaeta* sp.), buttercups (*Ranunculus* spp.), and checkers (*Sidalcea* sp.). The Laguna Mountains skipper is a bivoltine species, having two full generations per year. The two adult flight seasons are from early April to late May and late June to late July; the pupa of the second generation diapause until the following flight season. First-generation adults prefer locations with less than 50 percent vegetative cover, and open and rocky areas are important for thermoregulation. Threats to this extremely rare species seem to be cattle grazing, active fire management, and parasitism (Faulkner and Klein 2001).

Critical habitat has been proposed for this species (USFWS 2005c). There are two critical habitat units, Palomar Mountain and Laguna Mountain, which are further divided into seven subunits. The PCEs for critical habitat have been defined by USFWS (2005c) as follows:

1) The host plants, Cleveland's horkelia or sticky cinquefoil (*Potentilla glandulosa*), in meadows or forest openings needed for reproduction.
2) Nectar sources suitable for feeding by adult Laguna Mountains skipper, including goldfields, golden-rayed pentachaeta (*Pentachaeta aurea*), buttercups, and checkers found in woodlands or meadows.
3) Wet soil or standing water associated with features such as seeps, springs, or creeks where water and minerals are obtained during the adult flight season.

This proposed critical habitat designation is designed for the conservation of PCEs necessary to support the life history functions. Because not all life history functions require all the PCEs, not all proposed critical habitat will contain all the PCEs. Each of the areas proposed in this rule have been determined to contain sufficient PCEs to provide for one or more of the life history functions of the Laguna Mountains skipper.

Occurrence in the County Planning Area

The Laguna Mountain Critical Habitat Unit is centered on Laguna Mountain and occurs partially within the Planning Area; however, the unit is located on U.S. Forest Service lands and private property and is not located on any of the BLM-administered lands. There is no known suitable montane meadow habitat for this species on BLM-administered lands within the Planning Area.

3.7.1.7 Unarmored Threespine Stickleback

Species

The unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) was listed as an endangered species in October 1970 in response to population declines associated with habitat loss, competition, predation, and hybridization with other stickleback subspecies (USFWS 1970). Unarmored threespine sticklebacks were historically distributed in coastal streams throughout southern California. At the time the recovery plan was prepared, the distribution was restricted to the upper Santa Clara River and its tributaries in Los Angeles and Ventura Counties, Canada Honda and San Antonio Creeks on Vandenberg Air Force Base, Shay Creek in San Bernardino County, and San Felipe Creek in San Diego County. The San Felipe Creek population, if it persists, is an introduced population (USFWS 1985). Genetic studies involving the

Vandenberg populations and the Shay Creek population indicate that these populations are not *G. a. williamsoni*.

Habitat

Unarmored threespine sticklebacks occupy the slow moving reaches and quiet backwaters of their currently occupied range. Favorable habitats include stream reaches shaded by dense riparian vegetation and open stream reaches that contain algal mats and barriers, such as rocks or fallen logs. Critical habitat was proposed for the unarmored threespine stickleback in 1980 for three stream reaches in Santa Clara River basin and one reach of San Antonio Creek (USFWS 1980). The primary constituent elements of these habitat areas were considered to be "quality and quantity of water flow in the streams, presence of aquatic vegetation and other biological resources on which the species depends, and isolation of the watercourses as regards predator and competitor species." A final rule was never published designating critical habitat for this species.

Occurrence in the Planning Area

The only known record of unarmored threespine sticklebacks in the Planning Area is from a privately owned reach of San Felipe Creek near Scissors Crossing. The San Felipe Creek population, if it persists, is a transplanted population (USFWS 1985). BLM does not manage any of the aquatic habitat along San Felipe Creek in the Planning Area. The public lands that BLM does manage along San Felipe Creek are more than 20 miles downstream in San Sebastian Marsh, where habitat conditions are drastically different from the Colorado Desert Region where the climate is much hotter and dryer.

3.7.1.8 Mexican Flannelbush

Species

Mexican flannelbush is listed as an endangered species by the USFWS (1998) and a rare species by the State of California (2000). Mexican flannelbush is known from fewer than fifteen occurrences, though only observed at two locations in recent years; fewer than 100 plants were estimated to remain as of 1993.

Habitat

This evergreen perennial shrub or small tree in the cacao family (Sterculiaceae) may grow to 23 feet tall, and produces showy orange flowers from March to June. The historical range of this species is the Peninsular Ranges in Orange, San Diego, and southwestern Imperial Counties and northern Baja California, Mexico (Hickman 1993). Mexican flannelbush has been reported in chaparral and closed cone coniferous forest at elevations below 1500 feet on gabbroic, metavolcanic or serpentine soils (CNPS 2001). The only known extant native population in the United States is on Otay Mountain, where it grows in canyon bottoms (State of California 2000, USFWS 1998). The closely related California flannelbush also occurs in the Peninsular Range, but at elevations higher than 3000 feet.

Mexican flannelbush is considered to be declining. The plant is susceptible to increased fire frequency that could lower its potential for reproduction. No specific management plan is in place for this species (State of California 2000).

Occurrence in the Planning Area

The Mexican flannelbush is not known from the Planning Area.

3.7.1.9 Nevin's Barberry

Species

Nevin's barberry was listed as endangered species by the state in 1987 (State of California 2005) and by the federal government in 1998 (USFWS 1998b). There are currently more than 30 occurrences of this species but less than 1,000 individuals (State of California 2005). The largest population, containing more than 200 individuals, occurs in Riverside County from the Vail Lake/Oak Mountain area.

Habitat

This evergreen shrub in the barberry family (Berberidaceae) has prickly compound leaves, can grow 15 feet tall, and bears yellow flowers in March and April (Munz 1974). The species grows in alluvial scrub, coastal sage scrub, chaparral, cismontane woodland and riparian scrub habitats below 2000 feet elevation. Within these

communities Nevin's barberry occurs in sandy or gravelly places, the margin of dry washes, and steep north-facing slopes (State of California 2005, CNPS 2001). Nevin's barberry is considered to be declining due to loss of habitat and lack of reproduction and recruitment at most sites.

Occurrence in the Planning Area

Nevin's barberry occurs in localized populations in the foothills of the Tranverse and Peninsular Ranges in Los Angeles, San Bernardino and Riverside Counties (State of California 2000, CNPS 2001). No extant native populations of Nevin's barberry are known in San Diego County though it may occur in the foothills of the Agua Tibia Wilderness or in Anza-Borrego near Ranchita (Reiser 2001).

3.7.1.10 San Bernardino Blue Grass

Species

San Bernardino blue grass is federally listed as an endangered species (USFWS 1998a). This tufted perennial grass (Poaceae family) grows from creeping rhizomes to a height of about two feet, with leaves in the lower third, and flowering spikes appearing in May and June (Munz 1974). This species is found only around Big Bear in the San Bernardino Mountains, San Bernardino County, and Palomar Mountain and the Laguna Mountains in San Diego County (USFWS 1998a).

Habitat

It occurs in meadows and seeps at elevations of 6,000 to 7,500 feet (CNPS 2001), preferring the drier edge of montane meadows surrounded by coniferous forest (Reiser 2001). San Bernardino blue grass has both male and female plants, and can be distinguished from other blue grasses in its range by its contracted, oblong inflorescence with short lowered branches (Munz 1974).

Occurrence in the Planning Area

This species is known from a few locations within the Planning Area, primarily to the west of the Sawtooth Mountain Wilderness; however, there are no known current

locations on the BLM-administered lands as the public lands do not support meadow habitat surrounded by coniferous forest.

3.7.2 State Listed Species

There are six state listed species found within the Planning Area: barefoot gecko, Swainson's hawk, Laguna Mountains aster, SWFL, least Bell's vireo, Peninsular bighorn sheep (see Table 3-4). The latter three are also federally listed species and discussed above.

3.7.2.1 Barefoot Gecko

The barefoot gecko is state listed as threatened. Its known range occurs along the eastern face of the Peninsular Ranges in San Diego and Imperial Counties and little information is known about its extended range or abundance. Habitat for the barefoot gecko is found in rock cracks and crevices in areas of massive rock formations and outcrops at canyon heads (Murphy 1974). The banded gecko is insectivorous; little else regarding the life history of the banded gecko is known. This species is known to occur on BLM-administered lands within the Planning Area.

3.7.2.2 Swainson's Hawk

Swainson's hawk is state listed as threatened. This raptor formerly nested throughout most of the state and was once described as the most common breeding hawk in the coastal lowlands. Its breeding range in the state is currently limited to the Central Valley, the Modoc Plateau in Modoc County, and small isolated patches of the high desert. Swainson's hawk nests in sycamores and cottonwoods in riparian areas. Swainson's hawk is a migrant in San Diego County in the spring and fall (Unitt 1984). A springtime migration route for Swainson hawks, turkey vultures, and other raptors was discovered about five years ago. A hawkwatch site was established in Borrego Valley and has operated since 2003, utilizing standardized count methods. Totals ranging from 2,300 to 5,200 Swainson's hawks were recorded between 2003 and 2005. Night roost locations have also been identified in Borrego Valley (Cohen and Jorgensen 2006).

The migration count site is twenty miles east of the nearest BLM-administered lands in the Planning Area, but the entire east edge of the Peninsular Ranges is most likely

utilized as a flyway. The flight path of these hawks is not well known, but it is logical to assume that the birds fly over Table Mountain, the In-Ko-Pah Mountains, and the Sawtooth Mountains during migration. Incidental observations have detected smaller numbers of Swainson's hawks migrating through the San Felipe Valley in both spring and fall. This area is bordered by public lands in the San Felipe Hills and the Banner Canyon area.

Food items include caterpillars, grasshoppers, crickets, mice, rabbits, lizards, frogs, toads, and occasionally game birds (Alsop 2001). The main threat to Swainson's hawk populations is pesticide use in agricultural fields.

3.7.2.3 Laguna Mountains Aster

Laguna Mountains aster was listed as Rare Plant in 1979 by the State of California (2005). This biennial to perennial plant in the sunflower family (Asteraceae) has stout grayish stems that grow to three feet tall and blooms with large blue-purple flowers in July and August (Hickman 1993, Munz 1974). Habitat for Laguna Mountains aster is in lower coniferous coniferous forest and cismontane woodlands between 2600 and 8000 feet elevation (CNPS 2001); on Mount Laguna is occurs in relatively open Jeffrey pine (*Pinus jeffreyi*) forest on coarse sandy loam soil (Reiser 2001). It is reported in San Diego County and Baja California, Mexico (CNPS 2001), although reports from Baja California are not verified (Reiser 2001). In San Diego County, it is reported from the Mount Laguna area and near Jacumba (State of California 2006). This species may be threatened by grazing and recreational activities (CNPS 2001). It is not known from BLM-administered lands in the Planning Area and is unlikely to occur.

3.7.3 BLM Sensitive Species

BLM sensitive plant species identified in the Planning Area are Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), delicate clarkia (*Clarkia delicata*), Tecate tarplant (*Deinandra floribunda*), Laguna Mountains alumroot (*Heuchera brevistaminea*), San Diego sunflower (*Hulsea californica*), mountain springs bush lupine (*Lupinus excubitus* var. *medius*), southern jewelflower (*Streptanthus campestris*), and Parry's tetracoccus (*Tetracoccus dioicus*). BLM sensitive wildlife species identified within the Planning Area are chuckwalla (*Sauromalus obesus*), gray vireo (*Vireo vicinior*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), and Townsends's western big-eared bat (*Plecotus townsendii*) (see Table 3-4).

3.7.3.1 Jacumba Milkvetch

Jacumba milkvetch is a perennial herb in the Fabaceae family that inhabits chaparral and montane woodlands between 2,900 and 4,500 feet (CNPS 2001).

3.7.3.2 Delicate Clarkia

Delicate clarkia is an annual herb in the Onagraceae family that inhabits chaparral and montane woodlands between 750 and 3,200 feet in elevation. It is threatened by development and road widening (CNPS 2001).

3.7.3.3 Tecate Tarplant

Tecate tarplant is an annual herb in the Asteraceae family. It blooms from August to October and can be found in chaparral and coastal scrub habitat ranging in elevation from 200 to 4,000 feet. Tecate tarplant is threatened by development (CNPS 2001).

3.7.3.4 Laguna Mountains Alumroot

Laguna Mountains alumroot is a perennial rhizomatous herb that blooms from April to September. It inhabits broadleaved upland forests, chaparral, montane woodlands, and riparian scrub habitats from 4,400 to 6,500 feet in elevation. There are no identified threats for this species; however, it is known from fewer than ten occurrences, which indicates a vulnerability to loss (CNPS 2001).

3.7.3.5 San Diego Sunflower

San Diego sunflower is a perennial herb in the Asteraceae family that blooms from April to June. It can be found in chaparral and lower montane coniferous forest habitats from elevations of 3,000 to 9,500 feet. This species is threatened by the spread of invasive weed species (CNPS 2001).

3.7.3.6 Mountain Springs Bush Lupine

Mountain springs bush lupine is a shrub that inhabits pinyon and juniper woodlands, as well as Sonoran desert scrub habitats. It is a member of the Fabaceae family. It is normally found in areas with elevation ranging from 1,400 feet above sea level up to 4,500 feet above sea level. Mountain springs bush lupine may be threatened by vehicles (CNPS 2001).

3.6.3.7 Southern Jewelflower

Southern jewelflower is a perennial herb in the Brassicaceae family that blooms from May to July. It inhabits chaparral, lower montane coniferous forest, and pinyon and juniper woodland habitats ranging in elevation from 2,900 to 7,500 feet. There are no identified threats to this species; however, it is known in California from fewer than twenty occurrences, which indicates a vulnerability to loss (CNPS, 2001).

3.7.3.8 Parry's Tetracoccus

Parry's tetracoccus is a deciduous shrub in the Euphorbiaceae family that blooms from April to May. It can be found in chaparral and coastal scrub habitats ranging in elevation from 500 to 3,300 feet. This species is threatened by agriculture and development (CNPS, 2001).

3.7.3.9 Gray Vireo

Gray vireos breed in chaparral and pinyon–juniper woodland habitats in the mountains of southern California. They depend on dense stands of mature chamise or redshank (Calpif 2004). It is the rarest breeding bird of the chaparral habitat of San Diego County (Unitt 2004). The southern population of the vireo is most dense south of Laguna Mountain near Buckman Springs; scattered individuals have been found in McCain Valley near Sacatone Springs. Historical range data are incomplete, but it is suspected that brown-headed cowbird nest parasitism has limited the vireo to large, undisturbed tracts of mature chaparral, away from cowbird foraging habitat. Because gray vireo populations are so localized, they are very susceptible to fire. The vireo is likely to avoid low chaparral from frequent fires; likewise catastrophic fires resulting from fire suppression can also eliminate large tracts of habitat (Unitt 2004). This species is known to occur on BLM-administered lands in the Planning Area.

3.7.3.10 Small-footed Myotis

Small-footed myotis (*Myotis leibii*) is the smallest member of the genus *Myotis*, barely reaching 3 inches (76 mm) in length and having a wingspan of less than 9 inches (229 mm). As its name implies, in addition to being small, this bat has especially small feet relative to its body size. Small-footed myotis use a variety of roost sites throughout the year. In winter, most are found in caves but many may occur in rock shelters and fissures in cliffs, and there are several records of them using old mines and quarries (Bat Conservation International 2006). They are usually found singly, wedged back into a recessed area in the rock. Despite their small size, these bats seem to prefer cold sites that reach temperatures just above freezing as hibernation sites. The small-footed myotis is an insectivore, and will often feed near forest edges. Sometimes the small-footed myotis will catch insects with a pouch-like compartment in its tail membrane (Bat Conservation International 2006). This species is known to occur on BLM-administered lands within the Planning Area (San Diego Natural History Museum 2006).

3.7.3.11 Long-eared Myotis

Long-eared myotis (*Myotis evotis*) are found predominantly in coniferous forests, typically only at higher elevations in southern areas (between 7,000 and 8,500 feet). They roost in tree cavities and beneath exfoliating bark in both living trees and dead snags Long-eared myotis capture prey in flight, but also glean stationary insects from foliage or the ground. Their main diet appears to consist of moths (Bat Conservation International 2006). This species is suspected to occur on BLM-administered lands within the Planning Area.

3.7.3.12 Townsend's Western Big-eared Bat

The Townsend's western big-eared bat occurs in the coastal regions of California. It is found in a variety of communities including coastal conifer and broadleaf woodlands, grasslands, deserts, and meadows. Throughout most of its geographic range, it is most common in mesic sites (Kunz and Martin 1982; Williams 1986). In San Diego County, the Townsend's western big-eared bat is most commonly found in the foothills and mountain canyon areas in oak woodland, pine-oak woodland, juniper woodland, and chaparral habitats. Townsend's western big-eared bat roosts in caves, mines, tunnels, buildings, or other human-made structures and may use different locations as day roosts, night roosts, maternity roosts, and for hibernation. Their diet consists mainly of small moths, but they also will prey upon beetles and soft-bodied insects (Harris 1983). The decline of the Townsend's western big-eared bat is attributed to roost abandonment brought on by human activities. This species is known to occur on BLM-administered lands within the Planning Area.

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3.8 Wildland Fire Ecology and Management

When the Planning Area Fire Management Plan (FMP) was approved in 1981, fire management objectives and strategies were not given much consideration. The document fails to give any attention to fire management issues other than the use of prescribed fire for range and wildlife habitat improvement.

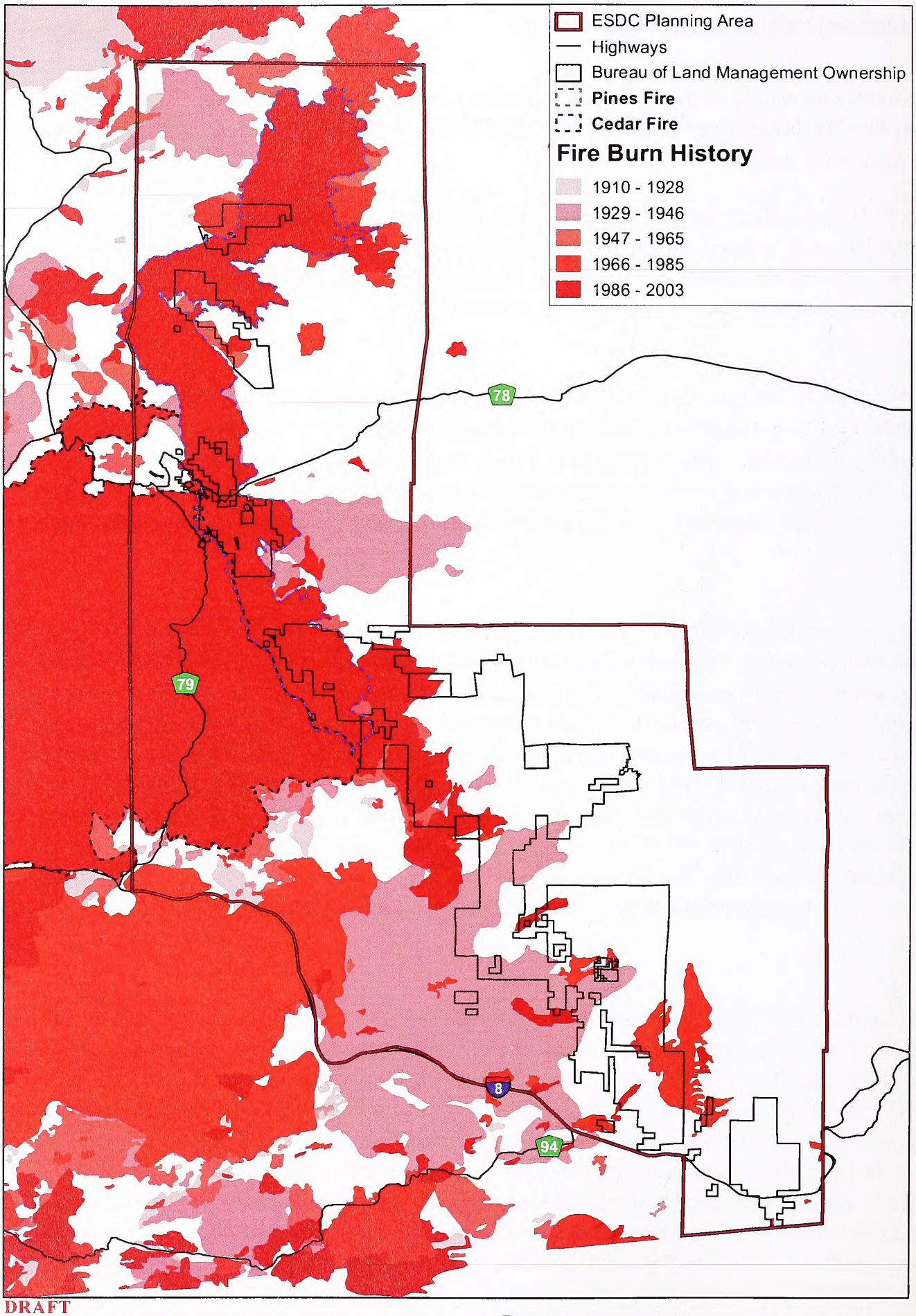
The current FMP for the California Desert District (CDD) was developed in 1998. The FMP was designed around a "fire management zone" (FMZ) concept based on distinct vegetation communities and the strategies for fire suppression within each of those fuel types. The intent was that Land Use Plans decisions for resource protection would be the driving factor to identify objectives and constraints for fire suppression activities.

The FMP categorized Planning Area as FMZ 6, which is a California Department of Forestry (CDF) Direct Protection Area (DPA). This means that CDF is the primary fire protection agency for BLM-administered lands in the Planning Area. Their aggressive fire policy objective is to suppress all vegetation fires of 10 acres or less upon initial attack, based on "assets at risk analysis" which favors protection of structures in the urban interface. CDF and BLM operate under a Cooperative Fire Protection Plan which states that CDF is to consider BLM's resource protection standards to select the least cost/least damaging suppression strategy. On all vegetation fires within the Planning Area, BLM is required to send a resource advisor to work directly with the CDF incident commander to ensure resource values are fully protected or at least mitigated.

The Planning Area is situated in a transition zone between two highly flammable fuel types (chamise/semi-desert chaparral and desert scrub communities). Combined with a scattered heavy grass component and dry climatic conditions, this fuel type is characterized by extreme fire behavior potential throughout most of the year. The potential for large fire occurrence is a constant threat for private communities in the area. Past fire history has shown that vegetation fires that become well-established in the heavier chaparral fuel types under strong west wind conditions can usually make significant runs down into the desert canyons. An example was the Pines Fire in 2002. It was the largest west–wind driven fire in San Diego County history, at the time, and consumed over 61,000 acres, burning numerous homes in Julian and Ranchita, and 15,000 acres of BLM land. A trend in fire starts due to increased urbanization along the Interstate 8 corridor, in McCain Valley and the Julian/Banner Grade area is a major concern to fire agencies. The mountain ranges in eastern San Diego County are

continually hit with lightning during the summer months when monsoonal flows move up from Mexico. Figure 3-8 shows the fire burn history within the Planning Area including the location of the Pines Fire.

The BLM and CDF have recently developed fuels treatment plans along travel corridors and adjacent to communities in McCain Valley and Julian. Both agencies work together under Community Wildfire Protection Plans (CWPP) to collaborate with private landowners for a protection strategy for the wildfire.



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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Sacramento
Planning Area
El Centro

U.S. DEPARTMENT OF THE INTERIOR
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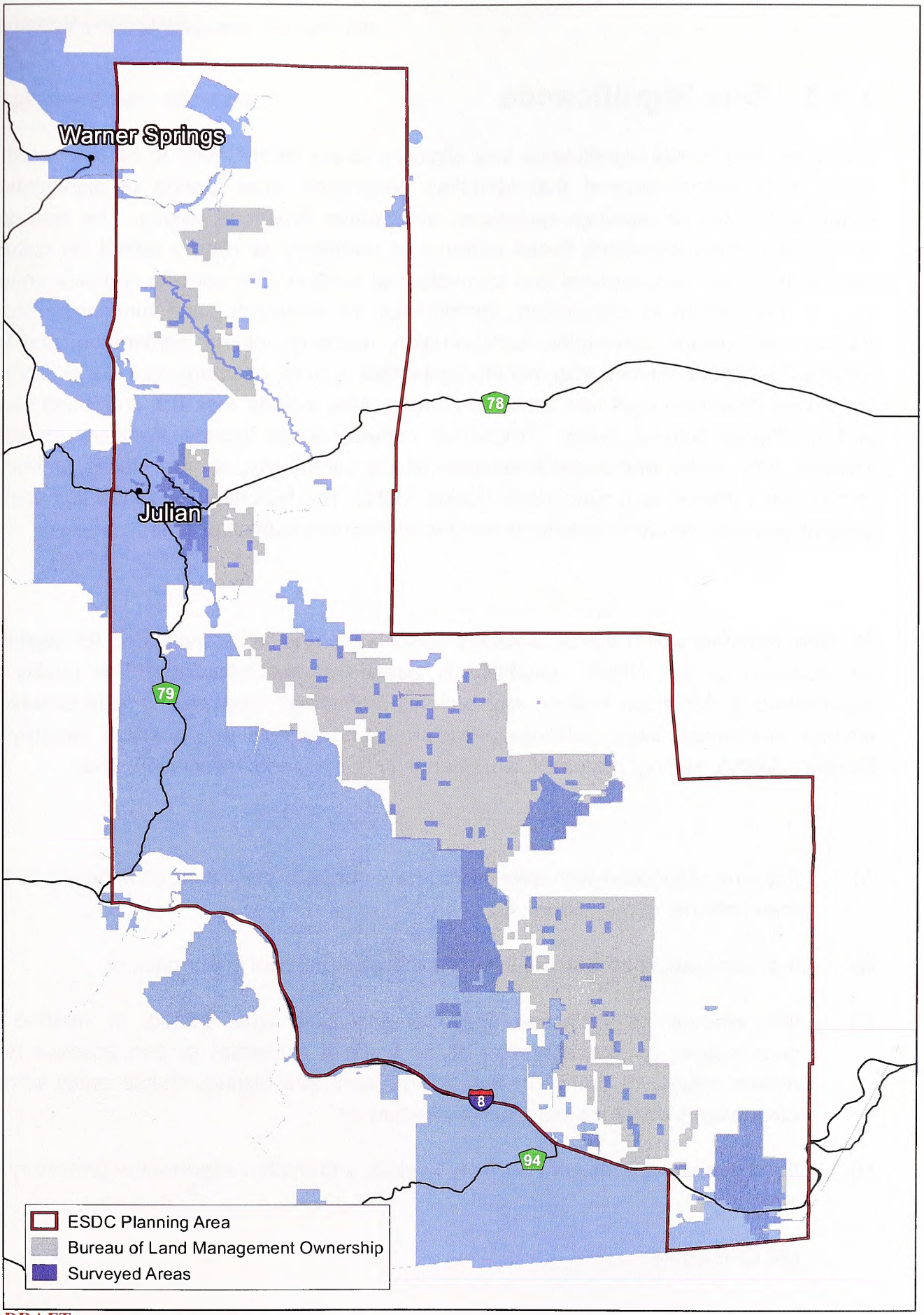
FIGURE 3-8: Fire Burn History



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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Planning Area
El Centro

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FIGURE 3-9: Areas Surveyed for Cultural Resources

3.9.1 Site Significance

Under the NHPA, site significance and eligibility to the NRHP need to be evaluated in terms of a historic context that identifies geographic area, period of significance, historical themes or research questions, and Native American values. The historical context describes significant broad patterns of prehistory or history based on cultural themes and their geographical and chronological context. Site-specific contexts should include time period of occupation, identification of occupants, and function. Historic themes may include agriculture, transportation, ranching, mining, exploration, and the military. Prehistoric themes may include settlement system, economy, spirituality, and so on. Native American land use areas of concern may include rock art, cremation sites, and traditional cultural areas. Traditional cultural areas include traditions, beliefs, lifeways, arts, crafts, and social institutions of any community, not just Native American communities (Parker and King 1998; Parker 1985). The historical context is sometimes used to generate research questions needed to evaluate individual sites.

All sites identified within the BLM-administered lands should be evaluated for eligibility for inclusion to the NRHP. Eligibility is based on the following: "The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and:

A) that are associated with events that have made a significant contribution to the road patterns of our history; or

B) that are associated with the lives of persons significant in our past; or

C) that embody of distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) that have yielded, or may be likely to yield, information important in prehistory or history."

(36 CFR 60.4)

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3.9 Cultural Resources

Figure 3-9 depicts areas within the Planning Area that have been surveyed for cultural resources. It shows that most of the Planning Area has not been surveyed. It is likely that there are numerous sites in this area that have not been identified. Table 3-5 summarizes the cultural resources recorded within the entire Planning Area. Appendix G provides more detail on the recorded cultural resources identified on the BLM-administered lands within the Planning Area in terms of site characteristics, date of recordation, and National Register of Historic Places eligibility status.

TABLE 3-5
SUMMARY OF CULTURAL RESOURCES WITHIN THE PLANNING AREA

Site Attributes	BLM Total Sites (653)*	CA Dept. of Parks & Rec. Total Sites (1,588)*	Cleveland National Forest Total Sites (259)*	Local Government Total Sites (2)*	Other Total Sites (1122)*
Bedrock milling	243	889	219	2	524
Ceramic	318	523	107	1	383
Lithic	363	494	122	0	482
Ground Stone	149	267	42	0	159
Cairn	31	43	1	0	23
Rock Ring	6	53	2	0	21
Rock Shelter	90	85	7	0	44
Rock Alignment	11	22	5	0	16
Cleared Circle	1	72	0	0	2
Rock Art	22	32	1	0	6
Hearth	187	301	3	0	136
House pit	2	29	5	0	5
Human Remains	9	13	3	0	6
Historic	33	137	20	0	111
Other	57	119	5	0	59

* Some sites have multiple attributes and thus may be counted more than once in the table.

A NRHP eligible site must meet one or more of the above criteria and have integrity appropriate to the criteria. In most cases, prehistoric sites qualify under Criterion D; Historic Period properties often qualify for listing under Criterion A, B, or C. Integrity varies in terms of the criterion under which the site is evaluated. For example, an archaeological site evaluated under Criterion D would need to have the potential to provide meaningful scientific research data. If the site has been disturbed or damaged to the extent it cannot do this, it would lack integrity. Historic buildings, on the other hand, typically need to be in their original location and be relatively unmodified or restorable to have integrity under Criterion A, B, or C.

Under special consideration, some heritage resources not otherwise eligible may be considered eligible. These include religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties less than 50 years old. These special considerations include:

a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or

d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g) A property achieving significance within the past 50 years, if it is of exceptional importance.

Prehistoric and historic resources should be evaluated in order to:

a) Determine site or structure type, appropriate criteria of eligibility and level of integrity so that an appropriate treatment plan can be developed;

b) Determine the horizontal and vertical surface extent of each site, as well as information regarding internal variability; and

c) Determine, which sites are significant and warrant protection and consideration in the planning process.

Until site significance is determined, all prehistoric and historic resources on BLM-administered lands should be managed under the assumption that they are eligible for the NRHP. A preliminary level of significance may be assigned for a site based on surface observations. Confirmed level of significance is assigned, when the appropriate evaluation program, e.g., such as surface artifact collection or subsurface testing, has been completed. Evaluation of historic structures and historic archaeological sites typically requires archival research, including a literature review and historic maps (see Parker 1985).

3.9.2 Prehistoric Context

The prehistory of eastern San Diego County, California may be divided into four major temporal periods: Early Man, Paleoamerican, Archaic, and Late Prehistoric. These time periods have regional expression through various regional archaeological complexes or archaeological cultures. These time periods and archaeological complexes are outlined below.

3.9.2.1 Early Man

A very early time of human occupation is posited for the Greater Southwest. The archaeological complex associated with this time frame is called the Malpais Complex. The term Malpais was first coined by Malcolm Rogers to refer to very heavily patinated and weathered artifacts that he reasoned were quite old. Rogers later dropped the term and reclassified these materials as San Dieguito I (Rogers 1939). The term was later resurrected by Julian Hayden to refer to assemblages of very heavily varnished choppers, scrapers, and other core-based tools typically found on old desert pavement

areas. Malpais materials are posited to predate the San Dieguito materials and some scholars argue for a date as old as 50,000 years before present (B.P.)(Hayden 1976).

3.9.2.2 Paleoamerican Period

The earliest part of the Paleoamerican Period in the region is occupied by the Fluted Point Tradition. The Fluted Point Tradition in the far West contains many of the artifact types found in the assemblage of the San Dieguito/Lake Mojave Complex: flaked stone crescents, gravers, perforators, scrapers, and choppers (Moratto 1984:93). Fluted Point Tradition sites are typically found along fossil streams and lakeshores in California. While Fluted Point sites are associated with big-game hunting on the Great Plains and Southwest, in California, they appear to be generalized hunting and gathering sites (Morrato 1984:81).

The San Dieguito-Lake Mojave Complex is thought to have existed approximately 10,000 to 7,000 years ago during a time of greater effective moisture than the present in southeastern California (Warren and Crabtree 1986). The assemblage consists of heavy percussion, core and flake-based tools: domed and keeled choppers, planes, and scrapers. One also finds light-percussion flaked spokeshaves, flaked-stone crescentics, and leaf-shaped projectile points. In the Mojave Desert, one also finds the distinctive Lake Mojave and Silver Lake stemmed projectile points. Fluted points are also occasionally found on Lake Mojave-San Dieguito surface sites (Moratto 1984).

3.9.2.3 Archaic Period

The Archaic period is characterized by two archaeological complexes. The earliest is the Pinto complex (7000 to 4000 B.P.); the other is known as the Amargosa or Gypsum complex (4000 to 1500 B.P.).

Beginning with the Pinto complex, there is an apparent shift to a more generalized economy and a gradually increased emphasis on the exploitation of plant resources. Metates are frequently found for the first time in the cultural sequence (Amsden 1935:33). The groundstone artifacts associated with this complex are typically thin slabs with smooth, nearly flat, highly polished surfaces. They do not have the distinct basin typical of somewhat later times (Amsden 1935:33). Projectile points are still relatively abundant in the Pinto complex suggesting a continued dependence on big game

hunting. The mixed core-based tool assemblage of the Pinto complex may indicate a range of adaptations to a more diversified set of plant and animal resources brought about by a generalized desiccating trend in the West, occasionally punctuated by more mesic times.

The following Gypsum complex is characterized by the presence of fine, pressure-flaked Elko and Humboldt series and Gypsum-type projectile points. The assemblage also contains leaf-shaped points; rectangular-based knives; flake scrapers; T-shaped drills; and occasional large scraper-planes, choppers, and hammerstones. Manos and basin metates become relatively common and the mortar and pestle were introduced late in the complex (Warren 1984:416). The fluorescence of tool types and the refinement of milling equipment suggest a more generalized and effective adaptation to desert conditions in the Greater Southwest. From the Great Basin and the Mojave Desert, one finds pictographs of mountain sheep and rabbits and especially in the Grand Canyon area, one there are spit-twig figurines of mountain sheep suggesting a widespread hunting ritual complex from these times.

3.9.2.4 Late Prehistoric Period

The Late Prehistoric period in the Colorado Desert begins at approximately 1500 B.P. (A.D. 500) and is referred to as the Patayan Pattern. Along the southern California coast, the period is characterized by the Cuyamaca Complex. They are closely related. Both are characterized by marked changes in economic and settlement systems. Paddle and anvil pottery was introduced, probably from Mexico by way of the Hohokam culture of the middle Gila River area (Schroeder 1975, 1979; Rogers 1945). Along the Colorado River a shift from hunting and gathering to floodplain horticulture took place in this period. Smaller projectile points occur, heralding the appearance of the bow and arrow at about 1300 B.P. (A.D. 700) (Heizer and Hester 1978). During this period, burial practices also shifted from inhumations to cremations. Other culture traits generally associated with this period include increasingly elaborate kinship systems; increased rock art, including the famous geoglyphs or ground figures found along the Colorado River; and expanded trading networks (Warren 1984). The greatly increased number of Late Period archaeological sites suggests an expansion of population.

3.9.3 Ethnographic Context

The people whose traditional territory occurred, at least in part, within the Planning Area include the Cahuilla, the Kumeyaay, and the Luiseño. Short descriptions of their individual ethnographic context are outlined below.

3.9.3.1 The Cahuilla

Traditional Cahuilla territory encompassed the northern portion of the Planning Area Their territory covered the northern half of the Salton Sink, from the vicinity of the Riverside/Imperial County line northwest to the vicinity of Riverside. It encompassed the San Jacinto, Santa Rosa, and Orocopia Mountains, the southwestern slope of the San Bernardino Mountains, and the northeastern foothills of the Palomar Mountains (Bean 1978:575-576; Kroeber 1925:693-694). The Cahuilla language belongs to the Cupan subgroup of the Takic family of the Uto-Aztecan Stock (Bean 1978:575; Shipley 1978).

The Cahuilla consist of three subgroups: the Mountain, the Pass (or Western), and the Desert divisions (Bean 1972; Hooper 1920:316; James 1960; Strong 1929). The Desert Cahuilla lived in the Lower Sonoran Life Zone, an arid environment ranging from foothill areas of about 3,500 feet to below sea level near the northern shore of the Salton Sea (Bean and Saubel 1972:11-12; Hooper 1920:316). Oral tradition seems to suggest that some of these people migrated to the desert from foothill and mountain areas (Strong 1929:38). Legends also tell of a time of flooding of the entire Salton Sink, which drove their ancestors up into the mountains. This was probably what we now call Lake Cahuilla (Strong 1929:37). After the lake dried up, the Desert Cahuilla moved back down to their present localities (Strong 1929:37).

Permanent villages were located in places that provided convenient access to water and subsistence resources (Bean 1972:73, 1978:575; Bean and Saubel 1972; Strong 1929:38,43). Settlements would have to be moved from time to time because of changes in water availability, flash floods, or intergroup strife (Bean 1972:35,78; Strong 1929:38). Cahuilla subsistence focused on gathering plant foods. The most important desert subsistence plants included cactus fruits, palm dates, agave root, seeds from sages, grasses and other plants, and the pods of screwbean and mesquite. Stalks and heads of agave were harvested in spring. Baked in rock-lined pits, agave was highly nutritious and had a sweet taste reminiscent of molasses (James 1960:57). Screwbean and mesquite pods, the most important staples, were harvested in late summer (Hooper 1920:356). Acorns were harvested in fall. The preferred species, black oak *(Quercus*

kellogii), was called *qwinyily.* In southern California, it grows from about 3,000 feet to 8,000 feet in elevation. Acorns were dried, then ground in stone mortars, sometimes with basketry hoppers. To leach the bitter tanic acid out, meal was placed in large shallow baskets and warm water was repeatedly poured over it.

Hunting contributed to the diet in a minor way. It was focused on small game, primarily rabbits. These were taken with bow and arrow or rabbit stick *(macana).* Bows were made of mesquite or desert willow. Arrows were made of carrizo or wood. Some were tipped with stone points for hunting big game (Hooper 1920:358-359; James 1960:58; Kroeber 1908:58). Deer and bighorn sheep were taken by stalking and the use of hunting blinds.

Cahuilla cosmology like that of other southern California Shoshoneans, focused on a concept that would translate as knowledge/power/energy. It was called in Cahuilla *ava* (Bean 1972:161, 1978:582). This *ava* was in itself, neither good nor evil, but it was unstable, so that one had to exercise caution in somewhat unpredictable cosmic and natural environments. People have *ava,* and so do many plants, animals, and other natural phenomena like wind, stars, springs, and mountains. One could acquire more *ava* by respecting tradition; leading a careful, orderly life; and conducting ritual properly. Many natural places contain spirit beings. These are active participants in tradional Cahuilla life. Special places such as springs, certain mountains, certain rocks, etc. have special spiritual significance (Bean 1972:170).

3.9.3.2 The Kumeyaay

It is useful to think of the Kumeyaay as three closely related groups based on differences in dialects and environment (Langdon 1970, *1975;* Luomala 1978; Spier 1923) and geography (Barker 1976; Gifford 1931). These are the northern Kumeyaay or Ipai, the southern Kumeyaay or Tipai, and the Desert Kumeyaay or Kamia. The northern and southern Kumeyaay were subjugated by the Franciscan missionaries and Spanish imperial forces at San Diego, so they were formerly known as Diegueño. They occupied mountain and coastal areas of what is now San Diego County. The term Kamia, like Kumeyaay, has been used to refer to all three divisions (e.g., Forbes 1965) but now is most commonly used to refer only to the desert division. Traditional Ipai-Tipai territory extended over the southern two-thirds of San Diego County, from Agua Hedionda (south of Carlsbad) south to some 20 miles below Ensenada, Baja California Norte. On the west, their territory started at the Pacific Ocean and extended to the mountains of the Peninsular Range and into the desert just beyond (Cline 1984; Gifford 1931:1-2; Spier

1923:298). Most of the Planning Area is in traditional Tipai territory. Ipai territory was north of a line from northern San Diego Bay that extended east-northeast, passed just south of the community of Julian through Banner. From there it followed approximately where Highway 78 is today and ended near San Felipe Creek (Luomala 1978:593). The Ipai, Tipai, and Kamia speak languages of the Yuman family of the Hokan stock. These languages are very closely related to Quechan and other River Yuman languages (Shipley 1978).

Subsistence for mountain and valley people focused on gathering plant foods. Acorns were particularly important. These became ripe in September and fell to the ground in October (Luomala 1978:600; Spier 1923:334). They were stored until February at which time they were dry enough to pound into meal. Seeds from sages, grasses, and other plants were also dietary staples. Agave (mescal) was also an important food found along the arid eastern slopes of the Peninsular Range. Hunting contributed to the diet in a minor way. It was focused on small game, primarily rabbits. These were taken with bow and arrow or rabbit stick *(macana)*. Hunting of large game was somewhat less important, with deer and bighorn sheep taken on occasion.

Some Kumeyaay lived in two seasonal settlements during the year. For example, the *Kwamai* (or *Kwaaymii)* clan spent their summers in the Laguna Mountains and their winters in the desert to the east a few miles (viz. Mason Valley, Vallecito Creek, Carrizo Creek)(Cline 1984:12-19; Spier 1923:306). This bi-polar settlement system did not occur in the southern portion of the Planning Area, e.g., Jacumba, Manzanita, Campo, where the terrain consists of chaparral-covered hills rather than distinct mountain and desert environments.

People residing in the Peninsular Mountains (e.g., the *Kwamai)* would often travel to Kamia villages in Imperial Valley to trade (Cline 1984; Gifford 1931; Spier 1923). Coastal groups traded salt, dried seafood, dried greens, and abalone shells to inland and desert groups for products such as acorns, agave, mesquite beans, and gourds (Almstedt 1982:10; Cuero 1970:33; Luomala 1978:602).

The Kumeyaay consisted of autonomous bands; they had no tribal organization, tribal name, or band names. People identified themselves by clan names (which were also the surnames of clan women) and by places that clans traditionally occupied (Cline 1984; Luomala 1978; Spier 1923).

3.9.3.3 The Luiseño

Traditional Luiseño territory covered the northern one third of San Diego County. This was north of a line from Agua Hedionda on the coast running east-northeast passing north of Lake Henshaw and continuing along the east fork of the San Luis Rey River.. East of Cañada Aguanga, the Planning Area is in Cahuilla territory. The Luiseño are the most southwesterly of the Shoshonean or Uto-Aztecan speakers. They are members of the Takic branch of this large language family. Takic, after the word for person, also includes Cahuilla, previously discussed and a number of other tribes in southern California (Bean and Smith 1978:588; Kroeber 1925; Shipley 1978; Sparkman 1908:189; Strong 1929:274).

The Luiseño lived in semi-sedentary, politically autonomous villages or rancherias. Most rancherias were the seat of a clan, although it is thought that aboriginally some clans lived at more than one rancheria and some rancherias contained more than one clan. The most basic social and economic unit among the Luiseño was the patrilocal extended family. The extended family unit is still important today, even in the face of massive social and economic change. Within the family, there was a basic division of labor based upon gender and age, but it was not rigid. Women made pottery, basketry, gathered plant resources, ground seeds and acorns, prepared meals, and so on. Men hunted, fished, helped collect and carry acorns and other heavy tasks, and made tools for the hunt. Old women were active in teaching and caring for children while younger women were busy with other tasks. Older men were involved in politics; ceremonial life; teaching young men; and making nets, stone tools, and ceremonial paraphernalia (Bean and Shipek 1978:555).

Their settlement system typically consisted of two or more seasonal villages with temporary camps radiating away from these central places. Padre Boscana writing at San Juan Capistrano in 1813, describe the bipolar settlement system: "In the winter they resided in one place, and in summer in another. This was general among them, excepting in the case of those tribes located on the sea coast who seldom moved because their maintenance was derived from the sea." (Hanna [Boscana 1813] 1933:65).

A wide range of tools were made of locally available and imported materials. A simple shoulder-height bow was utilized for hunting. Arrows had either fire-hardened wood or flaked stone points. Numerous other flaked stone tools were made including scrapers, choppers, flake-based cutting tools, and biface knives. Preferred stone types were

locally available metavolcanics, cherts, and quartz. Obsidian was imported from the deserts to the north and east.

Groundstone objects include mortars and pestles typically made of locally available, fine-grained granite. Simple basin metates and cobble manos were also used for grinding grass seeds and other items. Shaped trough metates were not known until the arrival of the Spanish. Mortars and pestles were primarily used for processing acorns (Kroeber 1925:653; Sparkman 1908:208).

As previously described, acorns, the most important staple among inland groups, are quite bitter with tannic acid, and must go through a labor-intensive leaching/grinding process before they can be eaten. Game was a major source of protein. In addition, animals provided sinew and bone for tools, skins and, in particular, rabbit fur for blankets. Among groups right along the coast, seafood was a major protein source (Bean and Shipek 1978; White 1963). Deer were both stalked and driven. Small game was taken with a curved throwing stick (the Spanish term *macana* is often used); nets were utilized for rabbit drives. Deadfall and spring-pole traps were utilized for small game as well (Bean and Shipek 1978; Sparkman 1908).

3.9.4 Historic Context

The first Spanish exploration of southern California began when Alarcón sailed up the Colorado River, probably to the confluence of the Gila or the Yuma area in August of 1540 (Forbes 1965:88). In September 1540, Melchior Diaz marched from Sonora, Mexico, to the confluence of the Colorado and Gila Rivers (Lawton 1976:46). Cabrillo sailed up the Pacific coast in 1542 and discovered San Diego Bay, which he called San Miguel. In 1605, Juan de Oñate, the govenor of New Mexico, reached the Colorado River by way of the Bill Williams Fork about 15 miles north of present-day Parker. He proceeded south and reached the vicinity of Yuma. Almost a century later, the Jesuit Father Eusebio Kino left Sonora to visit the Yuma area in 1701 and returned to Yuma in 1702.

In 1769, the first European settlement of Alta California occurred with the founding of the mission and presidio at San Diego. Plans were made for a chain of other missions in Alta California, so an overland route linking Sonora with Alta California took on imperial significance. The Franciscan Padre Francisco Garcés began his first journey from San

Xavier del Bac near Tucson in 1771 following Padre Eusebio Kino's old trail. He explored the Colorado River delta area, then headed north to become the first European to see what we now call the Colorado Desert. Garcés, aware of Juan Bautista de Anza's interest in opening an overland route to Alta California, contacted Anza upon his return (Forbes 1965; Pourade 1971:12-13; Lawton 1976:46).

The Spanish mission system used forced Native American labor to produce goods and provide services needed for European settlement. The mission system introduced horses, cattle, sheep, and agricultural goods and implements and provided new construction methods and architectural styles (Hurtado 1988). Also with the arrival of the Spanish came devastating epidemics and very high death rates. According to available mission records, the worst year was 1806 when a measles epidemic hit southern California. An estimated 33.5 percent of the Indian population along the coast died (Cook 1976:424).

The first Spanish explorer to actually enter the Imperial Valley was Pedro Fages, who rode along the northwestern edge of the Colorado Desert while looking for deserters from San Diego in 1772. This would have been in the Planning Area. It is difficult to trace his route from his account, but he apparently entered the desert on an Indian trail he discovered which led through Oriflamme Canyon to Carrizo Creek and the desert floor (Bolton 1931:214; Lawton 1976:47; Pourade 1961;53-54).

The first Anza expedition (guided by Padre Francisco Garcés) set out from Tubac, Sonora, in January 1774 and arrived at Yuma a month later. Avoiding the Algodones Dunes west of Yuma, the expedition headed south to Laguna de Merced, then west to what is now Imperial Valley west of Signal Peak. Anza's route then went to what he called Santa Rosa de las Lajas (Yuha Spring). From there the expedition continued north and went through what is now the community of Borrego Springs and north to San Gabriel (Forbes 1965). Northwest of Borrego Springs, the Anza route briefly entered the Planning Area. On October 23, 1775, the second Anza expedition set out from Tubac and utilized the same general route through Borrego Springs and went on to found what became San Francisco. Over the next few years, a number of parties of Spanish pioneers utilized this route, but in 1781 the Quechan rose in revolt against the two recently established Spanish settlements near Yuma. Garcés and most of the soldiers and settlers were killed (Forbes 1965:201-205). The route was abandoned. In the 1820s, Mexicans began using the route again, and it became known as the Sonora Road.

In 1782, returning from a failed military campaign to subdue the Quechan after the revolt, Fages again used this trail through Oriflamme Canyon, this time to reach San Diego without having to go around by way of Warner Springs (Pourade 1961:52-54). In 1785, Fages also explored a southern pass through the mountains from Jacumba down to the desert (Forbes 1965:222-224; Pourade 1961:62-54).

In 1823, the route between Yuma and the coast was reopened after a hiatus of 40 years. In 1824-1825, Santiago Arguello discovered a shortcut on the Yuma Route via the Carrizo corridor (Warren *et al.* 1981:85) and Warner's Pass (Wirth Associates, Inc. 1978:84). The route was used as a mail route in the 1820s, and by Mexican immigrants and fur trappers in the 1830s (Wirth Associates, Inc. 1978:84).

Cattle ranching dominated the economy during the Mexican Period and the development of the hide and tallow trade with New England merchant ships increased during the early part of the Mexican Period. Native American communities continued to decline, particularly those close to the coast, while Indians moved to inland areas, such as the Planning Area, to avoid contact with the Californios. However, some Native Americans found jobs as *vaqueros* (buckaroos), laborers, gardeners, and housekeepers. While the nineteenth-century West has been depicted by Hollywood as cowboys versus Indians, in California, the cowboys were the Indians (Rolle 1998:57). Don Juan Warner apparently paid his Cupeño and Luiseño cowboys poorly and subjected them to frequent floggings (National Park Service 2004).

By 1829, U.S. President Andrew Jackson tried unsuccessfully to purchase territories of the American Southwest from Mexico. In the 1830s and 1840s an increasing number of Americans were settling in Texas, California, and other parts of the Southwest, and the United States continued to look with interest on the region. Tensions between Americans and Mexicans grew, and in Texas, there were military skirmishes in the late 1820s and the 1830s until, in 1836, Texas declared its independence. Mexico did not recognize the independence of Texas, and armed disputes continued (Texas State Historical Association 2004).

In February 1846, Texas was annexed by the United States, which ended the Republic of Texas and triggered the Mexican-American War (Texas State Historical Association 2004). Americans in northern California revolted and declared an independent California

Republic. The Republic ended only three weeks later, when U.S. naval forces took Monterey on July 7, 1846.

During the Mexican-American War, American military forces in 1846 to 1847, guided by Kit Carson and commanded by General Stephen Kearney, followed the Yuman Route, going by the Carrizo Corridor and Vallecito (Warren *et al.* 1981:86). When the Mormon Battalion passed through, they widened Box Canyon for wagons (Wirth Associates, Inc. 1978:91). Notwithstanding the considerable military success of the *Californios* in southern California under Andres Pico, brother of the Mexican governor, the California part of the war ended in Los Angeles on January 13, 1848. The military conflict in California was largely irrelevant to the outcome of the war, however. The U.S. military had landed deep in Mexico at Vera Cruz in 1847 and in a few months captured Mexico City. The treaty of Guadalupe Hidalgo was signed on February 2, 1848. Ironically, much of the Spanish and Mexican conquest of the American Southwest had been in fruitless quest of gold. However nine days prior to the signing of the Treaty of Guadalupe Hidalgo, one of the largest discoveries in the world was made in central California, but was kept secret for almost two months.

With the advent of the California Gold Rush in 1849, thousands of gold seekers traveled on the Yuma Route through the Carrizo Corridor, San Felipe Valley, and Warner's Pass and were assisted along the way by U. S. military escorts and temporary camps established at important water sources along the trail. In 1854, the U.S. Army located a supply depot at Vallecito; a relay station for semi-monthly mail service was operated there by Swacaffer and Warnock of San Diego; in 1857, a stop on the San Antonio and San Diego mail line was there; and from 1858 to 1865 a stop on the Butterfield route was located there (Wirth Associates, Inc. 1978:91; Warren and Roske 1981:7-8).

In 1854, the Oriflamme Canyon route pioneered by Pedro Fages in 1772 was used as the main route between San Diego and the east. It was used as a mail route by Swycaffer and Warnock beginning in 1857 and by the San Antonio and San Diego Mail Line also known as the "Jackass" mail," in the same year.

What was known as the Hay Route for Lassiter's Ranch in Vallecito was constructed to climb rugged Oriflamme Canyon between Vallecito and Mason Valley to the west. Hay for stagecoach and wagon teams was thus available for Lassiter's station on the

Butterfield Stage Route. The Hay Route extends west from the trail between Box Canyon and Mason Valley, which is also the so-called "Jackass Mail Route".

Another branch of the Yuma Route went to San Diego via Mountain Springs. In 1873, a military telegraph line was installed from San Diego to Fort Yuma running through Mountains Springs paralleling a pack route which had been in use since 1851. A military road was constructed parallel with the telegraph road. Warren and Roske (1981:9) provided information which indicates the telegraph line and two routes went through the Table Mountain ACEC.

Small ranches were established throughout the eastern mountains of San Diego County beginning in the late-1860s. During this period Native Americans produced a significant proportion of San Diego County's total agricultural output. They also contributed much of the labor on the ranches and farms (Wirth and Associates, Inc. 1978:94).

The first McCain Ranch was established in 1868. Although predominantly cattle ranchers, the McCains also produced grain for feed and dairy products to supply the Julian Gold Rush (ASM, Affiliates 1985:85). The arid climate of eastern San Diego County necessitated that cattle be wintered in Mason Valley, Vallecito, and Canebreak Canyon, and driven up the mountains of Cuyamaca and Laguna in the summer months. James Mason, Chatham Helm, and Paul Sentenac settled during the 1880s and engaged almost exclusively in cattle ranching. Other cattle ranchers were Ralph Benton, Archie Chillwell, Bert Moore, and Sam Thing. Native American trails over the mountains were the routes used for taking cattle into the Colorado Desert (Wirth Associates, Inc. 1978:105). The Taylor Grazing Act of 1934 authorized leasing of public land for grazing, and Robert Crawford leased public lands in Canebrake Canyon (Wirth Associates, Inc. 1978:111).

In 1869 placer gold was discovered at Julian, and in 1870 the first lode mines were discovered there. Some of the mines were owned by corporations, like the Chariot Mining and Milling Corporation. Most of the gold in the Julian and Banner districts was mined between 1870 and 1875, with production peaking in 1872-1873 (Wirth Associates, Inc.1978: 95). Mining has been practiced sporadically or on a small scale since the major Julian gold rush of the 1870s.

Toll roads were built to improve the transportation of machinery and supplies to the mines. The Wilcox Toll Road was built from Julian to Banner and then extended to San Felipe Valley in 1871. At the same time, a toll road was authorized between San Diego and the Colorado River via Mountain Springs (Wirth Associates, Inc. 1978:95).

Mining for sand and gravel, feldspar, and semi-precious gems were extracted from Table Mountain early in the 20th century and as late as the 1940s.

San Diego and Arizona Railway Company with the aid of Southern Pacific built a connection between San Diego and Yuma via Carrizo Gorge (Jacumba Pass), which was completed in 1919 ending an 11-year construction period. Never a commercial success, the line was washed out by a flash flood in 1976 (Wirth Associates, Inc. 1978:108).

The Small Tract Act of 1938 authorized the sale or lease of not more than five acres of public lands. This legislation resulted in the privatization of small parcels and use of some for retirement communities.

3.9.5 Historically Significant Trails System

There are a number of historic trails within the Planning Area. These include nationally recognized trails that are designated under the National Trails System Act of 1968, as well as other trails that have historic and/or cultural significance. Within the Planning Area, there is one National Scenic Trail, one National Historic Trail, and one National Recreational Trail. In addition, there are two other travel routes/trails of historic and/or cultural significance within the Planning Area that are not part of the National Trails System. These trails are discussed in more detail below.

The Pacific Crest National Scenic Trail. This trail spans 2,650 miles from Mexico to Canada through California, Oregon and Washington. It begins at the Mexican Border near Campo in southeastern San Diego County and enters the Planning Area in the vicinity of Boulder Oaks Campground along Interstate 8. It exits the Planning Area north of Warner Springs and west of the Los Coyotes Indian Reservation in northeastern San Diego County. Through the Planning Area, it passes along the crest of the east San

Diego County mountains through chaparral in the south, and conifer forests in the Mount Laguna and Julian areas. The route was first explored in the late 1930s. Clinton Clarke and Warren Rogers led the effort to secure a border-to-border trail corridor. The trail system was created one piece at a time over the years, largely by hiker and equestrian volunteers. It was only completed in 1993, however, it may qualify for the NRHP because of its history. Approximately 15 miles of the Pacific Crest NST occur on BLM-administered lands within the Planning Area.

Noble Canyon National Recreation Trail. This 10 mile trail begins in the north portion of Pine Valley and proceeds east to Laguna Meadows in the Laguna Mountain Recreation Area of Cleveland National Forest. Portions of the trail were established by miners and ranchers in the late 1800s. The trail is approximately five miles long and occurs completely within the Planning Area. It may be eligible to the NRHP.

The San Diego-San Antonio Mail Route. The mail contract was awarded to the San Diego-San Antonio Mail Company over a southern route linking San Antonio, Texas with San Diego on June 22, 1857. The first mail left San Antonio, Texas on July 9, 1857. The route entered the Planning Area in the south approximately where the community of Ocotillo is today. It went north following the basic route that Highway S-2 uses today. S-2 is also named the Great Southern Overland Stage Route of 1849. At Oriflamme Canyon, the route left S-2 and proceeded up the mountains to Cuyamaca and on to San Diego. The entire route is Passengers dismounted from the stages for this portion of the route and proceeded on to San Diego. The fact that the company used mules to pull its coaches and for its packtrain through Oriflamme Canyon led to the nickname, "Jackass Mail." This little known operation was the first transcontinental mail system.

Cleveland National Forest has a small interpretive display and picnic area commemorating this stage line. Called Pioneer Mail, this area is near in the north of the Mount Laguna Recreation Area on County Road S-1. Portions of this old mail route may be eligible to the NRHP.

The Butterfield Overland Mail Route. A mail contract was awarded to Butterfield Overland Stage Company a few months after the San Diego-San Antonio Mail. The new line was to go through Fort Smith, Arkansas, then southwest through Texas to El Paso, west to Fort Yuma, California and then northwest to San Francisco. Termed the ox bow route, it was longer by some 600 miles than the existing central routes, but only southern routes could be traversed in winter. Butterfield Overland Stage began rolling on

September 15, 1858. The Butterfield followed the Jackass Mail route in the southern portion of the Planning Area. At Oriflamme Canyon, southwest of Julian, the Butterfield stage continued north to Warner Spring and on to Los Angeles, whereas the Jackass Mail went west up Oriflamme Canyon to San Diego.

3.9.6 California Historic Landmarks

The California Historic Landmark (CHL) program is designed to recognize places of California heritage significance with stone monuments and bronze plaques along roadways. CHLs are buildings or sites that have been approved for designation by the local county board of supervisors or city council and recommended by the State Historical Resources Board.

To be eligible for designation as a Historic Landmark, a property must be:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

There are eight CHLs in the Planning Area. These are listed below:

Number 304, Vallecito State Station. Originally constructed in 1852, the Vallecito Stage Station was reconstructed in 1934. It was an important stop on the first transcontinental mail route, the San Diego-San Antonio ("Jackass") mail line (1857-1859). The Butterfield Overland Stage Line (1858-1861), and numerous the southern emigrant parties and wagon trains also used this station. This landmark is located at Vallecito Stage Station County Park, on County Road S-2 (Post Mile [P.M.] 34.7), 3.7 miles northwest of Agua Caliente Springs.

Number 412, Town of Julian. Following the discovery of gold nearby during the winter of 1869-70, this valley became the commercial and social center of a thriving mining district. Ex-Confederate soldier Drury D. Batley laid out the town on his farmland and named it for his cousin and fellow native of Georgia, Michael S. Julian. By 1906 most mines were unprofitable. Since then the area has become a prosperous tourist destination. There are two historic landmarks commemorating the town of Julian. A private one is located in Julian Memorial Park, at the intersection of Washington and Fourth Streets. The official California Historic Landmark Number 412 is in front of the Julian Town Hall.

Number 472, Box Canyon. The old pack trail, known as the Sonora, Colorado River, or Southern Emigrant Trail and later as the Butterfield Overland Mail Route, traversed Box Canyon in the desert east of Oriflamme Canyon and the Cuyamaca Mountains. On January 19, 1847, the Mormon Battalion under the command of Lieutenant Colonel Philip St. G. Cooke, using hand tools, chiseled a passage through the rocky walls of the narrow gorge for their wagons and opened the first wagon road into southern California. This landmark is located on County Road S-2 (P.M. 25.7), 8.6 miles south of State Highway 78, in Anza-Borrego Desert State Park.

Number 634, El Vado. This landmark is on the de Anza route opened by Captain Juan Bautista de Anza and Father Francisco Garcés in 1774. Anza's expedition of 1775, a group of 240 soldiers and settlers coming from Sonora to found San Francisco, encamped near El Vado (The Ford) for three days and two nights, December 20-22, 1775. This landmark is located six miles northwest of Borrego Springs on Borrego Springs Road, in Anza -Borrego Desert State Park.

Number 647, Butterfield Overland Mail Route (Blair Valley). This pass, called La Puerta, lies between the desert and the cooler valleys to the north. It was an old Indian trai, used later by the Mormon Battalion, Kearny's Army of the West, the Butterfield Overland Mail stages (858-1861), and numerous emigrants who eventually settled California. This landmark is located at Blair Valley, 0.5 miles east of County Road S-2 (P.M. 23.0), 5.8 mi S of State Highway 78, in Anza-Borrego Desert State Park.

Number 785, Santa Catarina. This spring was named by Captain Juan Bautista de Anza when his overland exploration party camped here on March 14, 1774, on the journey that opened the Anza Trail from Sonora into Alta California. Anza's colonizing

expedition of 1775, consisting of 240 persons and over 800 head of livestock, camped here the night of December 23. This landmark is located at Santa Catarina Springs, 10 miles northwest of Borrego Springs, in Anza-Borrego Desert State Park.

Number 793, San Felipe Valley and Stage Station. Several ancient travel routes of Kamia, Cahuilla, Kumeyaay, and Luiseño Indians and their predecessors intersected near here. Working for the Butterfield Stage Line, Warren F. Hall built and operated the San Felipe Stage Station in this vicinity. After the Butterfield line ceased operation on the southern route in 1861, the station was used by Banning Stages and by the military during the Civil War. This landmark is located on County Highway S-2 (P.M. 15.9), 0.9 miles northwest of intersection of State Highway 78, near Anza-Borrego Desert State Park.

Number 858, Pedro Fages Trail. On October 29, 1772, headed east from San Diego in search of army deserters, Colonel Pedro Fages made the first entry by a European into Oriflamme Canyon. From there, Fages and his men traveled north through Cajón Pass, and on to the southern San Joaquin Valley. The trail through Oriflamme Canyon was used by the "Jackass Mail" in 1857. This landmark is located 1.7 miles southeast on Sunrise Highway (County Road S-1, P.M. 36) from intersection with Highway 79 (P.M. 14.5), 8 miles southeast of Julian.

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3.10 Paleontological Resources

Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils—particularly vertebrate fossils—are considered to be nonrenewable resources. Because of their rarity and because of the scientific information they can provide, fossils are highly significant records of ancient life. They can provide information about the interrelationships of living organisms, their ancestry, development, and change through time, and their former distribution. Progressive morphologic changes observed in fossil lineages may provide critical information on the evolutionary process itself—that is, the ways in which new species arise and adapt to changing environmental circumstances. Fossils can also serve as important guides to the ages of the rocks and sediments in which they are contained and may prove useful in determining the temporal relationships of rock deposits from one area to another and the timing of geologic events. Time scales established by fossils provide chronologic frameworks for geologic studies of all kinds.

All lands within the Planning Area are classified, as follows, based on their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. These classifications are based on existing maps.

Class 1 (low sensitivity). Igneous and metamorphic geologic units and sedimentary geologic units where vertebrate fossils or uncommon non-vertebrate fossils are unlikely to occur.

Class 2 (moderate sensitivity). Sedimentary geologic units that are known to contain or have unknown potential to contain fossils that vary in significance, abundance, and predictable occurrence.

Class 3 (moderate sensitivity). Areas where geologic units are known to contain fossils, but have little or no risk of human-caused adverse impacts and/or low risk of natural degradation, or because of their geographic location or topographic position.

Class 4 (high sensitivity). Areas where geologic units regularly and predictably contain vertebrate fossils and/or uncommon non-vertebrate fossils, and are at risk of natural degradation and/or human-caused adverse impacts.

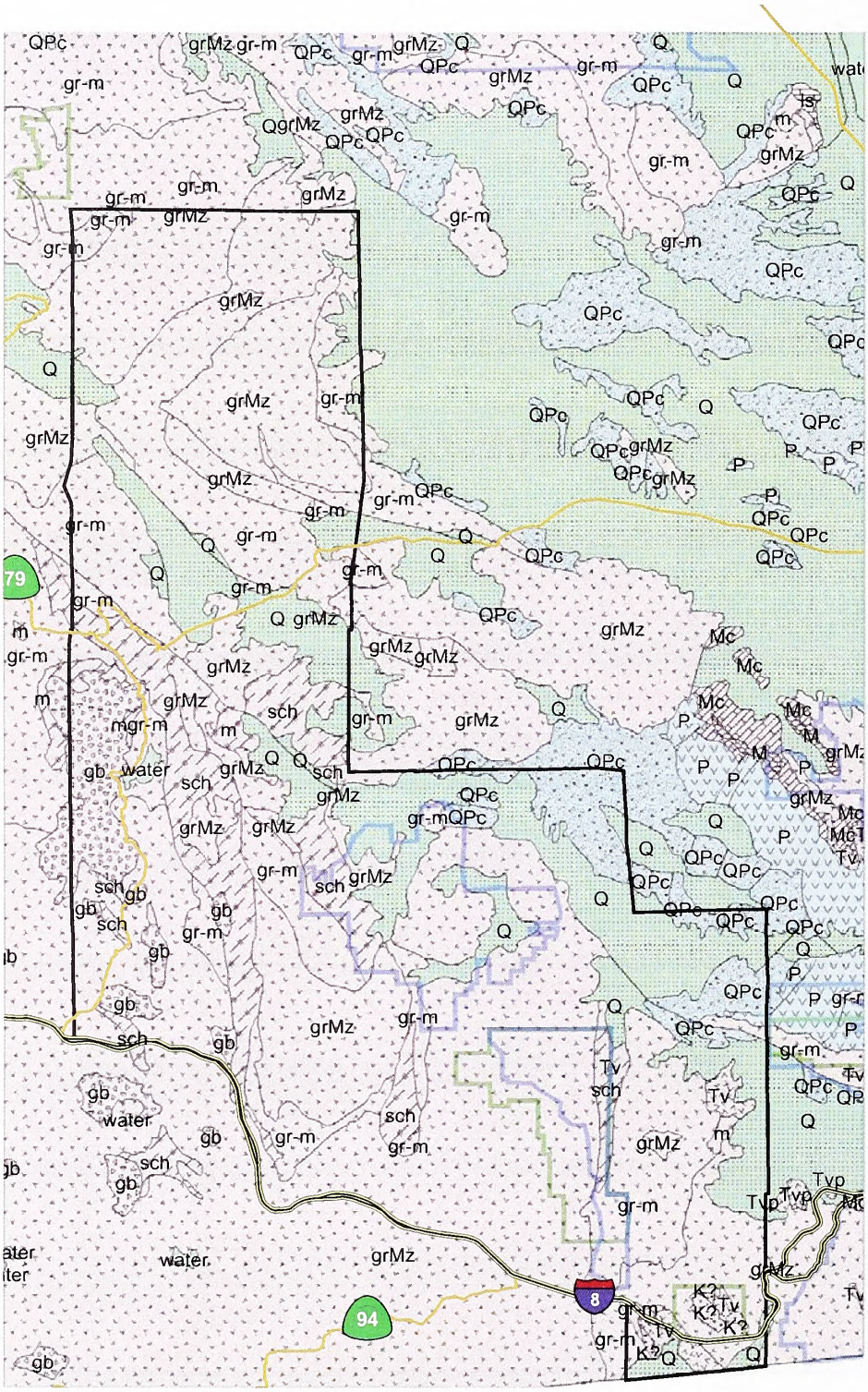
Table 3-6 summarizes the acreages of Class 2 and 3 lands. Figure 3-10 shows the paleontological resources in the Planning Area. Classes 1 through 3 occur in the Planning Area, with most of the Class 2 and 3 areas located on state-owned lands.

Within the Planning Area are several rock units having high probability of paleontological resource occurrence, several rock units having moderate probability of paleontological occurrence, and several rock units having low probability of paleontological resource occurrence. The majority of the units having high probability of paleontological resource occurrence occur on State Parks land and BLM designated wilderness. Therefore, although the occurrence for resources is high, there is little or no risk of human-caused adverse impacts, and these units are mapped as Class 3 (moderate sensitivity). Similarly, units having moderate and low probability of paleontological resource occurrence are mapped as Classes 2 and 1, respectively.

TABLE 3-6
PALEONTOLOGIC SENSITIVITY

Land Division/Ownership	Lands with Class 3 Sensitivity (Acres)	Lands with Class 2 Sensitivity (Acres)
Planning Area	20,561	85,969
BLM-Administered	349	11,367
ACEC	0	15
Wilderness	348	9,676
Private	4	25,765
State	20,207	48,797
Other Federal	0	0

Class 3 formations: QPc, P
Class 2 formation: Q



Eastern San Die Planning Bound

BLM Wilderness

BLM ACECs

Faults

Paleontological Resource Sensitivity

Class 1 (low sensitivity). Igneous and metamorphic geologic units and sedimentary geologic units where vertebrate fossils or uncommon non-vertebrate fossils are unlikely to occur.

Class 2 (moderate sensitivity). Sedimentary geologic units that are known to contain or have unknown potential to contain fossils that vary in significance, abundance, and predictable occurrence.

Class 3 (moderate sensitivity). Areas where geologic units are known to contain fossils, but have little or no risk of human-caused adverse impacts and/or low risk of natural degradation, or because of their geographic location or topographic position.

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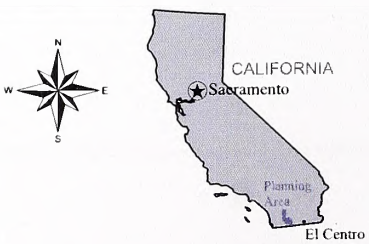
NO SCALE

FIGURE 3-10: Palentological Resources



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3.11 Visual Resources

The Federal Land Policy and Management Act of 1976 (FLPMA) requires BLM to protect the quality of scenic values on public lands (43 U.S.C. 1701). BLM has developed an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality. The Visual Resource Management (VRM) system functions in two ways. First, BLM conducts an inventory that evaluates visual resources on all lands under its jurisdiction (Inventory/Evaluation). Once inventoried and analyzed, lands are given relative visual ratings (Management Classifications). Class designations are derived from an analysis of Scenic Quality (rated by landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification), a determination of Viewer Sensitivity Levels (sensitivity of people to changes in the landscape), and Distance Zones (visual quality of a landscape, as well as user reaction, may be magnified or diminished by the visibility of the landscape). Management Classes describe the different degrees of modification allowed to the basic elements of the landscape (form, line, color, texture). Classes are defined as follows:

- **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.

Under the existing management situation the two WAs are managed as VRM Class I. Similarly, and in accordance with 2000 IM 2000-096, the five WSAs are managed as Class I. Most other BLM-administered lands in the Planning Area are currently managed as Class II. Two areas (Buck Canyon and an area north of the Sawtooth Mountains Wilderness Area) are currently managed as Class III Existing Visual Resources are shown in Figure 3-11. The visual resource management classification process included an identification of landscape character, an assessment of scenic quality, a visual sensitivity evaluation, identification of KOPs, the identification of cultural modifications in the landscape, and an evaluation of the effects of those modifications on character and

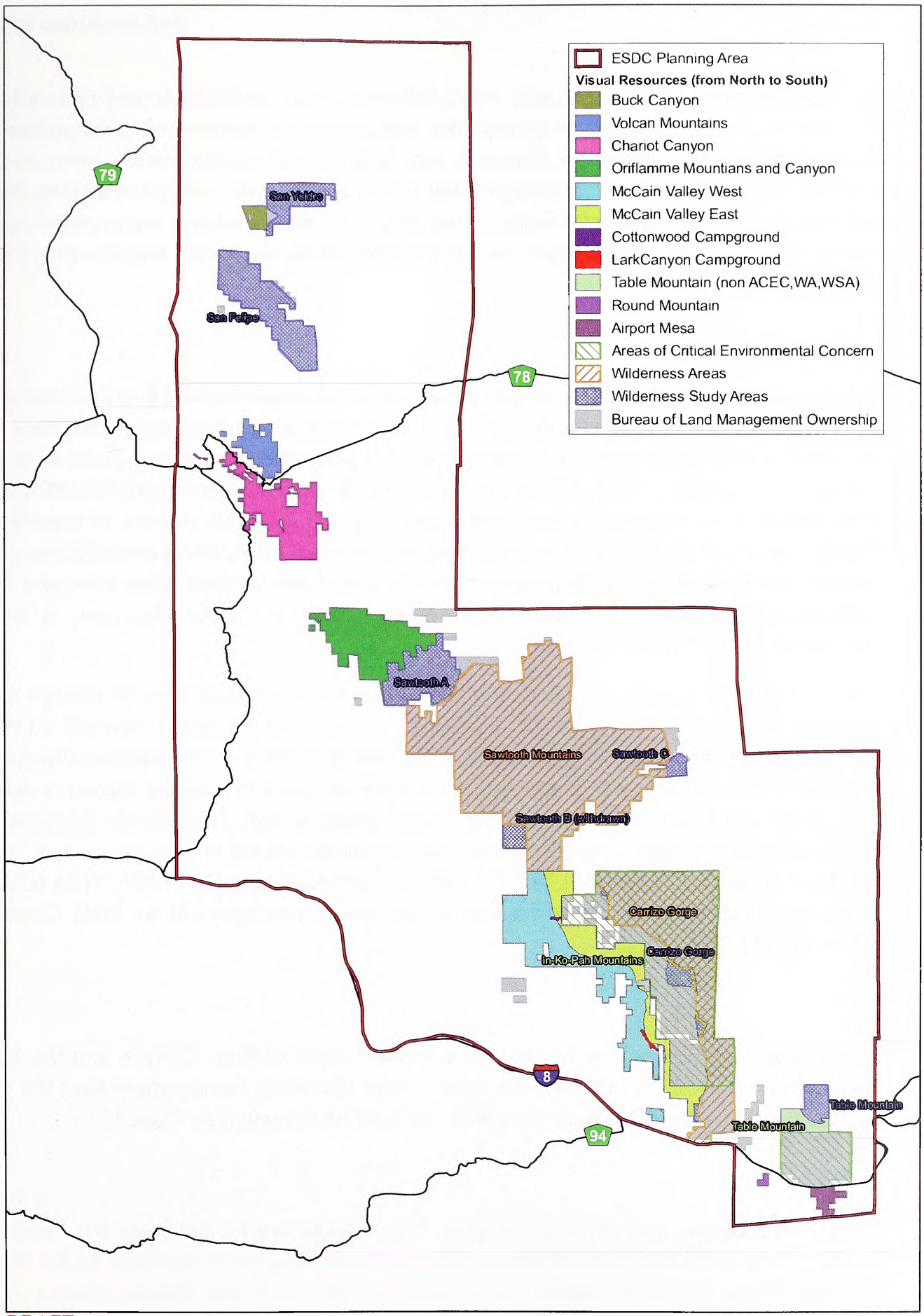

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FIGURE 3-11: Visual Resources

quality. The trend in scenic quality was relatively stable and unchanging in terms of landscape character and scenic quality. This was ascribed to the amount of rough terrain throughout the Planning Area, coupled with lack of water, which were seen to be hindrances to development. However, OHV use had been increasing and the resulting effects were seen to be proliferating in the McCain Valley area and were expected to continue to increase. Much of this visual resource assessment work was done in 1979 (DOI BLM 1979).

In the past twenty-five years, OHV and other visitor use has increased and the decree of cultural modification (particularly surface area disturbance) has been observed to increase. ECFO determined that the scenic quality of certain areas may have been reduced as a result of the cultural modifications. The five areas for which a VRM re-evaluation was considered warranted as part of this DRMP/EIS process include Buck Canyon in the San Ysidro Mountains, San Felipe Hills WSA, Volcan Mountains and Chariot Canyon, McCain Valley (including the Lark Canyon OHV Use Area and the Cottonwood Campground), and Airport Mesa, south of Table Mountain. A brief discussion of these areas follows.

Buck Canyon, San Ysidro Mountains. This area is located to the west/southwest of the San Ysidro WSA. It was classified by the MFP as Class III. Rugged terrain restricts casual use and it use for OHV is Limited. Scenic quality is high. The existing character of the landscape is mostly retained and the level of visual contrast is moderate to low. The low level of surface disturbance and this area's adjacency to the San Ysidro WSA (Class I) are valid reasons for reconsideration of this area's management as VRM Class II rather than III.

San Felipe Hills WSA. This set of hills is located south of Buck Canyon and the San Ysidro Mountains WSA. Although the MFP Visual Resource Management Map did not assign a VRM Class to this area, as a WSA it would be managed as Class I.

Volcan Mountains and Chariot Canyon. These areas are located near the Town of Julian, to the north and south of Banner Canyon Road. They were classified by the MFP as VRM Class II. Scenic quality is moderate to high, and very minimal impact (i.e., surface disturbance or other visual contrast) is visual from primary viewing routes. Existing conditions warrant retention of the Class II designation.

McCain Valley (including Lark Canyon OHV Use Area and the Cottonwood Campground). The entire land area of McCain Valley, which is located north of I-8 and west of the Carrizo Gorge Wilderness, was classified by the MFP as Class II. The increased use of this area for OHV use and camping warrant reconsideration of its VRM classification. The level of surface disturbance, loss of vegetative cover and resulting visual contrast are valid reasons for reclassifying the highest use areas as VRM Class III.

Airport Mesa. This area is located south of Interstate Highway 8 and the Table Mountain area, in the southeastern portion of the Planning Area. The MFP classified this area as Class II. (The townsite of Jacumba, which is not under BLM management or administration, was identified as VRM Class III.) Reclassification as III or IV may be warranted for several reasons. This area abuts the Internation Border and portions of it receive moderate to heavy vehicular and other traffic associated with U.S. Border Patrol and other law enforcement activities that are not expected to decrease in the near future.

The alternative classifications of these and other areas within the Planning Area would vary by Alternative, and are described in Chapters 2 and 4.

3.12 Special Designations

Figure 3-12 shows the Special Designations in the Planning Area.

3.12.1 Wilderness Areas

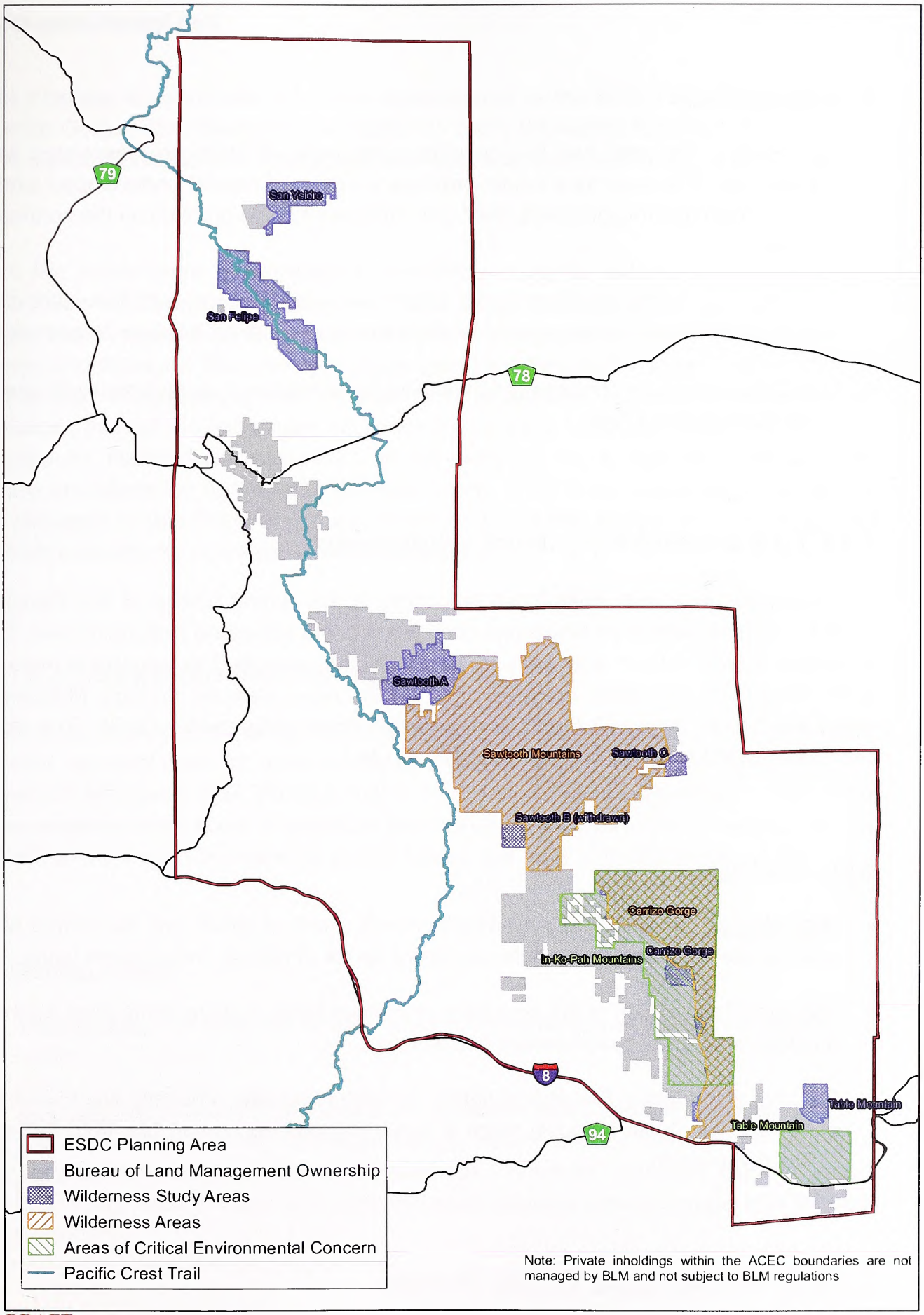
WAs are congressionally designated. BLM manages designated wilderness areas within the Planning Area consistent with the California Desert Protection Act (CDPA) of 1994, the administrative instruments (regulations, policies, etc.) from that statute, and other applicable federal statutes. These instruments identified management direction for these lands with respect to specific uses that may occur within wilderness, as well as overall goals for lands designated. Of particular importance is the clear Congressional intent that wilderness designations not lead to the creation of "buffer zones" around wilderness boundaries. In and of themselves, non-wilderness activities visible or audible from wilderness are not to be precluded up to such boundaries. The FLPMA management standard for WAs is that there is no unnecessary or undue degradation, which is largely defined by the CDPA and Wilderness Act.

The Planning Area contains two designated WAs administered by the BLM. Carrizo Gorge Wilderness and Sawtooth Mountains Wilderness total approximately 48,333 acres.

Travel in WAs is limited to foot or equestrian conveyance. Motorized vehicles, bicycles, or any other form of mechanized equipment are prohibited in these areas to protect the solitude and primitive nature of these special places.

3.12.1.1 Carrizo Gorge Wilderness

The Carrizo Gorge Wilderness is located in the southeastern portion of the Planning Area on the lower east slope of the In-ko-pah Mountains. The watershed drains into the contiguous Anza-Borrego State Park to the north and east. The boundary on the west crosses several drainages and is difficult to locate on the ground. The wilderness area is approximately 15,700 acres and is located on the Jacumba, Sombrero Peak, and Sweeney Pass 7.5-minute quadrangle maps prepared by USGS. The legal description of this wilderness area is in Appendix H.



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Miles
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Kilometers

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FIGURE 3-12: Special Designations

Wilderness Values:

- Naturalness. The area has few developments, most of which are associated with grazing use. The area as a whole provides a sense of natural undeveloped lands. Unauthorized and inappropriate OHV use continues to be a problem on the northeast boundary.

- Solitude. The rugged terrain provides limited vistas to the northwest and south east and panoramic vistas to the east over remote portions of Anza-Borrego State Park.

- Primitive Recreation. The area is lightly used for recreation, in conjunction with use in Anza-Borrego State Park.

3.12.1.2 Sawtooth Mountains Wilderness

The Sawtooth Mountains Wilderness is located in the central portion of the Planning Area on the northeast slope below and contiguous to the Cleveland National Forest. The boundary is well defined and easy to locate on the ground. The wilderness area is approximately 35,080 acres and is located on the Agua Caliente Springs, Monument Peak, and Mount Laguna 7.5-minute quadrangle maps prepared by USGS. The legal description of this wilderness area is in Appendix H.

Wilderness Values

- Naturalness. The area has few developments, most of which are associated with grazing use. The area as a whole provides a sense of natural undeveloped lands.

- Solitude. The isolation of the area from developed lands and the many deep washes provides a sense of spaciousness and isolation.

- Primitive Recreation. The area is lightly used for recreation, primarily due to lack of public access. While arduous, there is some primitive recreation use from McCain Valley to the south.

3.12.2 Wilderness Study Areas

BLM manages designated WSAs within the Planning Area consistent with the CDPA of 1994, the administrative instruments (regulations, policies, etc.) from that statute, and other applicable federal statutes.

The Planning Area contains five WSAs administered by the BLM. Table Mountain WSA, Carrizo Gorge WSA, Sawtooth Mountains "A" WSA, Sawtooth Mountains "C" WSA, San Felipe Hills WSA, and San Ysidro WSA total approximately 13,963 acres.

The five WSAs were administratively identified under the authority of sec 603[a] or 201/202 of FLPMA in the December 1979 "Final Intensive Inventory—Public Land administered by BLM CA Outside of the CDCA." Subsequently, portions of two [Carrizo Gorge and Sawtooth Mountains] of those five WSAs and Public Land outside of those WSAs were designated by the California Desert Protection Act of 1994 as wilderness. However, that Act did not release the residual portions of those two WSAs from the non-impairment management standard. For convenience, those residual portions of the WSAs are referred to as WSAs by the same name. FLPMA mandates that WSAs should be managed so that there is no unnecessary or undue degradation AND no impairment of their suitability for preservation as wilderness.

3.12.2.1 Sawtooth Mountains WSA (A)

This is the most distinct of the residual WSAs. The Sawtooth Mountains WSA (A) is located approximately 35 miles south of Borrego Springs. It is separated from the Sawtooth Mountains WSA (B) by a road and private land (DOI BLM 1990b). The WSA is approximately 3,883 acres. A portion of the WSA is contiguous to the Cleveland National Forest on the west. The boundary is well defined and easy to locate on the ground.

Wilderness Values:

- Naturalness. The area has virtually no developments and would appear natural to a visitor.
- Solitude. The isolation of the area from developed lands and the rugged terrain form the main ridge of the Sawtooth Range, which provide surprisingly numerous opportunities for a sense of remoteness. However, periodic military aircraft overflights result in visual and noise intrusions creating periodic temporary effects on solitude.

- Primitive Recreation. The area is lightly used for recreation, primarily due to lack of public access. Most primitive recreation use is probably from hunting or side trips from the Pacific Crest National Scenic Trail of the Cleveland National Forest to the west.

3.12.2.2 Sawtooth Mountains WSA (B)

Sawtooth WSA (B) was transferred to the Cuyapaipe Band of Mission Indians on December 27, 2000 (Public Law 106-568 Title IX California Indian Land Transfer, 114 Statute 2869).

3.12.2.3 Sawtooth Mountains WSA (C)

The Sawtooth Mountains WSA (C) is located approximately 45 miles south of Borrego Springs. This WSA is a narrow strip of land located between Canebrake Road and private property on the north, and Anza-Borrego Desert State Park on the east, south, and west. The wilderness boundary is 30 feet from the centerline of the road in the west and considerably further in the east, so the WSA is as narrow as 30 feet. Nevertheless, it is subject to the non-impairment standard. This is generally not a major concern, due to the small size and limited access along the road. The upper portion of the adjacent road has been closed to motor vehicles; the lower portion of the road is on private property, and provides gated access to residences in Canebrake Canyon. The WSA is approximately 600 acres (DOI BLM 1990b).

Wilderness Values:

- Naturalness. Although the northern boundary coincides with Canebrake Canyon, which contains an improved dirt road, there is almost no evidence of human activity in the WSA. On the south the WSA borders the Anza–Borrego Desert State Park.

- Solitude. Although the area is small, opportunities for solitude exist because of extremely low visitation. However, the proximity of a private residential area, visible from much of the WSA, reduces the perception of remoteness. Periodic military aircraft overflights result in visual and noise intrusions creating periodic temporary effects on solitude.

- Primitive Recreation. Opportunities are limited, primarily due to lack of legal access by motor vehicle and the small size of the WSA. Most primitive recreation use is probably side trips from the Anza–Borrego Desert State Park.

3.12.2.4 Carrizo Gorge WSA

The Carrizo Gorge WSA is located in southeastern San Diego County. The WSA was approximately 15,408 acres (DOI BLM 1990c) prior to most of it being designated as wilderness. The remaining WSA is approximately 1,012 acres and is composed of several roadless areas contiguous to the western boundary of the Carrizo Gorge Wilderness. The northern and eastern boundaries are Anza–Borrego Desert State Park. The southern boundary is private lands bordering on Interstate 8. The remaining boundaries are generally public or private lands. The very western boundary is irregular and has been drawn to avoid scattered parcels of private property and public lands lacking wilderness characteristics. The WSA contains many of the upper drainages that flow east through the Carrizo Gorge Wilderness and Anza–Borrego Desert State Park.

Wilderness Values:

- Naturalness. The area has virtually no developments; most of the WSA is in pristine condition. The few human imprints within the WSA are located primarily along its western edge, and are substantially unnoticeable within the area as a whole.

- Solitude. Topographic relief, winding canyons, and low level of visitation provide many opportunities for solitude. This is enhanced by the presence of the Carrizo Gorge Wilderness to the east.

- Primitive Recreation. The area offers many opportunities for primitive forms of recreation in conjunction with the Carrizo Gorge Wilderness to the east. Movement within the study area is confined only by the steepness of the terrain and the ability of the recreationist.

3.12.2.5 San Felipe Hills WSA

The San Felipe Hills WSA is approximately 5,325 acres on the ridge of the San Felipe Hills in the northern portion of the Planning Area. The WSA is two miles west of the unincorporated community of Ranchita. The boundary is well defined and easy to locate on the ground (DOI BLM 1990b).

Wilderness Values:

- Naturalness. The dominant characteristic of the WSA is the Pacific Crest NST which runs along the ridge. Motorized vehicles and mountain bikes are not allowed on the Pacific Crest NST. The tread is approximately 3 feet wide. There are bulldozer scars, partially reclaimed, associated with the Pines Fire of 2002. The area as a whole provides a sense of natural undeveloped lands; however, the vistas off of the ridge, particularly to the west, encompass considerable rural development.
- Solitude. There is a sense of spaciousness when traveling the Pacific Crest NST. However, because of the WSA's small size it is difficult to escape outside sights and sounds, which reduce the feeling of remoteness. The area is also periodically overflown by military aircraft.
- Primitive Recreation. The area is lightly used for recreation, almost exclusively along the Pacific Crest NST.

3.12.2.6 San Ysidro Mountain WSA

The WSA is approximately 2,125 acres at the south end of ridge which comprises San Ysidro Mountain. The area is contiguous with Anza–Borrego Desert State Park to the east and Los Coyotes Indian Reservation to the north (DOI BLM 1990b).

Wilderness Values:

- Naturalness. The area consists of the pine forested upper drainages of Cherry and Buck Canyons. While considerable reclamation work has been done in the last two decades (most notably the removal of summer homes in occupancy trespass) there are still has considerable signs of historic mining.
- Solitude. The vegetative cover can provide a sense of remoteness and solitude remarkable for such a small area.
- Primitive Recreation. The area is lightly used for recreation and then almost exclusively for day use.

3.12.2.7 Table Mountain WSA

The Table Mountain WSA is located three miles north of Interstate 8 in southeastern San Diego County. The northern and eastern boundaries are Anza–Borrego Desert State Park. The western boundary is a State section outside of Anza–Borrego Desert State Park. The southern boundary was drawn to exclude those public lands lacking wilderness characteristics. The WSA is approximately 1,018 acres (DOI BLM 1990c).

Wilderness Values:

- Naturalness. The area has virtually no developments; the only evident alterations to the natural environment are a few small, unobtrusive abandoned mining prospects.

- Solitude. Opportunities for solitude are limited by the area's small size and the proximity of roads. The south boundary abuts public land containing a small mine, a quarry, and numerous prospects served by primitive roads which also carry OHV traffic. Periodic military aircraft overflights result in visual and noise intrusions creating periodic temporary effects on solitude. However, solitude can still be found, particularly in the northern third of the WSA which adjoins Anza–Borrego Desert State Park.

- Primitive Recreation. Opportunities for primitive recreation are limited by the area's small size. In conjunction with Anza–Borrego Desert State Park, the area provides recreation opportunities.

3.12.3 National Scenic Trails

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 (USDA 1982) and a subsequent 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. Figure 3-12 depicts the location of the Pacific Crest NST.

3.12.4 Areas of Critical Environmental Concern

The Federal Land Policy and Management Act defines an ACEC as an area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards. Within the Planning Area, there are two ACECs designated for cultural as well as wildlife resource values, Table Mountain ACEC and In-Ko-Pah Mountains ACEC, both of which were designated in 1981 (Table 3-7). Management plans were written for both ACECs in the early 1980s.

TABLE 3-7
AREAS OF CRITICAL ENVIRONMENTAL CONCERN IN THE PLANNING AREA

ACEC	Total Acres
In-Ko-Pah	22,186
Table Mountain	4,293

3.12.4.1 In-Ko-Pah ACEC

In-Ko-Pah ACEC, located in southeastern San Diego County, California, was designated by the Eastern San Diego County Management Framework Plan (DOI BLM 1981) in recognition of its wildlife and cultural resource values. The In-Ko-Pah ACEC is 22,186 acres and is composed of both public lands and private land in-holdings. The ACEC abuts the Anza-Borrego Desert State Park to the north and east, and other BLM-managed public lands to the south and west.

Five plant communities are located within the In-Ko-Pah Mountains ACEC: semi-desert chaparral, desert scrub, desert fan palm oasis, desert wash, and riparian woodland. Semi-desert chaparral occurs on 5 to 65-percent slopes between elevations of 2,800 and 5,000 feet. Desert wash areas have very little slope and range from 1,000 to 1,300 feet in elevation. Riparian woodland community occurs specifically within upper Bow Willow Canyon between 3,400 and 5,000 feet in elevation. Desert scrub communities occur from 500 to 1,200 feet in elevation. Fan palm oases occur from 500 to 1,000 feet in elevation.

The In-Ko-Pah ACEC falls within the ethnographic territory of the Kumeyaay Indians. Native American values within the ACEC are poorly documented.

Relevance. The In-Ko-Pah ACEC contains substantial heritage resources. There are very numerous agave roasting pits and several spectacular habitation sites containing features, ceramics, stone tools, and subsurface deposits. There are an estimated 22 sites per square mile in some areas. Aboriginal rock art sites are reported in the ACEC, although the existence of these pictographs has not been verified. Based on existing records, it appears that many sites within the ACEC are likely eligible for inclusion in the NRHP. The ruggedness of the landscape including precipitous mountainous slopes adds to the scenic value of this ACEC.

The In-Ko-Pah ACEC and adjacent portions of the Anza–Borrego Desert State Park support the Peninsular bighorn sheep, which is listed as threatened by the State of California and as endangered by the USFWS. The southern portion of the In-Ko-Pah Mountains ACEC falls within the quino checkerspot butterfly recovery area. Several other special status plant and wildlife species occur or have the potential to occur within the ACEC.

Importance. The richness of cultural resources present gives the In-Ko-Pah ACEC special worth. Rock art within the ACEC is fragile, sensitive, rare, irreplaceable, and vulnerable to adverse change. Bow Willow and Rockhouse Canyons are likely eligible for inclusion in the NRHP and should be listed. Protection of this area is applicable to FLPMA mandates for natural and cultural resources.

The Peninsular bighorn sheep habitat and other special status species are resources that have more than local significance. The Carrizo Gorge Ewe Group of Peninsular bighorn sheep lives within the In-Ko-Pah ACEC. The Swainson's hawk has also been observed in the ACEC. This species is listed as threatened by the State of California and is known to migrate through the ACEC. Other special status species have the potential to occur in the ACEC including grey vireo, barefoot gecko, least Bell's vireo, and mountain springs bush lupine.

3.12.4.2 Table Mountain ACEC

The Table Mountain ACEC, located in southeastern San Diego County, California, was designated by the Eastern San Diego County Management Framework Plan (DOI BLM 1981) because of its abundant array of cultural resources (DOI BLM 1984). The Table Mountain ACEC is 4,293 acres. The mountain itself holds sacred significance to the Kumeyaay Indians of southern and Baja California. These people also consider other areas within the ACEC sensitive.

The area supports diverse fauna populations. Noteworthy species include the Peninsular bighorn sheep, the golden eagle, and mule deer. Magic gecko and the San Diego horned lizard are also expected. There are historic records of the quino checkerspot butterfly on Table Mountain. Habitat assessments in 2005 and 2006 indicated that there is potential for this species to still occupy the area (DOI BLM 2005d; Osbourne 2006).

The region is relatively pristine except for several roads and sporadic evidence of historic mining. An unobtrusive power line crosses the ACEC and services two communications sites. Several upland game wildlife waters also exist throughout the ACEC.

Current impacts to Table Mountain arise mostly from recreation activity and off-road vehicle travel. The possibility of disturbance from mining activity exists, since several claims are present.

Relevance. The Table Mountain ACEC contains an abundant array of cultural resources suggesting an unparalleled focal point for prehistoric use. The mountain itself holds sacred significance to the Kumeyaay Indians of southern and Baja California. These people also consider other areas within the ACEC sensitive.

There are historic accounts of quino checkerspot butterfly inhabiting the area. The habitat is still suitable, and the entire ACEC is located within the designated recovery area for this species. There are historic and existing golden eagle nest sites within the Table Mountain ACEC. The northern extent of the ACEC includes a portion of the Peninsular Ranges bighorn sheep critical habitat. Several other special status plant and wildlife species occur or have the potential to occur within the ACEC.

Importance. The Table Mountain ACEC contains distinctive cultural resources. The wealth of prehistoric properties suggests that Table Mountain constituted an unparalleled focal point for prehistoric use. Within this ACEC is a mixture of base camps, temporary camps, quarries, roasting pits, and other aboriginal features. Consequently, Table Mountain archaeology and Native American resources provide an unusual opportunity to enrich the understanding of our prehistoric heritage. A total of 1,796 acres of the ACEC are listed on the NRHP (DOI BLM 1982).

3.13 Public Health and Safety

3.13.1 Abandoned Mines

California has a long and distinguished mining history and a legacy of abandoned mines.

Currently there are at least 48 abandoned or inactive mine openings in the Planning Area. The majority of these sites are located in the vicinity of Julian and McCain Valley.

Several informational brochures regarding abandoned mines have been produced. These publications emphasize the safety hazards associated with abandoned and inactive mines and the precautions that should be utilized around these sites. Abandoned mine hazards include, but are not limited to, open shafts and adits, open pits and quarries, high and steep walls of pits and trenches, potential for the presence of explosives, the presence of contaminated air or gas in underground workings and the presence of unstable buildings or structures. Recommended precautions include, but are not limited to, never working alone around abandoned mines, never entering underground workings or unstable structures, and being aware of snakes and other animals that may live in mine workings.

3.13.2 Hazardous Materials Management

Hazardous materials within the Planning Area consist of materials within municipal and informal dumping sites, and mining-related hazardous materials. Each is described in more detail below.

3.13.2.1. Landfills

Operating, closed, and informal landfills have the potential to cause environmental impacts to BLM-administered land. Chemical leachate from landfills has the potential to contaminate soil and reach surface water or groundwater. Local law enforcement is responsible for enforcing laws and regulations that prohibit illegal dumping in landfills found on lands that are not managed by BLM. The only known landfill near BLM-administered lands within the Planning Area is the Julian Solid Waste Transfer Station. BLM leased the parcel of land to the County of San Diego for use as a public refuse

disposal site in 1968. At that time, refuse disposal at the site was by means of weekly burning of trash confined to metal cages. The cages were then cleaned out and the ashes compacted and covered with soil. When subsequent rulings outlawed burning, the county converted the site to a transfer station where all refuse is deposited into bins and hauled to appropriate facilities. In 1999, the 40-acre site was patented to the County of San Diego under authority of the Recreation and Public Purposes Act of June 14, 1926, as amended and supplemented (43 U.S.C. 869, et seq.).

3.13.2.2 Mining and Milling Waste

Hazardous mining waste consists of mineralized waste rock, ore stockpiles, and mill tailings. Metallic minerals that occur in the rock have the potential to contaminate soil and water down gradient of the mining waste. Mill tailings may contain traces of metals as well as other chemical constituents, such as acids. Further, mine workings and mine dumps containing sulfide mineralization can create acid mine drainage when exposed to oxygen and water. The potential for this type of hazardous material occurs at abandoned mines on and adjacent to BLM administered land. Abandoned mines and associated features and structures, if 50 years old or older, are considered potential historic resources and are subject to provisions of the NHPA and other heritage preservation mandates. There are two historic mines mapped in Buck Canyon in 1979. One is identified as Montezuma Mine and includes a shaft, tailings, concrete foundations, and metal scatter. When mapped, the mine was assumed to have been active within the last eighty years (since the 1900s), although there were no references regarding this mine in the standard San Diego County histories. The other site record included a prospect shaft with a wooden and metal platform covering it and was assumed to have been related to mining activity within the last fifty years (since the 1930s).

3.13.3 Border Issues

The Planning Area has extensive illegal immigration and other International Border issues with Mexico, including transient populations and illegal dumping activities. In conjunction with resource issues, these International Border issues create challenging management decisions for the BLM and cooperating agencies. Undocumented immigrants (UDI) are known to travel through the Planning Area.

3.13.4 Unexploded Ordnance

Although there are no known occurrences within the Planning Area, there is a low potential for UXOs on public lands to be present as a result of military maneuvers. Given the amount of aircraft used on the various military facilities in the Planning Area, there is a low possibility that a military aircraft could crash and be a source of UXO.

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3.14 Livestock Grazing

BLM's objectives for rangeland management are to carry out the intent of the Taylor Grazing Act of 1934, as amended and supplemented, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978. The objectives are: 1) to periodically and systematically inventory public lands, their resources, and their present and future use projected through land use planning processes; 2) to manage public lands on the basis of multiple use and sustained yield; 3) to manage public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; 4) where appropriate, to preserve and protect certain public lands in their natural condition; 5) to provide food and habitat for fish and wildlife and domestic animals; 6) to provide for outdoor recreation and human occupancy and use; and 7) to manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process.

The Code of Federal Regulations (CFR) allow for implementation of the various acts listed above as they relate to livestock grazing on public lands. The regulations in 43 CFR 4100 address grazing administration. These regulations require, among other things, the implementation of standards and guidelines for grazing administration to achieve fundamentals of rangeland health.

The Taylor Grazing Act of 1934 (TGA) provides for two types of authorized use: (1) a grazing permit, which is a document authorizing the use of the public lands within an established grazing district; and (2) a grazing lease, which is a document authorizing the use of the public lands outside an established grazing district. A grazing district is the specific area within which the public lands are administered in accordance with Section 3 of the Taylor Grazing Act. Public lands outside grazing district boundaries are administered in accordance with Section 15 of the TGA.

A permit or lease would include:

1. The number and kind of livestock

2. The period(s) of use

3. The allotment(s) to be used and
4. The amount of use, in Animal Unit Months (AUMs).

The regulations at 43 CFR 4100 require that permits and leases include terms and conditions that do not preclude BLM from achieving the approved Rangeland Health Standards for the Planning Area.

Other terms and conditions may be specified in grazing permits or leases and their associated site-specific NEPA documents, which would assist in achieving management objectives, provide for proper range management, or assist in the orderly administration of the public rangelands. Some of these terms and conditions, which are not all inclusive, are contained at 43 CFR 4130.3. The other terms and conditions

Terms and conditions for grazing permits and leases must be in conformance with resource and management objectives and program constraints, as identified in land use plans.

BLM allotments in California are classified as Perennial, Ephemeral, or Perennial–Ephemeral. These classifications correspond to the following types of designated rangelands:

- Perennial. Rangeland which consistently produces perennial forage to support a year-round livestock operation.
- Ephemeral. Rangelands that do not consistently produce enough forage to sustain a year-round livestock operation, but may briefly produce unusual volumes of forage to accommodate livestock grazing. There is a Special Rule for Ephemeral Ranges, which is when BLM grants an application for temporary and nonrenewable use, or use on annual or ephemeral ranges. This indicates that BLM has evaluated the merits of the application and has determined that such use would be consistent with achieving resource management objectives specified in land use plans.

- Perennial–Ephemeral. Rangelands which produce perennial forage each year and also periodically provide additional ephemeral vegetation. In a year of abundant moisture and favorable climatic conditions, annual forbs and grasses add materially to the total grazing capacity.

3.14.1 Background

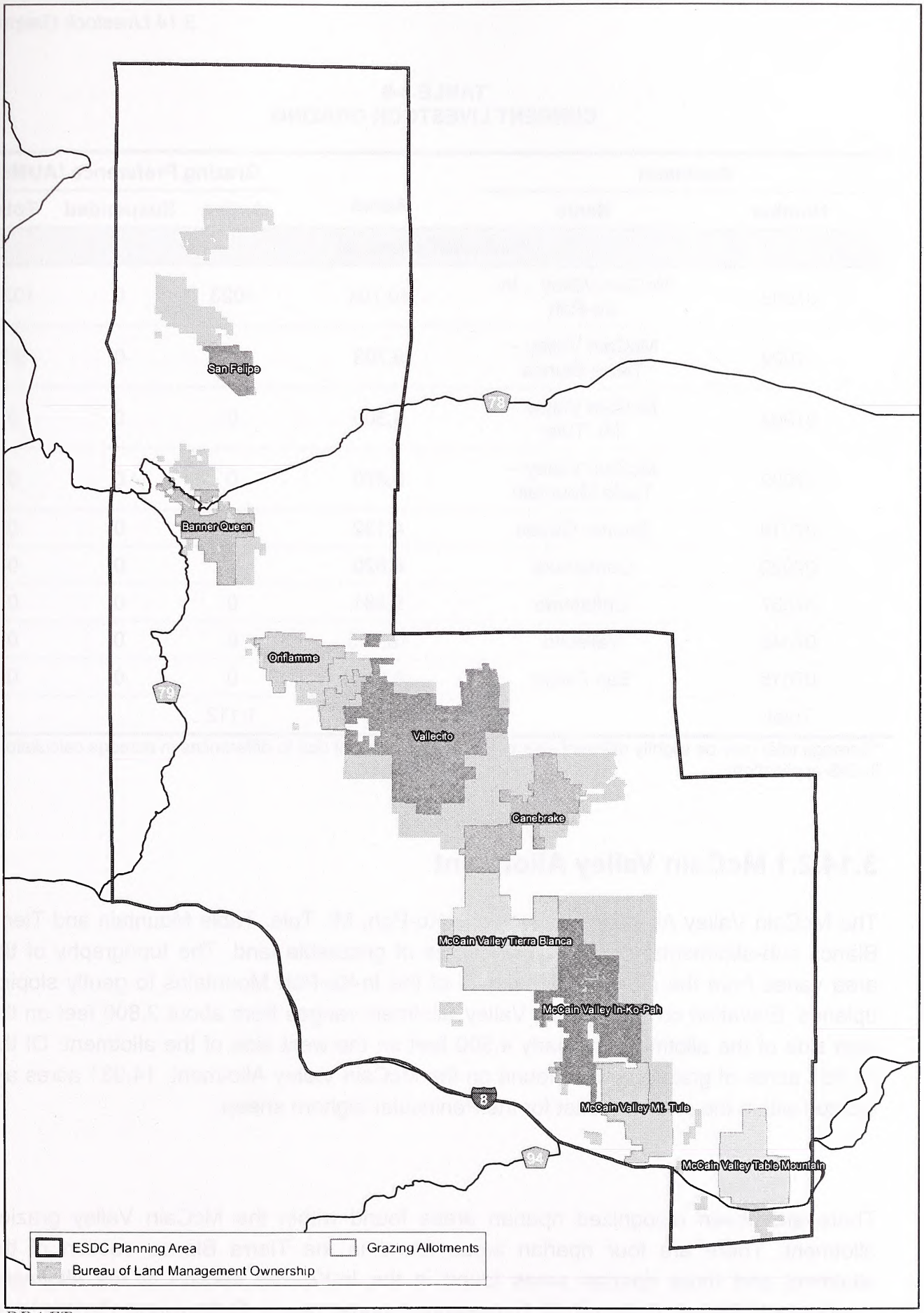
Livestock grazing has occurred for many years in the Planning Area. There are currently nine separate livestock grazing allotments in the Planning Area, as shown in Figure 3-13. These livestock grazing allotments are: Banner Queen (4,131 acres), Canebrake (6,820 acres), McCain Valley – In-Ko-Pah (10,704 acres), McCain Valley – Mt. Tule (5,305 acres), McCain Valley – Table Mountain (5,679 acres), McCain Valley (Tierra Blanca (9,793 acres), Oriflamme (5,281 acres), Vallecitos (15,985 acres) and San Felipe Hills (1,845 acres) (DOI BLM 2005c).

Of these grazing allotments, two are currently actively grazed: McCain Valley – In-Ko-Pah and McCain Valley – Tierra Blanca (DOI BLM 2005c). The Canebrake grazing allotment is currently undergoing the grazing permitting process (DOI BLM 2005c).

A total of 65,543 acres of land are assigned as grazing allotments under jurisdiction of the BLM in Eastern San Diego County (DOI BLM 2005c). Of these 65,543 acres, 34,346 acres are located within Peninsular Bighorn Sheep Critical Habitat (DOI BLM 2005c). Banner Queen and San Felipe Hills are not within Peninsular Bighorn Sheep Critical Habitat. However, Canebrake (6,356 acres within critical habitat), McCain Valley – In-Ko-Pah (6,999 acres within critical habitat), McCain Valley – Mt. Tule (4,015 acres within critical habitat), McCain Valley – Table Mountain (2,051 acres within critical habitat), McCain Valley – Tierra Blanca (1,326 acres within critical habitat), Oriflamme (522 acres within critical habitat), and Vallecitos (13,077 acres within critical habitat) are all located within Peninsular Bighorn Sheep Critical Habitat (DOI BLM 2005c).

3.14.2 Grazing Allotments

Table 3-8 illustrates the current grazing activity which occurs only in the McCain Valley Allotment. The following is a description of all of the grazing allotments within the Planning Area.



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El CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

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CALIFORNIA
Sacramento
Planning Area
El Centro

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
February 2007

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FIGURE 3-13: Grazing Allotments

TABLE 3-8
CURRENT LIVESTOCK GRAZING

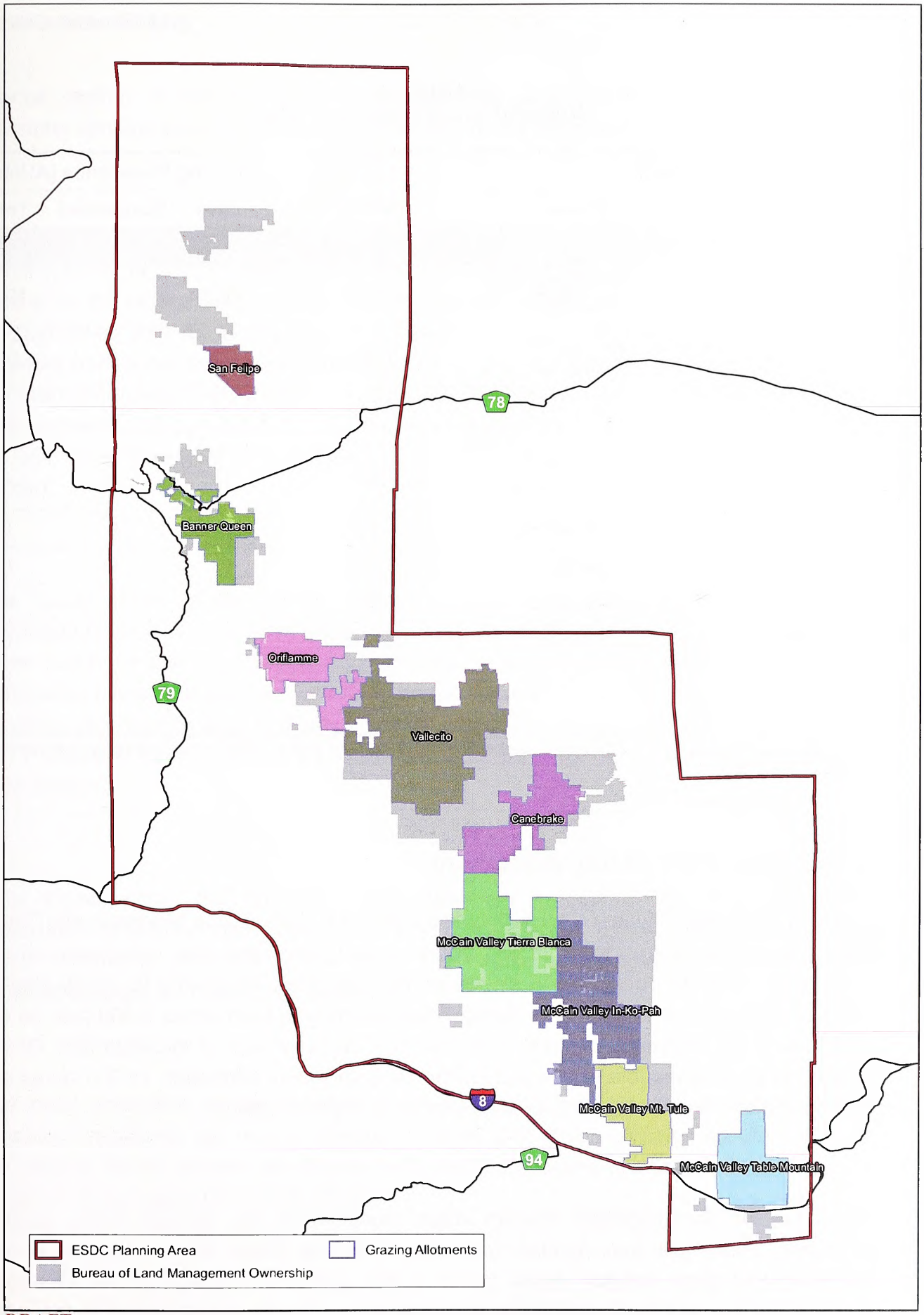
Allotment		Acres	Grazing Preference (AUMs)		
Number	Name		Active	Suspended	Total
Perennial/Ephemeral					
07002	McCain Valley – In-Ko-Pah	10,704	1023	0	1023
07002	McCain Valley – Tierra Blanca	9,793	89	0	89
07002	McCain Valley – Mt. Tule	5,305	0	0	0
07002	McCain Valley – Table Mountain	5,679	0	0	0
07018	Banner Queen	4,132	0	0	0
07020	Canebrake	6,820	0	0	0
07037	Oriflamme	5,281	0	0	0
07045	Vallecito	15,985	0	0	0
07015	San Felipe	1,845	0	0	0
Total:		65,544*	1,112		

*Acreage total may be slightly different elsewhere in the document due to differences in acreage calculations in GIS applications.

3.14.2.1 McCain Valley Allotment

The McCain Valley Allotment (including In-Ko-Pah, Mt. Tule, Table Mountain and Tierra Blanca sub-allotments) covers 31,481 acres of grazeable land. The topography of the area varies from the rocky, steep slopes of the In-Ko-Pah Mountains to gently sloping uplands. Elevation on the McCain Valley Allotment ranges from about 2,800 feet on the east side of the allotment to nearly 4,500 feet on the west side of the allotment. Of the 31,481 acres of grazeable land found on the McCain Valley Allotment, 14,931 acres are located within the critical habitat for the Peninsular bighorn sheep.

There are seven recognized riparian areas found within the McCain Valley grazing allotment. There are four riparian areas found in the Tierra Blanca section of the allotment and three riparian areas found in the In-Ko-Pah section of the allotment: Cottonwood Spring, Cottonwood Campground upper reach, Cottonwood Campground lower reach, end of McCain, upper reach of Four Frogs, lower reach of Four Frogs, and Jacumba Jim. Cottonwood Spring, Cottonwood Campground upper and lower reaches, Cottonwood Campground lower reach, and end of McCain are all found in the Tierra



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EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

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Bureau of Land Management
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07002	McCain Valley – Table Mountain	5,679	0	0	0
07018	Banner Queen	4,132	0	0	0
07020	Canebrake	6,820	0	0	0
07037	Oriflamme	5,281	0	0	0
07045	Vallecito	15,985	0	0	0
07015	San Felipe	1,845	0	0	0
Total:		65,544*	1,112		

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The McCain Valley Allotment (including In-Ko-Pah, Mt. Tule, Table Mountain and Tierra Blanca sub-allotments) covers 31,481 acres of grazeable land. The topography of the area varies from the rocky, steep slopes of the In-Ko-Pah Mountains to gently sloping uplands. Elevation on the McCain Valley Allotment ranges from about 2,800 feet on the east side of the allotment to nearly 4,500 feet on the west side of the allotment. Of the 31,481 acres of grazeable land found on the McCain Valley Allotment, 14,931 acres are located within the critical habitat for the Peninsular bighorn sheep.

There are seven recognized riparian areas found within the McCain Valley grazing allotment. There are four riparian areas found in the Tierra Blanca section of the allotment and three riparian areas found in the In-Ko-Pah section of the allotment: Cottonwood Spring, Cottonwood Campground upper reach, Cottonwood Campground lower reach, end of McCain, upper reach of Four Frogs, lower reach of Four Frogs, and Jacumba Jim. Cottonwood Spring, Cottonwood Campground upper and lower reaches, Cottonwood Campground lower reach, and end of McCain are all found in the Tierra

Blanca section of the allotment. The upper and lower reaches of Four Frogs and Jacumba Jim are found in the In-Ko-Pah section of the allotment.

Cottonwood Spring supports a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Cottonwood Campground upper reach supports potential habitat for the federally endangered arroyo toad as well as a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Cottonwood Campground lower reach supports potential habitat for the federally endangered SWFL and least Bell's vireo, as well as a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The end of McCain riparian area supports potential habitat for the federally endangered SWFL and least Bell's vireo, as well as a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c).

The upper reach of Four Frogs supports good quality habitat for the federally endangered Peninsular bighorn sheep as well as desert fan palm oasis (BLM 2005). The lower reach of the Four Frogs riparian area supports good quality habitat for the Peninsular bighorn sheep, as well as a desert fan palm oasis (DOI BLM 2005c). The Jacumba Jim riparian area supports potential habitat for the federally endangered SWFL and Peninsular bighorn sheep. Jacumba Jim also supports desert fan palm oasis (DOI BLM 2005c).

Soils found within the McCain Valley Allotment consist of the Rositas–Carrizo Association of drained loamy coarse sands to highly gravelly sands on alluvial fans. Also found within this allotment is the Rock Land Association consisting of dominantly exposed bedrock and very large boulders.

The most abundant annual species of importance to grazing include foxtail fescue (*Festuca megalura*), red brome (*Bromus rubens*), soft chess (*Bromus mollis*), and wild oat (*Avena fatua*) as well as various forbs such as filaree (*Erodium cicutarium*) and clover (*Trifolium* spp.) (DOI BLM 2005c).

The key shrubs present on the allotment are: mountain mahogany (*Cercocarpus betuloides*), buckwheat (*Eriogonum fasiculatum*), scrub oak (*Quercus dumosa*), and chamise (*Adenostoma fasiculatum*). The key forbs present on the allotment are deer

weed (*Lotus scoparius*) and filaree (*Erodium circutarium*). The key grasses on the allotment are as follows: needlegrass (*Stipa cernua*) and wheat grass (*Agropyron parishii*).

3.14.2.2 Vallecitos Allotment

The Vallecitos Allotment covers 15,985 acres of grazeable land. Of these 15,985 acres, 13,077 acres occur within critical habitat for the Peninsular bighorn sheep (DOI BLM 2005c).

The topography and elevation of the Vallecitos Allotment varies greatly, from the almost sheer rocky cliffs of the Sawtooth range, to the almost horizontal alluvial fans that spread out from the Potrero and Storm Canyon drainages. Elevation of the Vallecitos Allotment ranges from 1,500 feet in the northeast corner of the allotment to approximately 4,900 feet in the southwest corner of the allotment.

There are three recognized riparian areas found on the allotment: Burnt Trunks, Campbell Springs, and Storm Canyon. The Burnt Trunks riparian area supports an arrowweed riparian community (DOI BLM 2005c). The Campbell Springs riparian area supports potential habitat for the federally endangered SWFL and least Bell's vireo, as well as a desert fan palm oasis woodland (DOI BLM 2005c). Storm Canyon supports migratory habitat for the federally endangered SWFL and the federally endangered least Bell's vireo, Peninsular bighorn sheep and arroyo toad (DOI BLM 2005c). Storm Canyon also houses a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c).

Soils found in the Vallecitos Allotment consist mainly of the Rositas–Carrizo association of drained loamy coarse sands to highly gravelly sands on alluvial fans in the north central portion and the Rock Land association of dominantly exposed bedrock and very large boulders in the remainder of the allotment (DOI BLM 1982).

The vegetation within the allotment is primarily semi-desert chaparral and enriched desert scrub vegetative types. Dominant species include creosote bush (*Larrea tridentata*), desert sunflower (*Viguieria deltoidea parishi*), desert buckwheat (*Eriogonum*

spp.), cheese bush (*Hymenocloa salsola salsola*), burro bush (*Ambrosia dumosa*), brome grass (*Bromus spp.*), galleta grass (*Pleuraphis rigida*) as well as numerous annual herbaceous plants and some annual grasses.

3.14.2.3 Canebrake Allotment

The Canebrake Allotment covers 6,820 acres of grazeable land. Of the 6,820 acres comprising the allotment, 6,356 acres occur within Peninsular Bighorn Sheep Critical Habitat.

The topography of the allotment varies from rocky mountain ranges to gently sloping drainages. The elevation on the Canebrake allotment ranges from approximately 1,000 feet above sea level, up to nearly 5,000 feet above sea level.

There are two riparian areas found within the Canebrake Allotment. These riparian areas are the upper and lower reaches of Pepperwood (DOI BLM 2005c). The upper reach of the Pepperwood riparian area supports a black willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The lower reach of the Pepperwood riparian area supports potential habitat for the federally endangered SWFL, as well as a black willow and Sonoran cottonwood/willow riparian forest (BLM 2005).

Soils found on the allotment consist mainly of the Rositas–Carrizo association of drained loamy coarse sands to highly gravelly sands on alluvial fans. The Rock Land association of dominantly exposed bedrock and very large boulders is also found on the allotment (DOI BLM 1982).

The vegetation within the allotment consists mainly of semi-desert chaparral and enriched desert scrub. Some of the key species found on the allotment are: mountain mahogany (*Cercocarpus betuloides*), burro bush (*Ambrosia dumosa*), four wing saltbush (*Atriplex polycarpa*), California buckwheat (*Eriogonum fasciculatum*), and jojoba (*Simondsia chinensis*).

3.14.2.4 Oriflamme Allotment

The Oriflamme Allotment covers 5,281 acres of grazeable land. Of these 5,281 acres, 522 are within Peninsular Bighorn Sheep Critical Habitat.

The topography of the Oriflamme Allotment is generally very mountainous, with a few plateaus and alluvial lowlands (DOI BLM 1982). Elevation on the allotment ranges from 4,648 feet in the southeast corner down to 2,200 feet in the extreme northeast corner (DOI BLM 1982).

The allotment contains seven designated riparian areas, Oriflamme upper reach, Oriflamme lower reach, Cottonwood Canyon, Lone Willows, Dome Tributary 1, Dome Tributary 2 and Desert Agave (DOI BLM 2005c). The Oriflamme lower reach supports potential habitat for the federally endangered SWFL, least Bell's vireo, and arroyo toad, as well as a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Oriflamme upper reach supports a mixed willow and Sonoran cottonwood/willow riparian forest as well (DOI BLM 2005c). The Cottonwood Canyon riparian area supports potential habitat for the federally endangered SWFL, least Bell's vireo, and Peninsular bighorn sheep (DOI BLM 2005c). The Cottonwood Canyon riparian area supports a Fremont cottonwood community and a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Lone Willows riparian area supports a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Dome Tributary 1 riparian area supports potential habitat for the federally endangered least Bell's vireo, as well as a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Dome Tributary 2 riparian area supports a Fremont cottonwood and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Desert Agave riparian area supports a Fremont cottonwood and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c).

Soils within the Oriflamme Allotment are granitic and volcanic in origin and are moderately fertile under good moisture conditions, and are relatively coarse and well-drained (DOI BLM 1982). The major soil association found on the allotment is the Sheep head association of well-drained, fine sandy loams over broken mica schists (DOI BLM 1982).

The vegetation found within the Oriflamme Allotment consists mostly of semi-desert chaparral and chamise and mixed chaparrals. Dominant and important species found on

the allotment include: desert needle grass (*Stipa speciosa*), galleta grass (*Pleuraphis rigida*), wheat grass (*Agropyron spp.*), buckwheats (*Eriogonum spp.*), burro bush (*Ambrosia dumosa*), cup leaf ceanothus (*Ceanothus greggii*), mountain mahogany (*Cercocarpus betuloides*), ratany (*Krameria grayi*), brittle bush (*Encelia farinosa*), cat claw (*Acacia greggii*), chamise (*Adenostoma fasciculatum*), oaks (*Quercus spp.*), creosote bush (*Larrea tridentata*), and many annual grasses and herbaceous plants (DOI BLM 1982).

3.14.2.5 Banner Queen Allotment

The Banner Queen Allotment covers 4,131 acres of grazeable land. None of the Banner Queen Allotment is located within the Peninsular Bighorn Sheep Critical Habitat.

The topography of the allotment is mostly mountainous, with some plateaus and one canyon (Chariot Canyon) found in a roughly northwest to southeast direction through the middle of the allotment (DOI BLM 1982). Elevations range from about 4,560 feet above sea level near Inspiration Point down to 2,680 feet above sea level near the Banner trading post (DOI BLM 1982).

Eight recognized riparian areas are found within the allotment: Chariot Canyon upper reach, middle reach and lower reach, as well as Red Water, Banner, Rusty Pipe, Foundation and Desert Queen.

The Chariot Canyon upper reach riparian area supports good quality habitat for the federally endangered SWFL and arroyo toad. The upper reach of Chariot Canyon also supports potential habitat for the federally endangered Peninsular bighorn sheep and least Bell's vireo, as well as a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The middle reach of Chariot canyon supports potential habitat for the federally endangered Peninsular bighorn sheep and good quality habitat for the federally endangered arroyo toad, as well as a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The lower reach of Chariot Canyon supports potential habitat for the federally endangered arroyo toad, as well as a Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Red Water riparian area supports potential habitat for the federally endangered SWFL and least Bell's vireo, as well as a Fremont cottonwood and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Rusty Pipe riparian area contains the following species: ripgut grass (*Bromus diandrus*), cheat grass

(*Bromus tectorum*), black mustard (*Brassica nigra*), and sycamore (*Platanus* spp.). The Foundation riparian area contains a mixed willow and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Desert Queen riparian area contains a Fremont cottonwood and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c). The Banner riparian area contains potential habitat for the federally endangered SWFL, least Bell's vireo, and Peninsular bighorn sheep, as well as a Fremont cottonwood and Sonoran cottonwood/willow riparian forest (DOI BLM 2005c).

Soils within the Banner Queen Allotment mostly comprise material derived from mica schist, gabbro, granodiorite, and quartz diorite. These soils are only moderately fertile under moist soil conditions and are relatively coarse and well-drained (DOI BLM 1982).

The native vegetation within the allotment is primarily semi-desert chaparral, mixed chaparral, chamise chaparral, and riparian woodland vegetative communities. Dominant and important species include: desert needle grass (*Stipa speciosa*), chamise (*Adenostoma fasciculatum*), cup leaf ceanothus (*Ceanothus greggii*), buckwheats (*Eriogonum spp.*), oaks (*Quercus spp.*), mountain mahogany (*Cerocarpus betuloides*), jojoba (*Simmondsia chinensis*), saltbush (*Atriplex canescens*), and holly leaf cherry (*Prunus ilicifolia*) (DOI BLM 1982).

3.14.2.6 San Felipe Hills Allotment

The San Felipe Hills Allotment encompasses 1,845 acres of grazeable land. The San Felipe Hills Allotment does not fall within the critical habitat for the Peninsular bighorn Sheep (DOI BLM 2005c).

The topography of the allotment varies from gently sloping alluvial fans to rough, steep hillsides. The southwestern half of the allotment is quite steep, averaging a 40 percent slope. The elevation on the allotment ranges from 2,675 feet above sea level in the southwestern corner up to 3,880 feet above sea level (DOI BLM 1982).

The main soil groups found within the allotment are the Rosita series (loamy, coarse sand), the La Posta sheep head complex (loamy, coarse sand and cobbly fine sandy loam), acid igneous rockland complex (loamy, coarse sand) and sloping gullied land complex (gravelly sand) (DOI BLM 1982).

The predominant vegetation on the San Felipe Hills Allotment is that of the chamise chaparral type. Chamise chaparral covers approximately 63 percent of the allotment, mixed chaparral covers about 19 percent of the allotment and semi-desert steep chaparral covers about 18 percent of the allotment (DOI BLM 1982).

The most important perennial species found on the San Felipe Hills Allotment are chamise (*Adenostoma fasciculatum*), mountain mahogany (*Cercocarpus betuloides*), sugar bush (*Rhus ovata*), and desert needle grass (*Stipa speciosa*) (DOI BLM 1982). Important annual species found on the allotment include filaree (*Erodium cicutarium*), six-week fescue (*Festuca octoflora hirsuta*), soft chess (*Bromus mollis*), and foxtail (*Festuca megalura*).

3.15 Lands and Realty

BLM manages a diverse combination of land and resources in the Planning Area, including land use for utility corridors, communication sites, land tenure issues, land use authorizations, withdrawals, and renewable energy. Table 3-9 provides the existing situation for lands and realty within the Planning Area.

TABLE 3-9
EXISTING ENVIRONMENT FOR LANDS AND REALTY

Resource Use	Existing Environment
Miscellaneous ROWs	
Roads/Ditches & Canals	1.61 miles (5.81 acres)
Oil and Gas, other energy pipelines	0
Electrical/Telephone Lines	26.02 miles (336.80 acres)
Non-energy pipelines/other linear	0.37 miles (4.40 acres)
Renewable Energy ROWs	
Wind Energy-testing facility (3-yr interim)	17,000 acres, 4 met towers
Wind Energy Potential (excluding WAs and WSAs)	12,764 acres
Permanent Facilities	0
Solar Energy[1]	0
Land Tenure	
Available for Disposal	1,715
Communication Sites	
Table Mountain	2
Banner Grade	1
Land Use Permits	
Apiary	3 permits (8 sites, 840 hives)
Film permits	No permits in last 18 years issued in Planning Area
Existing Withdrawals	
WAs (withdrawn from all forms of land entry)	48,333
PLO 2460 - McCain Valley National Cooperative Land and Wildlife Management Area	20,293[2]
PLO 2693 - Jacumba National Cooperative Land and Wildlife Management Area	6,403[2]

[1] Solar potential likely discounted due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat, and VRM classes.

[2] These lands are withdrawn from application under certain non-mineral public land laws and from disposition under the homestead, desert land and scrip selection laws. The above acreage removes any overlap with the WAs.

3.15.1 Utility Corridors and Communications

Figure 3-14 shows the location of the utility corridor and communications sites.

3.15.1.1 Utility Corridors

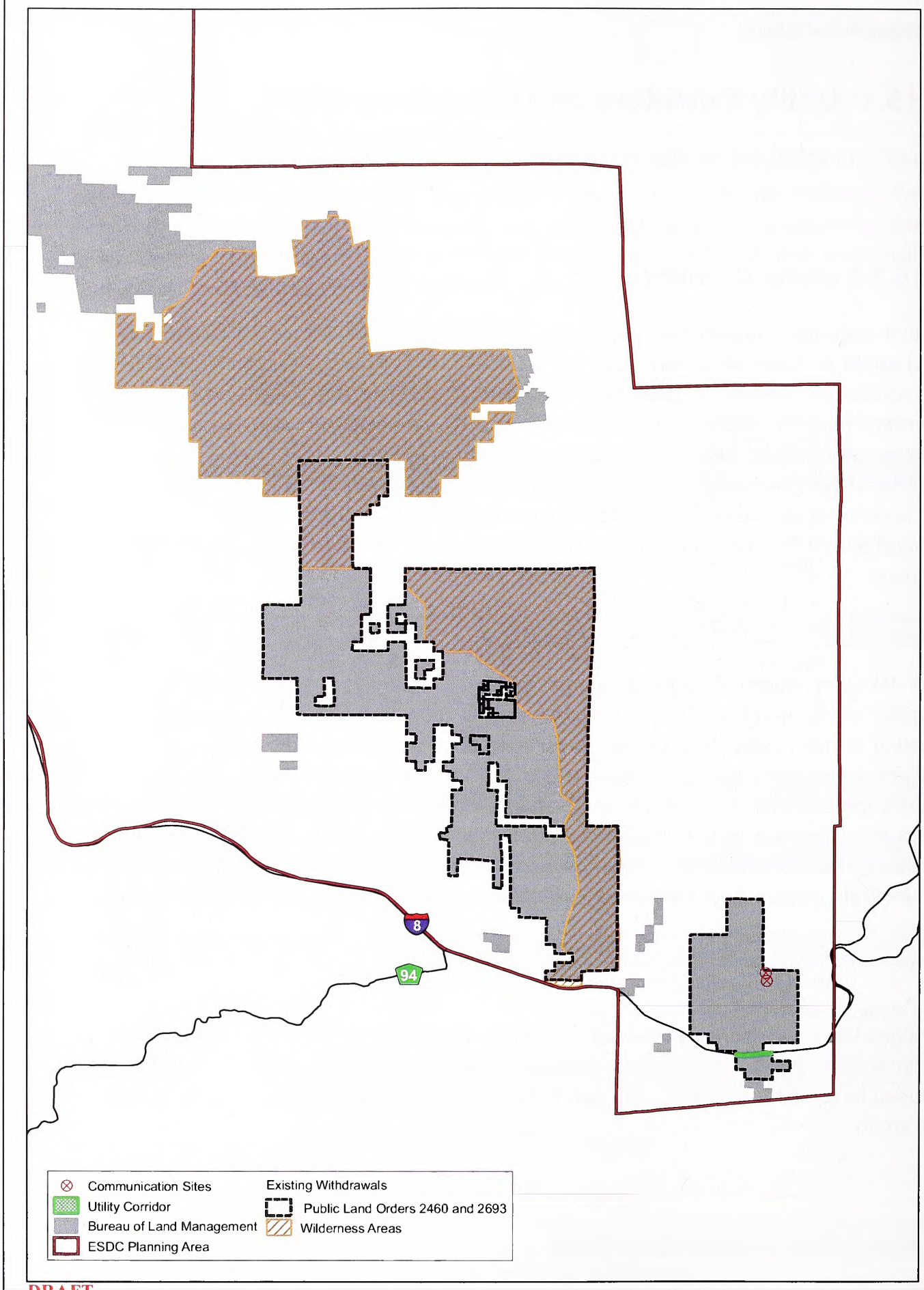
A joint use utility corridor was established by the 1981 MFP across 1.5 miles of public land south of Table Mountain. This corridor is an extension of Corridor N described in the California Desert Conservation Area (CDCA) Plan. The CDCA Plan assigned Corridor N a width of 2 to 5 miles. In the Planning Area, however, a maximum of a 2-mile wide corridor can be assumed, since public lands in the area are limited. Therefore, the corridor encompasses approximately 1,920 acres. There were no existing facilities within the corridor at the time of designation. Since designation, a 500-kV transmission line and several buried fiber optic networks and telephone lines have been constructed within the corridor.

The *Western Regional Corridor Study* (1993) has identified one potential east-west corridor which traverses the Planning Area. This proposed corridor corresponds to the existing corridor described above. A number of new transmission line proposals are under consideration by local groups and industry. One such alternative includes a new 500 kV transmission line from the Salton Sea area west to San Diego. The route has not been identified, but would likely cross some public lands within the Planning Area. In addition, potential development of renewable energy resources within the Planning Area would likely require new transmission facilities and/or upgrading of existing distribution lines.

Designation of additional east–west corridors will be difficult since any corridors to the north would have to cross Anza–Borrego Desert State Park, which in the past has refused to consider corridors. The International Boundary precludes a corridor further to the south.

3.15.1.2 Communication Sites

There is one established communication site at Table Mountain, currently occupied by two facilities, the USBP and a commercial cellular site with several customers (non-commercial users). Although the 1981 MFP provides for expansion of this site, such



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EI CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

3 0 3 6
Miles
3 0 3 6
Kilometers

N
W E
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CALIFORNIA
Sacramento
Planning Area
El Centro

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February 2007

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FIGURE 3-14: Communication Sites, Existing Withdrawal, and Utility Corridor

action has been problematic. The USBP has expressed concern that certain types of uses would cause interference with their equipment, which could potentially endanger the lives of their agents. In addition, the area contains sensitive cultural and wildlife resources. A second communication site is located in the vicinity of Banner Grade. The only occupant at this time is the County of San Diego, with one facility on the site. There are no communication site management plans for these sites. Demand for additional communications capabilities is expected to result in requests to establish new sites in the future.

3.15.2 Land Tenure

3.15.2.1 Access (Easement) Acquisition

Access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands. The lands and realty program primarily assists in the acquisition of easements to provide for legal access where other programs have identified a need.

Access to the public lands within the Planning Area is an issue of concern to both agency personnel and the public. The existing fragmented ownership pattern of BLM lands intermingled with private, state, and other federal lands complicates the access situation.

The 1981 MFP provides planning guidance with respect to access. Some progress has been made in improving access to public lands; however there are still areas within the Planning Area that lack legal access. Generally speaking, access is acquired from willing adjacent landowners on a case-by-by case basis and as needs or opportunities arise. To date, no easements across private lands within the Planning Area have been purchased; however, there is one easement on the Cottonwood Canyon property that was donated to BLM.

3.15.2.2 Land Status and Jurisdiction

Public lands within the Planning Area consist primarily of five distinct blocks scattered diagonally from the northwest to the southeast. Land ownership within the Planning Area is composed of federal, state, Indian reservations, and private. The public lands within

the Planning Area come under the jurisdiction of the El Centro Field Office, located in El Centro, California.

Privately-owned lands occur widely throughout the Planning Area. The majority of the larger private land blocks tend to occur in the valleys where the land is more fertile and water is available for agricultural production, primarily in the form of cattle grazing. In addition, there are a few small residential communities and rural home sites intermingled throughout.

Two state parks occur within the Planning Area. Cuyamaca Rancho State Park is situated in the southwestern part of the Planning Area and Anza-Borrego Desert State Park along the eastern side. Cleveland National Forest lands are situated in the southwestern part of the Planning Area. These lands are managed primarily for recreation. There are five Indian reservations located in the northwest corner and south-central part of the Planning Area.

3.15.2.3 Public/Private Interface

Along with private inholdings, a number of small communities are located within the Planning Area. The most urban development has occurred in and around the towns of Julian and Pine Valley. There are several other small communities elsewhere in the Planning Area, such as Jacumba, Boulevard, Descanso, Mount Laguna, Guatay, Whispering Pines, and Ranchita.

All of these communities are experiencing an increase of population. Construction of both primary and second homes has been rapidly taking place in the mountainous areas. In addition to agricultural, recreational uses and tourism has become a primary source of income in these areas.

Generally, the Planning Area does not have a public/private land interface problem. There are situations throughout the area where public and private lands intermingle and create property boundaries which do not conform to logical natural topographic features. This occasionally complicates management of activities and resources such as prescribed burns, livestock grazing, access, and key wildlife habitat. Through 2000-2004, persistent drought fueled several devastating fires resulting in the loss of life and

property in Southern California areas. The BLM's National Fire Plan and California Fire Plan emphasize protection of private property and the need for land management agencies to work closely with the local communities to promote fire safety.

3.15.2.4 Land Tenure Adjustment

Land tenure (or land ownership) adjustment refers to those actions that result in the disposal of BLM lands or the acquisition of nonfederal lands or interests. The 1981 Eastern San Diego County Management Framework Plan (MFP) identified certain non-federal land parcels for acquisition to facilitate management of critical resource values. BLM has acquired, through purchase and donation, a number of non-federal parcels of land in the In-Ko-Pah ACEC, McCain Valley Wildlife Management Area, Sawtooth Mountains Wilderness, and Cottonwood Canyon. The majority of the acquisitions consist of Land and Water Conservation Fund (LWCF) purchases of non-federal parcels within congressionally-designated wilderness areas. Upon availability of additional LWCF or compensation funds, additional acquisitions of the remaining identified private inholdings, especially within the McCain Valley, Carrizo Gorge and Table Mountain areas, is desirable to aid in the protection of wildlife and archaeological resources and to facilitate recreation programs.

On July 25, 2000, the Federal Land Transaction Facilitation Act (FLTFA), referred to as the "Baca Bill", became Public Law 106-248. The Baca Bill allows BLM to utilize funds from land sales and exchange equalization payments to acquire lands, if such acquisition is found to be in the public interest. Prior to the Baca Bill, receipts from land sales went primarily to the U.S. Treasury and were not available to BLM. To meet the criteria for disposal under the Baca Bill, public lands must have been identified for disposal through a management plan approved prior to July 25, 2000 when FLTFA became law. FLTFA will expire in 2010 unless amended through legislation.

The 1981 Eastern San Diego County MFP suggested that there may be some merit in adjusting boundaries between Anza–Borrego Desert State Park and BLM lands. For example, the San Ysidro Mountain area is small enough and distant enough from BLM offices that management by the Park might be more effective. Conversely, areas in the southern end of the park could be managed by BLM. The park, however, appears to be more interested in acquiring additional areas rather than adjusting boundaries. The State of California has not exhausted its in-lieu selections, so should the state wish to use its in-lieu selections to acquire lands within this Planning Area that meet the criteria for disposal, that is its privilege. No other major disposals to the state should be made under

the R&PP Act, unless they are a part of a boundary adjustment with BLM acquiring state land adjacent to major BLM parcels (see below for a discussion of R&PP leases).

The current lands identified for disposal in the Eastern San Diego County MFP are shown on Figure 3-15.

3.15.3 Land Use Authorizations

Land use authorizations include various authorizations and agreements to use BLM-administered land, such as ROW grants, leases, and temporary use permits under several different authorities. BLM analyzes requests for land use authorizations on a case by case basis.

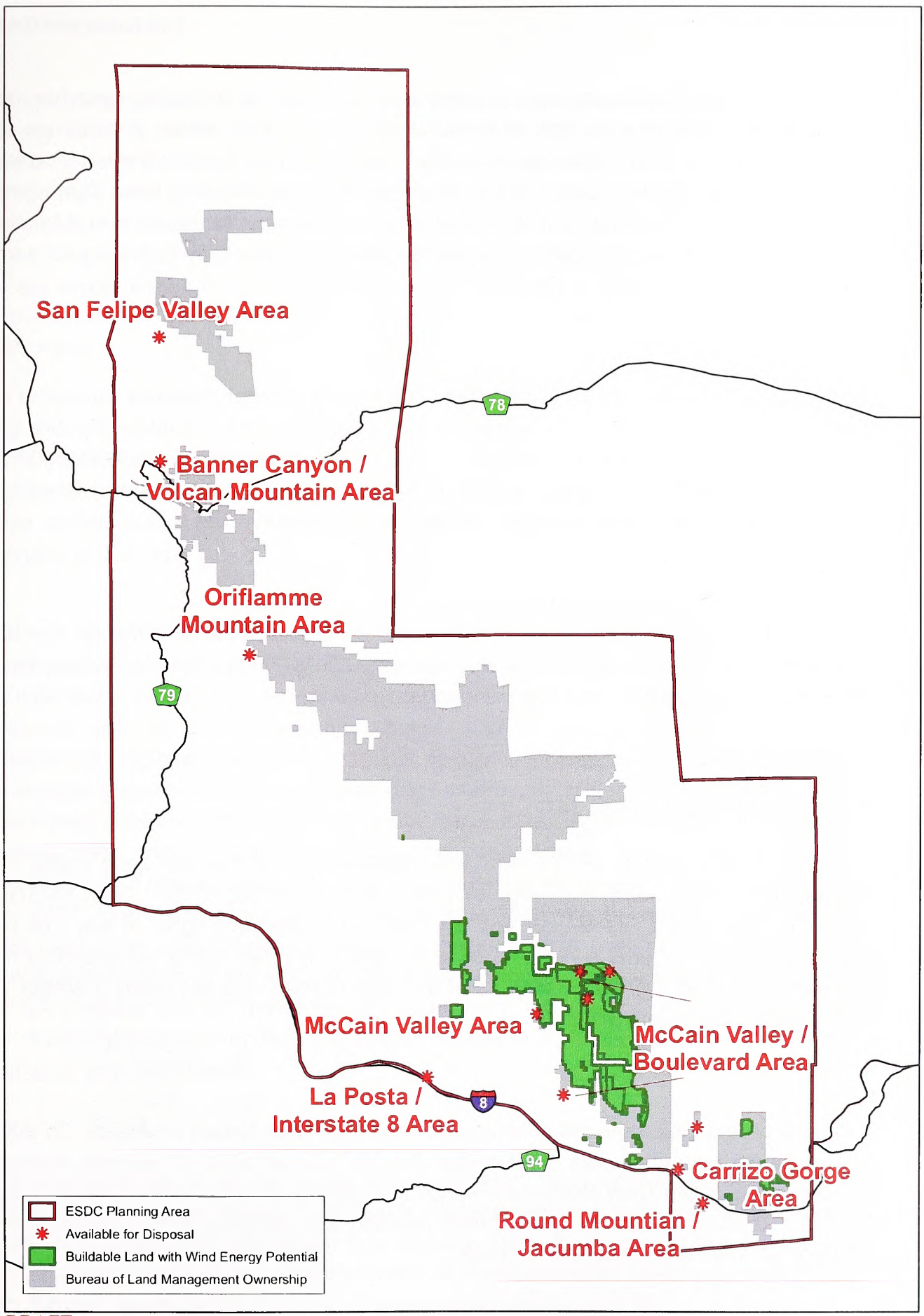
3.15.3.1 Land Use Permits

BLM administers several temporary permits involving less than three acres of land. These permits are issued for a term of up to three years and are for the temporary use of public lands. The only long-term permits in the Planning Area are three apiary permits, which include a total of eight sites, each approximately 0.25 acre in size. These permits allow for the annual servicing of bee hives at several sites scattered throughout the Planning Area.

There was one R&PP Lease in the Planning Area, a sanitary landfill near Julian. The landfill has since been patented out of Federal ownership to the County of San Diego. There is one existing R&PP lease (Mineral Springs lease) in the Planning Area. Aqua Caliente Springs is leased to San Diego County for use as a park.

3.15.3.2 Rights-of-Way

Existing grants are for a myriad of different facilities and are held by private individuals and groups, as well as by various business and government entities. Roads, power transmission and distribution lines, and telephone lines are the most common facilities to be granted for ROWs. Examples of additional types of ROW facilities include water and gas pipelines, communication sites, ditches, railroads and fiber optic lines.



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EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

3 0 3 6
Miles
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Kilometers

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FIGURE 3-15: Lands Available for Disposal and Wind Energy Potential

Interstate 8 is the major east-west highway and traverses the Planning Area from the southeast and proceeds to the west for about seven miles where it becomes the southern boundary of the Planning Area. The San Diego and Arizona Eastern Railroad meanders through Carrizo Gorge in the southern part of the Planning Area. The railroad was not used from 1976 through 2003 due to severe damage to the track and trestles. Carrizo Gorge Railway, Inc. has reopened the line and is currently operating for cargo only.

As previously described, there is one major utility ROW corridor presently traversing the Planning Area. The corridor runs east/west across approximately 1.5 miles of public land south of Table Mountain near Interstate 8. The corridor currently contains one 500 kV transmission line that originates in San Diego and crosses the Colorado River into Arizona, and several buried fiber optic networks and telephone lines.

There are no ROW exclusion or avoidance areas in the existing MFP, although specially designated areas (i.e., designated wilderness and WSAs) do restrict such development under their own regulatory or policy provisions.

Revised Statute 2477 (R.S. 2477)

In 1976, Revised Statute (R.S.) 2477 was repealed by the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1701 et seq. Pub. L. No. 94-579 § 706(a), 90 Stat. 2743. FLPMA did not, however, terminate valid rights of way that had been established under R.S. 2477 prior to its repeal. Instead, Congress specified that any valid R.S. 2477 ROWs existing as of the date FLPMA was approved (October 21, 1976), would continue in effect.

The most recent Departmental guidance on R.S. 2477 was issued on March 22, 2006. The guidance document was issued after the 10th Circuit court of appeals issued a decision in *Southern Utah Wilderness Alliance v. Bureau of Land Management, 425 F. 3d 735 (10th Cir. 2005)*. The Department revoked the previous policy guidance from January 22, 1997 and December 7, 1988.

R.S. 2477 is a complex and controversial issue with far-reaching implications for the management of federal lands throughout the West. R.S. 2477 was enacted in 1866,

during a period when the federal government promoted settlement of the West. It was a primary authority under which many state and county highways were constructed over federal lands in the West. By its general wording, *"[T]he right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted"* the act minimized the administrative burden on the federal government to authorize the construction of each highway across the largely undeveloped lands in the West. While the act accomplished its goal of facilitating development, the general wording and a lack of documentation of R.S. 2477 rights continue to be sources of disagreement and controversy.

Although FLPMA repealed R.S. 2477, it did not terminate existing R.S. 2477 ROWs. Section 701 of FLPMA states that nothing *"...shall be construed as terminating any valid lease, permit, patent, right-of-way, or other land use authorization existing on the date of approval of this Act."*

Some paved roads, which serve as major transportation routes, have no ROW documented in public land records. Many routes, claimed as R.S. 2477 ROW, came into existence with no documentation in public land records. National parks, national monuments, national preserves, national forests, national wildlife refuges, national conservation areas, other special areas (e.g., designated wilderness areas), and military bases were reserved after 1866. Generally, these areas were reserved subject to valid existing rights (rights established before the reservation). Some public lands were conveyed out of federal ownership after 1866, also subject to valid existing rights. Under R.S. 2477, routes which came into existence after 1866 may be existing rights, but they must have been established: (1) before reservation for a public purpose, withdrawal, patent, mining claim, or transfer out of federal ownership; and (2) before the passage of FLPMA (October 21, 1976). Holders of existing rights retain a right of access associated with those rights without an R.S. 2477 ROW. However, BLM approval is required prior to driving on any closed route.

BLM decisions about which routes are designated open or limited and which are designated closed are based on resource management concerns and legal mandates (such as in designated wilderness) in a process called "route designation." Routes will be designated during this planning process as implementation actions, in conformance with the plan decisions which designate areas open, closed or limited.

A route designated "open" does not mean that BLM believes the route to be an R.S. 2477 ROW. Conversely, a route not designated as open does not reflect a belief that an R.S. 2477 ROW does not exist. The closure of a route does not modify or extinguish any R.S. 2477 ROW that may exist. Holders of valid ROWs, retain a right of access without an R.S. 2477 ROW. However, BLM approval is required before driving on any closed route. Closed routes outside WAs will remain closed until R.S. 2477 assertions are processed or until the routes are opened using the route designation process.

3.15.3.3 Realty Trespass

Realty trespass, specifically unauthorized occupancy and use, is not a significant problem in the Planning Area. Unauthorized occupancies are typically encroachments of buildings or yards onto public land and have usually existed for many years. These situations are most often discovered in the course of surveying projects. Unauthorized ROW situations generally involve negligence. Resolution of such situations depend upon individual circumstances and may include issuance of temporary land use permits, leases or ROWs, disposal of the land either by sale or exchange, or removal of the unauthorized use.

3.15.4 Withdrawals

The existing withdrawals in the Planning Area are described below and illustrated on Figure 3-14.

Public Land Order 2460 (1961). PLO 2460 established the McCain Valley National Cooperative Land and Wildlife Management Area. The PLO withdrew approximately 39,000 acres of public lands from application under certain non-mineral public land laws and from disposition under the homestead, desert land and scrip selection laws. Scrip is a certificate which allowed the owner to acquire a certain number of acres from vacant, unappropriated public lands. These land bounties were offered by the federal government prior to the Civil War as an incentive to recruits who joined the army and navy. The lands are managed by the BLM for the development, conservation, utilization and maintenance of their natural resources, including their recreation and wildlife resources.

Public Land Order 2693 (1963). PLO 2693 established the Jacumba National Cooperative Land and Wildlife Management Area. The PLO withdrew approximately 6,400 acres of public lands from application under certain non-mineral public land laws and from disposition under the homestead, desert land and scrip selection laws. They are managed by the BLM for the development, conservation, utilization and maintenance of their natural resources, including their recreation and wildlife resources.

In 1994 the California Desert Protection Act (1994) designated two Wilderness Areas within the Planning Area withdrawing them from all forms of land entry: Carrizo Gorge and Sawtooth Mountains. Consequently, most BLM land with resources that need to be protected by withdrawals already has such protection in place.

In addition, an International Boundary Reservation established by the Presidential Proclamation of May 27, 1907, restricts use within sixty feet of the international boundary between the United States and the Republic of Mexico, within the State of California and the Territories of Arizona and New Mexico. The Proclamation reserves all public lands within this 60' wide strip, from entry, settlement or other form of appropriation under the public land laws. This area is to be kept free from obstruction as a protection against smuggling between the U.S. and Mexico. This reservation affects approximately one mile of BLM-administered public lands within the Planning Area, roughly seven acres.

3.15.5 Renewable Energy

Renewable energy includes solar power, wind, biomass, and geothermal resources. As demand has increased for clean and viable energy to power the nation, consideration of renewable energy sources available on public lands has come to the forefront of land management planning.

In cooperation with the National Renewable Energy Laboratory (NREL), an agency of the Department of Energy has developed a Renewable Resource Assessment Project. The findings of this project are contained in a 2003 report entitled, *Assessing the Potential for Renewable Energy on Public Lands*. The report identified criteria that are considered in establishing potentials for various types of renewable energy. It also summarizes these potentials and identifies the top 25 BLM Planning Areas with the highest potentials for various classes of renewable energy development. The Planning

Area was included in the top 25 planning units with the highest potential for solar (concentrating solar power, photovoltaics) and wind resources.

Areas such as McCain Valley, Oriflamme Mountain and Banner Grade have been identified by NREL as having a moderate to high potential for wind resources. The BLM has received numerous inquiries regarding these areas and others within the Planning Area. One ROW has been issued in the McCain Valley area for wind energy site testing and monitoring. The ROW allows only the installation of met towers. The ROW holder has established no right to development and is required to submit a separate application to BLM for review, analysis, and separate approval for any future wind energy development. Future applications for testing and/or development would be processed in accordance with the policies and best management practices established by the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (2005).

To date, there have been no inquiries regarding the development of solar energy within the Planning Area. Demand for renewable energy development, particularly wind, is expected to increase over the planning period, and management actions are necessary to provide for future renewable energy growth while protecting sensitive resource values.

A recent study conducted by PPM Energy (2006) modeled the potential for wind energy on BLM lands within San Diego County. The model excluded cities, water bodies, national and state parks, national forests, military bases, WAs, WSAs, national conservation areas, wild and scenic rivers, military use areas, and tribal lands. The remaining lands were then assessed for wind speed; only areas that supported wind speeds of Class 4 or higher were retained. This was further refined based on accessibility to an existing electrical transmission line, excluding any lands that were further than 20 miles from existing 115-kV or higher transmission lines. BLM refined this further to only include BLM-administered lands within the Planning Area. Based on this analysis, a total of 14,269 acres of land has potential to support wind energy on BLM-administered lands in the Planning Area. This includes ACECs and critical habitat for federally listed species.

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3.16 Mineral Resources

The Planning Area is in the southern section of the Peninsular Ranges province of California. Underlying the Planning Area are series of granitic intrusive rocks ranging in age from Precambrian (600 million years ago) to Cretaceous (65 million years ago). Composition varies from granite to gabbro. Localized within the plutonic rocks are zones and veins of pegmatite rocks. Plutonic rocks comprise and dominate the Volcan and Cuyamaca Mountains along the eastern part of the Planning Area, the Sawtooth and Laguna Mountains in the south part, and a portion of the Santa Rosa Mountains in the north area. Within the granitic rocks are pendants of metasedimentary rock of Cretaceous age. The metamorphic rocks range in composition from mica schist through granite gneiss. Small units of meta-carbonate rocks are located principally in the Jacumba area of the Planning Area.

Within the Planning Area are three areas of known, historic, mineral development. These include the Julian District, the Metal Mountain District (located northwest of McCain Valley), and the Sacatone District located in the Sacatone Spring/Tule Mountain area southeast of McCain Valley). All three mining districts include public land managed by the BLM.

Three areas in the northern, central, and southern portions of the Planning Area have been classified as potentially valuable for geothermal resources because hot springs are present. Two of these areas, centering on Agua Caliente and Jacumba, are located on public lands. The area has no known potential for oil, gas, sodium, or potash.

There are few historic sand and gravel sites present within the Planning Area and currently no commercial activity. This lack of activity may be due to the poor accessibility of the Planning Area. High mineral potential exists in one area of McCain Valley for a rock quarry and the San Diego region has a need for high quality sand, gravel, and rock resources; however, access is limited due to the presence of private in-holdings surrounding this area. In addition, the presence of OHV activities in the Lark Canyon area of McCain Valley precludes the potential for establishing a safe site for a rock quarry.

3.16.1 Mineral Resource Potential

The potential for the accumulation and occurrence of mineral resources are classified according to the BLM's system as described in Manual 3031 (DOI BLM 1985) and Manual 3060. The classification is based on a series of potential ratings, ranging from undefined (U) based on a lack of information, through moderate (M) where geologic conditions and past activity support that the area may contain mineral deposits, to high (H) where geologic conditions, past activity and production, and or sampling show that an occurrence of a mineral deposit is likely to be present. The potential ratings are qualified by an attendant level of confidence based on the availability of supporting information. Appendix I is an explanation of the BLM manual 3030 classification.

BLM completed a classification of the mineral resources within the Planning Area in 2006. The potential ratings were assessed for various management areas such as designated wilderness and WSAs, ACEC, unappropriated BLM-managed lands, and all other lands in the Planning Area. The classification was done by commodity groupings. Potential deposits of gold, tungsten, manganese were grouped as metallic minerals; deposits of limestone, commercial precious and semi-precious gemstones and mineral specimens, gypsum, and silica were grouped as nonmetallic/industrial minerals, and deposits of sand, gravel, clay, dimension and crushed rock and stone used in the building industry and arts were grouped as construction materials.

No California Surface Mining and Reclamation Act (SMARA) classifications have been completed for the Planning Area. A mineral resource potential report, prepared by the USGS, found undiscovered gem-grade minerals (kunzite, aquamarine) in pegmatite dikes in the vicinity of Mount Tule in the western part of the study area (USGS 1987). No oil, gas, coal, geothermal, or other mineral resources or resource potential were identified in either the Sawtooth Wilderness or Carrizo Gorge WSAs (USGS 1987). The Carrizo Gorge WSA has moderate potential for resources.

3.16.2 Locatable (Metallic and Non-metallic) Mineral Potential

3.16.2.1 Potential for Accumulation and Occurrence of Metallic and Non-metallic Minerals

Table 3-10 lists the principal past producers in the Planning Area. Lode gold (quartz vein) operations dominate production. Tungsten and silver deposits were generally

TABLE 3-10
PAST PRODUCING MINES FOR METALLIC MINERALS WITHIN THE PLANNING AREA

Name	Type Operation	Commodity	Name	Type Operation	Com-modity
Ben Hur Mine	Underground	Silver	Lucky Chuck Mine	Underground	Gold
Carson Ranch Placer Claim	Placer	Gold	Lucky Strike Mine	Underground	Gold
Chieftan Mine	Underground	Gold	Majestic Mine Group	Underground	Gold
Cincinnati Belle Mine	Underground	Gold	Metal Mountain Mine	Underground	Tungsten
Crown Point Mine	Underground	Tungsten	Mica Gem Group	Surface	Tungsten
Desert Star Mining Co	Proc Plant	Tungsten	Montezuma Mine	Underground	Gold
Eagle Mine	Underground	Gold	North Star Mine	Underground	Gold
El Dorado Claim	Unknown	Gold	Oriflamme Mine	Underground	Gold
Elevada And Aguajito Group	Underground	Gold	Owens Mine	Underground	Copper/Silver
Ella Mine Group	Underground	Gold	Padlock Mine	Underground	Gold
Gold Cross Group	Underground	Gold	Payoff Mine	Underground	Tungsten
Gold King Group	Underground	Gold	Ranchito Mine	Underground	Gold
Gold Standard Group	Underground	Tungsten	Ready Relief Mine	Underground	Gold
Golden Gem Group	Underground	Gold	Rose Quartz Mine	Underground	Silver
Granite Mountain Mine	Underground	Gold	San Diego Mine	Surf-Underg	Gold
Grapevine Star Mine	Underground	Gold	Stonewall Mine	Underground	Gold
Harper Ranch Mine	Underground	Gold	The Noble Mines	Surf-Underg	Gold
Helvetia Mine	Underground	Gold	Tom Scott Mine	Underground	Gold
High Peak Mine	Underground	Gold	Van Wert Mine	Surf-Underg	Gold
Kentucky Mine Group	Underground	Gold	Warlock Mine Group	Underground	Gold
Last Dollar Prospect	Surface	Tungsten	Washington Mine	Underground	Gold
Live Oak Group	Surface	Tungsten			

produced as a by-product from scheelite bearing quartz vein gold deposits. Most production was limited to the Julian area.

Though prospecting and some development have occurred from the 1890s to the present, no significant economic deposits have been mined in the region, and there are currently no mines in producing status. A few gold and silver claims are presently being worked as a recreational activity on weekends.

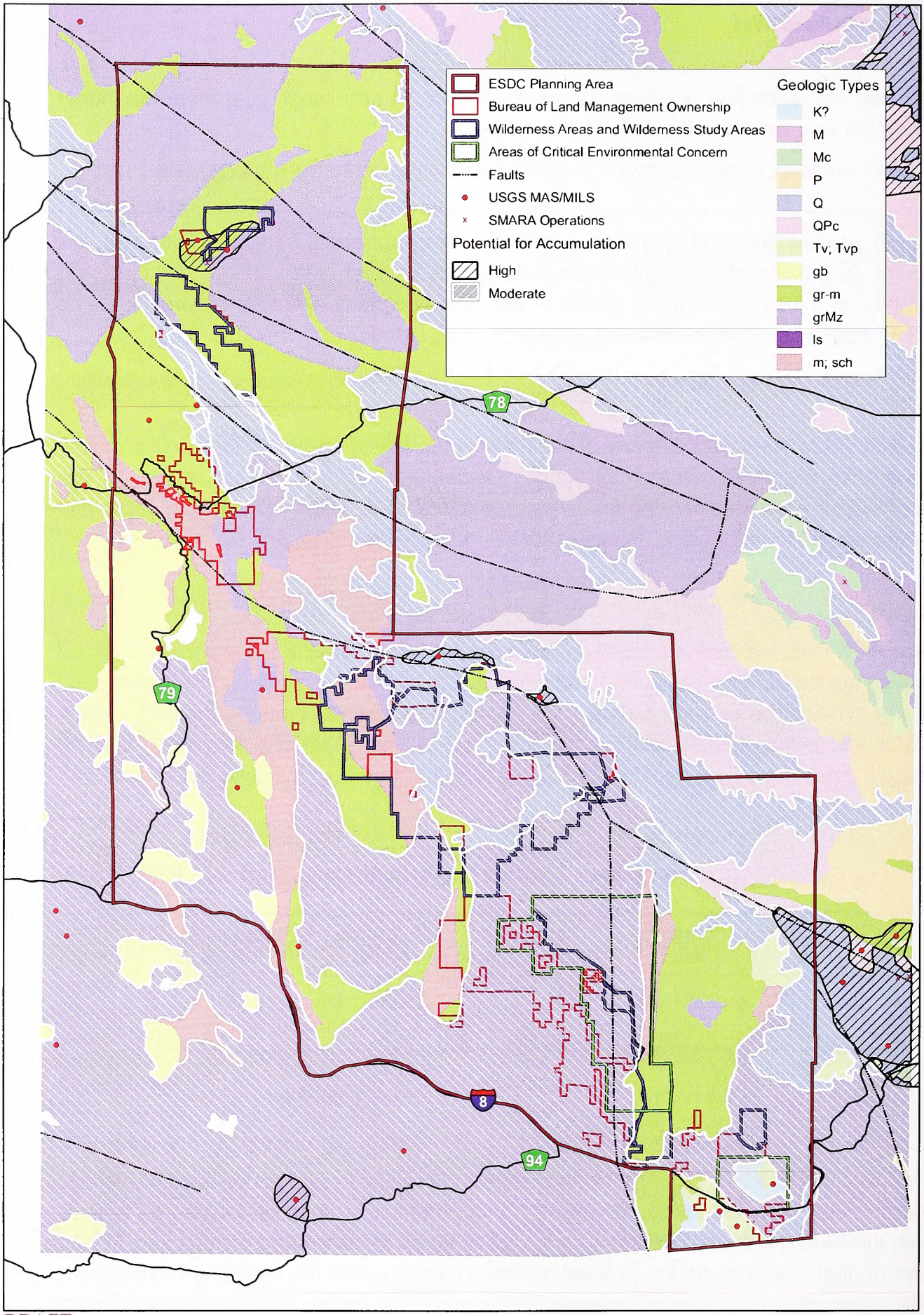
Currently, BLM does not have any active approved plans of operation for metallic mining in the Planning Area. Numerous small "casual use" operations are active in the management area, and five notice level operations have been reviewed by BLM and determined not to be causing unnecessary or undue degradation.

There are 77 mining claims recorded (Table 3-11) with the BLM in the Planning Area, 58 of which are on BLM-administered lands. No mining claims are located in BLM managed WAs or WSAs. The existing claims have been further defined based on location within ACECs and critical habitat for federally listed species (e.g. peninsular bighorn sheep), because these are areas identified as proposed withdrawn from minerals activities.

TABLE 3-11
RECORDED MINING CLAIMS WITHIN THE PLANNING AREA

	Planning Area	Peninsular Bighorn Sheep	Existing ACEC	Existing ACEC w/ PBHS
BLM	58	9	12	9
USFS	19	0	0	0

BLM has classified 201,720 acres with moderate potential for the occurrence of metallic mineral resources, and 36,050 acres with high potential for metallic locatable minerals within the Planning Area. Of these lands, 53,210 acres of moderate potential and 28,550 acres of high potential are on BLM-administered lands within the Planning Area. Figure 3-16 shows the distribution of potential for locatable (metallic) mineral deposits in the Planning Area, and Table 3-12 shows the distribution by various planning and planning subunits. The existing claims have been further defined based on location within special designation areas and critical habitat for federally listed species (e.g., Peninsular bighorn



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Miles
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Kilometers

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CALIFORNIA
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FIGURE 3-16: Potential for Locatable (Metallic) Minerals

TABLE 3-12
POTENTIAL FOR THE OCCURRENCE OF METALLIC MINERAL DEPOSITS

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checkerspot Butterfly
						ACRES						
Total	533,550	210,660	4,120	180	26,480	20,100	50,780	41,150	13,740	14,500	4,813	2,360
Total BLM	103,303	55,080	0	0	24,040	19,230	48,050	40,950	11,450	13,500	4,700	125
High Potential	36,050	7,330	173	0	4,610	4,500	2,990	2,990	1,790	4,813	160	0
Moderate Potential	201,720	68,200	3,080	0	16,880	14,300	23,680	22,340	8,170	8,247	1,640	570
High Potential-BLM	7,500	4,450	0	0	4,330	4,220	2,880	2,880	1,610	4,813	160	0
Moderate Potential-BLM	53,210	30,200	0	0	15,080	13,760	23,570	22,330	6,360	8,037	1,610	0
High Potential-Other	28,550	2,880	173	0	280	280	110	110	180	0	0	0
Moderate Potential-Other	148,510	38,000	3,080	0	1,800	540	110	10	1,810	210	30	570

TABLE 3-12
POTENTIAL FOR THE OCCURRENCE OF METALLIC MINERAL DEPOSITS
(CONT.)

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checkerspot Butterfly
	PERCENTAGES											
High Potential	7%	3%	4%	0%	17%	22%	6%	7%	13%	33%	3%	0%
Moderate Potential	38%	32%	75%	0%	64%	71%	47%	54%	59%	57%	34%	24%
High Potential-BLM	1%	2%	0%	0%	16%	21%	6%	7%	12%	33%	3%	0%
Moderate Potential-BLM	10%	14%	0%	0%	57%	68%	46%	54%	46%	55%	33%	0%
High Potential-Other	5%	1%	4%	0%	1%	1%	0%	0%	1%	0%	0%	0%
Moderate Potential-Other	28%	18%	75%	0%	7%	3%	0%	0%	13%	1%	1%	24%

sheep), because these are areas identified as proposed withdrawn from minerals activities.

Most areas classified as having a high potential for occurrence of metallic mineral resources are on patented mining claims located principally in the Julian area.

No significant production of nonmetallic/industrial minerals is known from the Planning Area. Small scale production of nonmetallic/industrial minerals has been limited to specialty minerals produced as a by-product from gem mining. The area is within the Peninsular Ranges of California, a noted locality for semi-precious colored gemstones and specimen minerals associated with pegmatites. Associated minerals such as lithium rich lepidollite, tellurium bearing tellurides ores associated with silver and gold production, and beryllium associated with gem and specimen beryl have been sold in small quantities for the contained elements.

Small deposits of high grade calcium carbonate are known in and around Jacumba. The White Cap operation mined small amounts of white crystalline limestone for crushed stone and poultry grit. Potential for cement-grade ground calcium carbonate are considered moderate based on the existence of known deposits; however, larger calcium carbonate deposits are known in the Coyote and Fish Creek Mountains to the east of the Planning Area. Silica has been produced in small quantities for smelter operations from quartz gold lode deposits in the Julian area. Potential for other uses such as admixture for the production of Portland cement is considered low to non-existent based on the small size and impure quality of those deposits associated with gold vein deposits.

No known activity for nonmetallic/industrial is currently occurring in the Planning Area. There are no BLM approved plans of operations or SMARA pans approved by San Diego County. Table 3-13 shows past producing mines for nonmetallic/industrial minerals in the Planning Area.

BLM has classified 121,180 acres with moderate potential for the occurrence of nonmetallic/industrial mineral resources, and 7,400 acres with high potential for nonmetallic/industrial locatable minerals within the Planning Area. Of these lands, 44,250 acres of moderate potential and 4,530 acres of high potential are on BLM-administered lands within the Planning Area. Figure 3-17 shows the distribution of potential for nonmetallic/industrial mineral deposits in the Planning Area, and Table 3-14 shows the distribution by various planning and planning subunits. The existing claims

have been further defined based on location within special designation areas and critical habitat for federally listed species (e.g. peninsular bighorn sheep), because these are areas identified as proposed withdrawn from minerals activities.

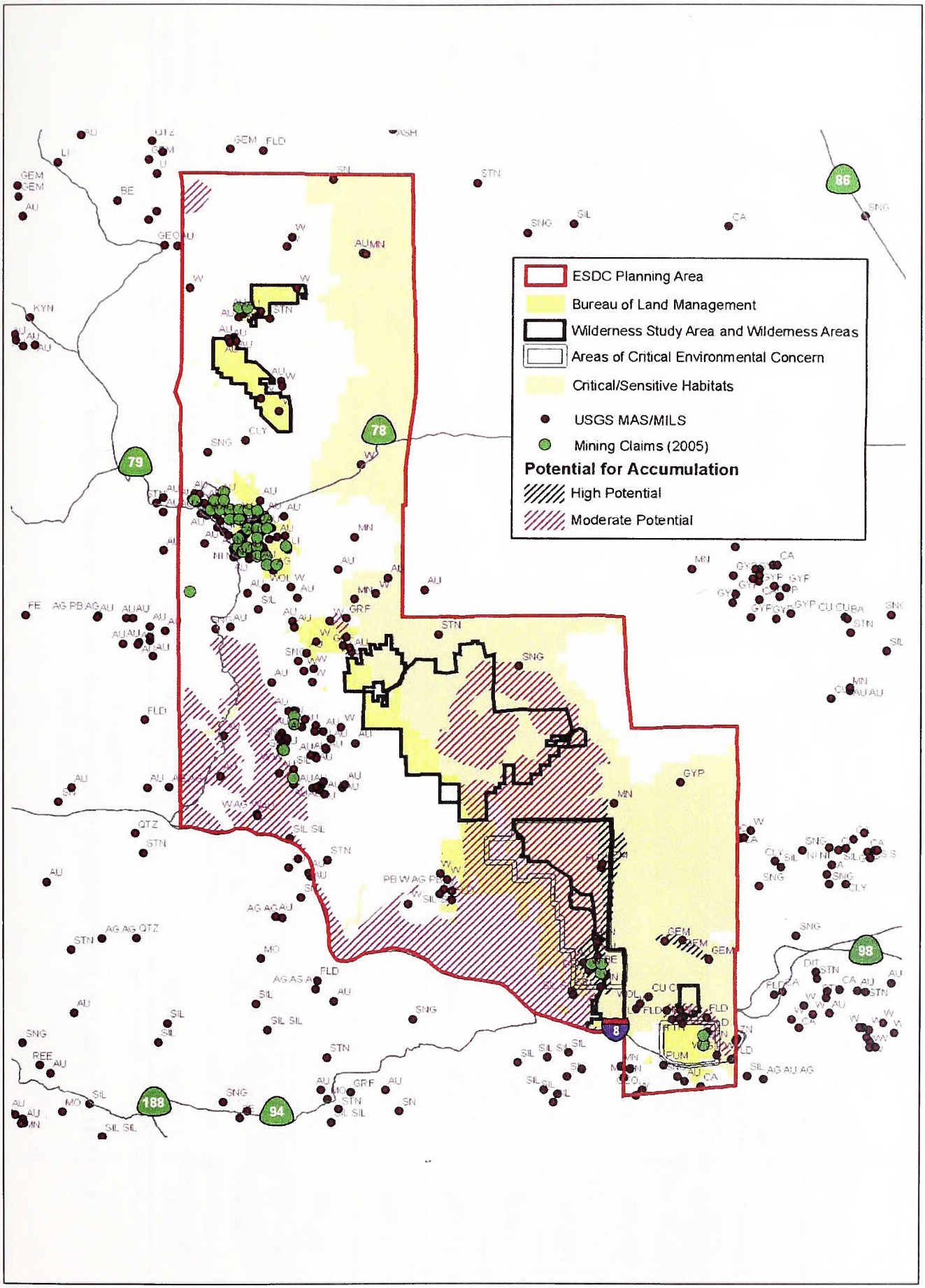
TABLE 3-13
PAST PRODUCING MINES FOR NONMETALLIC/INDUSTRIAL MINERALS WITHIN THE PLANNING AREA

Name	Type Operation	Commodity
Beebe Hole Mine	Surface-underground	gemstones
Buckthorn Deposit	Surface-underground	silica
Golden Chariot Mine	Underground	tellurium
Mica Gem Group	Surface	silica tungsten
Moore Deposit	Surface	fluid
Packrat Mine	Surface-underground	gemstones
Royal Mine	Unknown	lithium
Ruby Group	Surface	beryllium
Ward and Williams Deposit	Surface	silica
White Cap Deposit	Surface	calcium

3.16.2.2 Potential for the Development of Metallic and Non-metallic/Industrial Minerals

Metallic and nonmetallic/industrial minerals have historically been limited to underground mining operations. Potential for large scale open pit metal mines is nonexistent in the Planning Area. The geologic environment is limited to high grade gold lode deposits and pocket semi-precious gemstone deposits in pegmatite veins economically accessible by underground mining methods.

Surface disturbance associated with the level of historical mine activity is less than 10-acres per operation. Most surface disturbance is associated with waste disposal from mining and processing operations, with road construction causing the next highest level of disturbance. Crushed limestone has been developed by small quarry, limited to 30 to 40 acres.



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RESOURCE MANAGEMENT PLAN

NO SCALE

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FIGURE 3-17: Nonmetallic/Industrial Mineral Potential

TABLE 3-14
POTENTIAL FOR THE OCCURRENCE OF NON-METALLIC/INDUSTRIAL MINERAL DEPOSITS

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checker-spot Butterfy
	ACRES											
Total	533,550	210,660	4,120	180	26,480	20,100	50,780	41,150	13,740	14,500	4,813	2,360
Total BLM	103,303	55,080	0	0	24,040	19,230	48,050	40,950	11,450	13,500	4,700	125
High Potential	7,400	7,290	0	0	4,610	4,500	2,990	2,990	1,790	160	160	0
Moderate Potential	121,180	47,936	3,080	0	16,890	14,300	23,680	22,340	8,160	1,670	1,640	0
High Potential-BLM	4,530	4,420	0	0	4,330	4,220	2,880	2,880	1,610	160	160	0
Moderate Potential-BLM	44,250	30,226	0	0	15,080	13,760	23,570	22,330	6,350	1,610	1,610	0
High Potential-Other	2,870	2,870	0	0	280	280	110	110	180	0	0	0
Moderate Potential-Other	76,930	17,710	3,080	0	1,810	540	110	10	1,810	60	30	0

TABLE 3-14
POTENTIAL FOR THE OCCURRENCE OF NON-METALLIC/INDUSTRIAL MINERAL DEPOSITS
(CONT.)

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checker-spot Butterfy
	PERCENTAGES											
High Potential	1%	3%	0%	0%	17%	22%	6%	7%	13%	1%	3%	0%
Moderate Potential	23%	23%	75%	0%	64%	71%	47%	54%	59%	12%	34%	0%
High Potential-BLM	1%	2%	0%	0%	16%	21%	6%	7%	12%	1%	3%	0%
Moderate Potential-BLM	8%	14%	0%	0%	57%	68%	46%	54%	46%	11%	33%	0%
High Potential-Other	1%	1%	0%	0%	1%	1%	0%	0%	1%	0%	0%	0%
Moderate Potential-Other	14%	8%	75%	0%	7%	3%	0%	0%	13%	0%	1%	0%

Most historic and current prospecting is limited to the Julian Mining District in the Planning Area. Some limited "recreation" mining for gemstones is occurring in the Jacumba area and east of Julian. Activity is limited to hand cobbing surface exposures of gem pockets. Further activity would require entry by underground methods, or surface excavations exposing new pocket areas.

Estimates of significant new mineral development activity within the Planning Area are estimated at one gold mine and one gemstone operation within the next 10 years (mines greater than 10 acres of surface disturbance). This is based on the level of activity within the last 20 years. Operations are expected to employ less than 5 mine personnel with an annual payroll of from $45,000 to $180,000, initial capital purchases less than $100,000, and annual purchases less than $15,000.

3.16.3 Leasable (Fluid and Solid Energy, and Solid) Minerals

3.16.3.1 Potential for Accumulation And Occurrence Fluid and Solid Energy, and Solid Leasable Minerals.

There is no potential for oil, gas, or coal resources, or other solid leasable minerals in the Planning Area. Three areas are classified as prospectively valuable for geothermal resources. Of these areas, only the Jacumba area is located within an area of thermal springs.

Figure 3-18 shows that a portion of three areas are classified by the BLM as being prospectively valuable for geothermal resources. BLM Manual 3021 provides the criteria for classifying lands as prospectively valuable (PV) for geothermal resources. The BLM Manual at 3021.28 provides the criteria for classifying geothermal resources. In order to be PV, the land must:

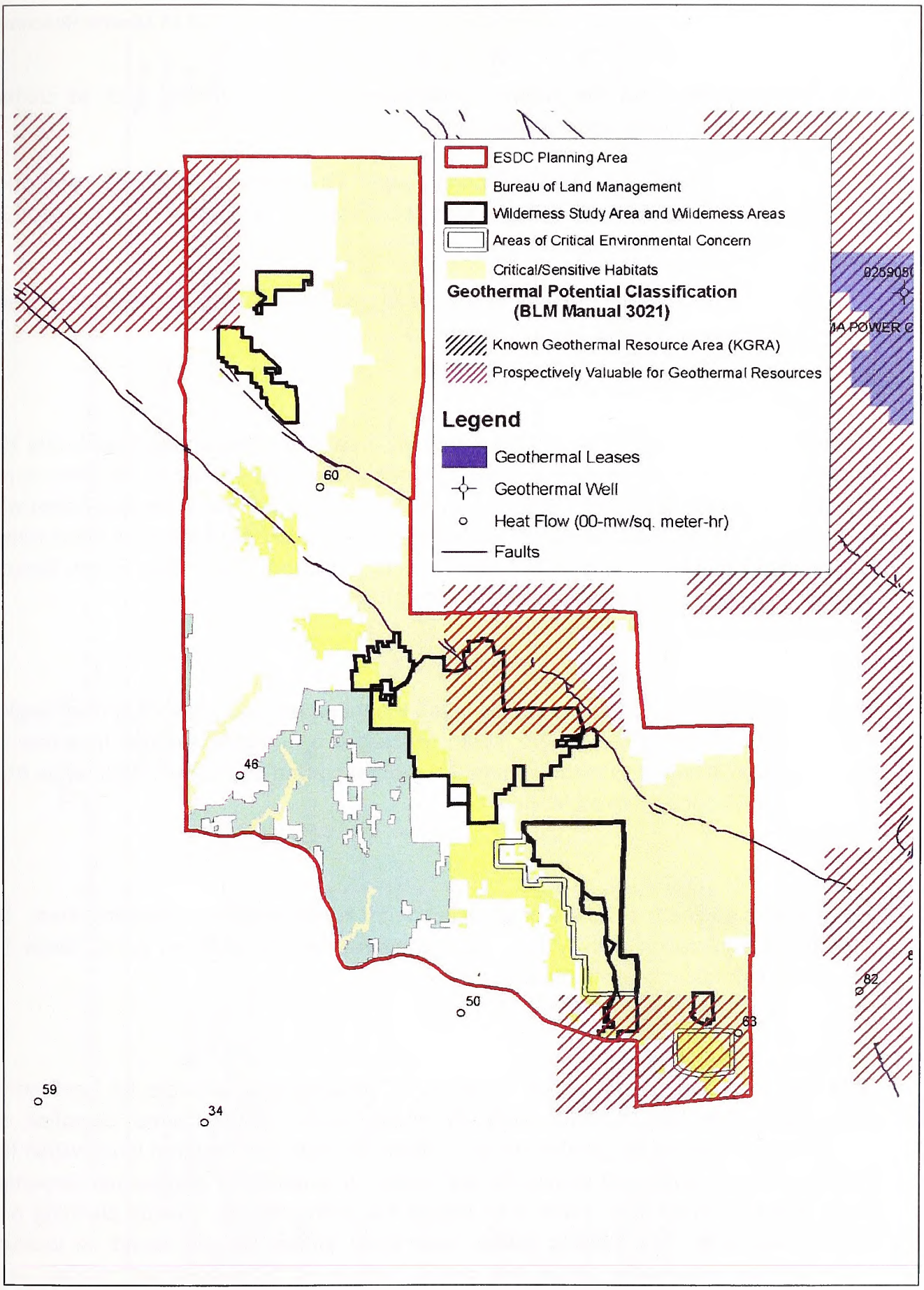

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FIGURE 3-18: Geothermal Mineral Potential

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1. Have evidence of late Tertiary or Quaternary volcanic activity, such as caldera structures, cones, and volcanic vents;

2. Have evidence of thermal springs such as geysers, fumaroles, and mud volcanoes or thermal springs with temperatures at least 40° F higher than ambient air temperature; and/or

3. Have a geothermal gradient in excess of two times normal as reflected in deep water wells, oil wells, or other test holes.

While the subject property is located within an area of thermal springs (Jacumba Hot Springs in the southern area and Agua Caliente in the northern area), the area is not within an area of Quaternary volcanic activity. Hot springs appear to be associated with fault activity. Warner Springs Ranch northwest from the Planning Area uses direct space heating from a well averaging 137°F (58°C), with a capacity of 6 million British thermal units (BTUs) per hour (1.8 megawatts [thermal]).

Three heat flow wells have been drilled in the Planning Area. All show heat flow ranging from 50 to 60 milliwatts per square meter, typically at or near the average heat flow for the earth (typical heat flow measurements in the Salton Sea geothermal area range from 100 to 175 mW per square meter-hour).

There are no geothermal leases or applications for leases within the Planning Area. No geothermal exploration activity has been approved by the BLM on public lands for temperature gradient holes in the area.

BLM has classified 80,240 acres classified as prospectively valuable for geothermal resources within the Planning Area. Of these lands, 22,040 acres classified as prospectively valuable for geothermal are present on BLM-administered lands within the Planning Area. Figure 3-18 shows the distribution of potential for geothermal resources in the Planning Area, and Table 3-15 shows the distribution by various planning and planning subunits. The existing claims have been further defined based on location within special designation areas and critical habitat for federally listed species (e.g. peninsular bighorn sheep), because these are areas identified as proposed withdrawn from minerals activities.

TABLE 3-15
LANDS CLASSIFIED AS PROSPECTIVELY VALUABLE FOR GEOTHERMAL RESOURCES

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checker-spot Butterfy
						ACRES						
Total	533,550	210,660	4,120	180	26,480	20,100	50,780	41,150	13,740	14,500	4,810	2,360
Total BLM	103,303	55,080	0	0	24,040	19,230	48,050	40,950	11,450	13,500	4,700	125
Prospectively Valuable	80,240	43,650	0	0	4,290	460	13,600	13,310	4,290	1,230	1,100	2,360
Prospectively Valuable-BLM	22,040	16,520	0	0	4,000	460	13,460	13,270	4,000	1,210	1,080	125
Prospectively Valuable-Other	58,200	27,130	0	0	290	0	140	40	290	20	20	2,235
						PERCENTAGES						
Prospectively Valuable	15%	21%	0%	0%	16%	2%	27%	32%	31%	8%	23%	100%
Prospectively Valuable-BLM	4%	8%	0%	0%	15%	2%	27%	32%	29%	8%	22%	5%
Prospectively Valuable-Other	11%	13%	0%	0%	1%	0%	0%	0%	2%	0%	0%	95%

3.16.3.2 Potential for the Development of Fluid and Solid Energy, and Solid Leasable Minerals

Geothermal resources can provide kinetic energy to drive steam turbines directly, or through heat exchange with other mediums to provide kinetic energy to drive turbines to create electricity or other work. Temperatures needed for steam turbine applications typically require water in excess of 250° F based on producing wells in the United States. All areas classified as prospectively valuable for geothermal resources do not have wells with temperatures sufficient for direct steam turbine or indirect binary turbine application in the generation of electric power.

Geothermal resources can also be applied to passive heating uses such as thermal energy exchange with water or air to heat space or provide hot water. Heat for residential, industrial, and commercial uses can be provided from geothermal systems with water temperatures ranging from 68°F to 302°F (20°C to 150°C). The model for direct space heating application is Warner Springs Ranch with well temperatures at 137°F (58°C). The differential heat loss on exchange is estimated at 50° F. At 1 BTU per degree per pound of water at atmospheric pressure, each pound of water served to a residence would provide approximately 50 BTUs. Residential demand requires at least 2,700,000 to 15,000,000 BTUs a month for a single residence, with a total requirement of hot water provided to each residence per month of 57,000 to 300,000 pounds (6,500 to 35,000 gallons) of water per month. Production requires a well producing 9 to 120 gallons per minute.

When geothermal resources are used for development of energy, the value of the resource is determined based on the value of the energy sold as electrical energy. When applied to more passive uses such as direct commercial or residential heating, the measure of value is based on the value of other forms of energy 'displaced' when used for the same purposes. The displacement value for commonly used energy in the area is natural gas or electrical power.

Application of prospective geothermal resources in the in the Planning Area may be directly converted to BTU equivalent heating units for the expected thermal applications in the area, space and water heating for residential or industrial facilities. It is estimated that about 80 to 90 percent of natural gas used is for heating space and water during the winter months, and 40 to 80 percent for heating water during the summer months. The displacement value would be based on the thermal equivalent of natural gas used in similar applications. Natural gas is the common energy source used for heating in the

Coachella Valley area, and natural gas is generally one-third the cost of electricity for similar applications.

In southern California, natural gas sold for residential and industrial heating is sold by the "Therm", which is equivalent to 100,000 BTU, or approximately 100 cubic feet of natural gas. Costs for natural gas vary, averaged in southern California at $14.00 per therm for residential heating (EIA 2006). At 2,700,000 to 15,000,000 BTUs (2,700 to 15,000 cubic feet) a month for a single residence, the cost would be approximately $40.00 to $220.00 per month.

It is not anticipated that geothermal resources for direct space heating applications in the Planning Area is possible recognizing the initial high costs for developing residential geothermal resources and operating costs for pumping water to heat exchange units. The alternative renewable energy resources, including passive solar heating, is cheaper per residential unit. Passive solar heating has lower operating costs and higher efficiencies, and renders geothermal space heating an uneconomic alternative. Potential for development of large commercial operations for multi-residential units is also speculative, as there are no large residential communities in the area where geothermal potential is highest.

3.16.4 Salable (Construction Material) Mineral Potential

3.16.4.1 Potential for Accumulation and Occurrence of Construction Materials

The geologic environment within the Planning Area does not support the accumulation of quality sand and gravel deposits typically demanded and commanding a high price in the market. The model for mineralization for these deposits includes areas of coalescing outwash fans draining areas of crystalline rock, and fluvial environments draining these fans and slopewash areas. These models are not present within the Planning Area. Valleys, and basins are too small to allow for the natural accumulation of high grade aggregate deposits.

Within the area and representing a moderate potential for occurrence are deposits of crystalline rock which can be developed as crushed or dimension rock operations, and

decomposed areas of crystalline rock, or accumulations of decomposed rock material which can be developed for low grade aggregate or fill.

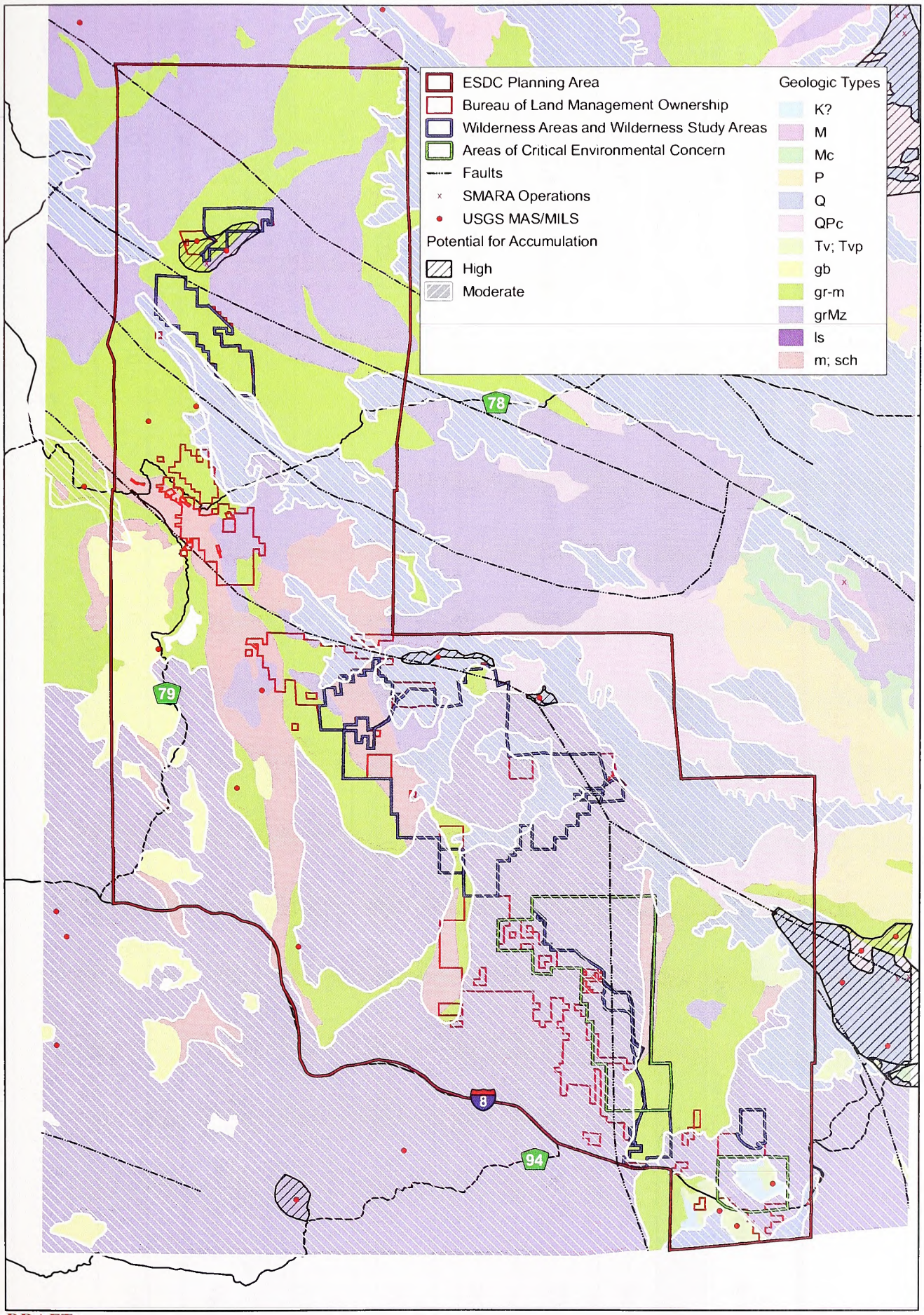
All common variety mineral materials on public land are disposed by sale or permit by the BLM. There are currently no authorizations on public land for mineral materials in the Planning Area. There are only two material sites approved by San Diego County under the SMARA in the Planning Area. These are for two borrow pits producing decomposed granite and fill materials for local consumption. Most high-end aggregate and sand used in the Planning Area for portland concrete, asphalt concrete, plaster, stucco, and road base, is mined from public land contracts and mining claims located in the Ocotillo area of Imperial County, which is east of the Planning Area.

Figure 3-19 shows the distribution of potential for salable (construction) materials deposits in the Planning Area, and Table 3-16 shows the distribution by various planning and planning subunits. The existing claims have been further defined based on location within special designation areas and critical habitat for federally listed species (e.g. peninsular bighorn sheep), because these are areas identified as proposed withdrawn from minerals activities.

3.16.4.2 Potential for the Development of Construction Materials

The local needs for construction materials are proportional to expected growth in the Planning Area. Based on annual production, each person in the United States consumes about 10 tons of aggregates per person annually. Each mile of interstate contains 38,000 tons of aggregates; about 400 tons of aggregates are used in construction of the average home (National Stone, Sand & Gravel Association; 2006). In addition, repaving each interstate and highway requires approximately 2,000 tons of aggregate per lane mile.

San Diego Association of Governments (SANDAG) provides estimates of current (2005) and future (2030) population and housing units for the Planning Area and San Diego County. The current population estimate for the Planning Area is 13,742 residents and 8,458 housing units. The population of the Planning Area is expected to increase by 150 percent by 2030 to 34,404 residents. The number of housing units is expected to



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5 0 5 10
Miles
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FIGURE 3-19: Potential for Salable (Construction) Minerals

TABLE 3-16
POTENTIAL FOR THE OCCURRENCE OF CONSTRUCTION MATERIALS

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	WA	WA w/ PBHS	ACEC Not in Wilderness	WSA	WSA w/ PBHS	Quino Checker-spot Butterfy
	ACRES											
Total	533,550	210,660	4,120	180	26,480	20,100	50,780	41,150	13,740	14,500	4,813	2,360
Total BLM	103,303	55,080	0	0	24,040	19,230	48,050	40,950	11,450	13,500	4,700	125
High Potential	5,820	3,450	0	0	0	0	0	0	0	610	0	0
Moderate Potential	244,720	111,730	3,120	113	19,980	15,430	34,270	32,000	11,220	3,370	2,770	440
High Potential-BLM	960	0	0	0	0	0	0	0	0	590	0	0
Moderate Potential-BLM	59,810	42,840	0	0	17,810	14,720	34,130	31,960	9,060	2,820	2,670	10
High Potential-Other	4,860	3,450	0	0	0	0	0	0	0	20	0	0
Moderate Potential-Other	184,910	68,890	3,120	113	2,170	710	140	40	2,160	550	100	430

TABLE 3-16
POTENTIAL FOR THE OCCURRENCE OF CONSTRUCTION MATERIALS
(CONT.)

	Planning Area	Peninsular Bighorn Sheep	Arroyo Toad	SWFL	Existing ACEC	Existing ACEC w/ PBHS	Wilderness Area	Wilderness Area w/ PBHS	ACEC Not in Wilderness	Wilderness Study Area	WSA w/ PBHS	Quino Checker-spot Butterfy
	PERCENTAGES											
High Potential	1%	2%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%
Moderate Potential	46%	53%	76%	63%	75%	77%	67%	78%	82%	23%	58%	19%
High Potential-BLM	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%
Moderate Potential-BLM	11%	20%	0%	0%	67%	73%	67%	78%	66%	19%	55%	0%
High Potential-Other	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Moderate Potential-Other	35%	33%	76%	63%	8%	4%	0%	0%	16%	4%	2%	18%

increase by 8,051 units (95 percent) to 16,509 units. The increase of 8,458 housing units in the Planning Area will require approximately 3.4 million tons of sand and aggregate.

Future development of construction materials is limited to areas where available resources are currently being developed. Within the Planning Area, areas having a high potential for development are on private lands where current operations are approved by the SMARA state lead agencies. These operations are mining low-end decomposed granitic rocks or common fill. High end aggregate resources are limited to small, uneconomic deposits that must compete with larger resources along Interstate 8 east of the project area in Imperial County. Identified deposits cannot meet projected needs and will have to be supplied from sources outside the Planning Area.

There are no current or foreseeable markets identified in the Planning Area where graded aggregate and sand could be developed and sold within the local market from public lands. Any potential for development of construction material is limited to areas of moderate potential for crushed rock and decomposed granite within the crystalline rock units. These areas are pervasive within the Planning Area, and adequate resources for these commodities exist within areas that are not subject to withdrawn lands.

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3.17 Recreation Management

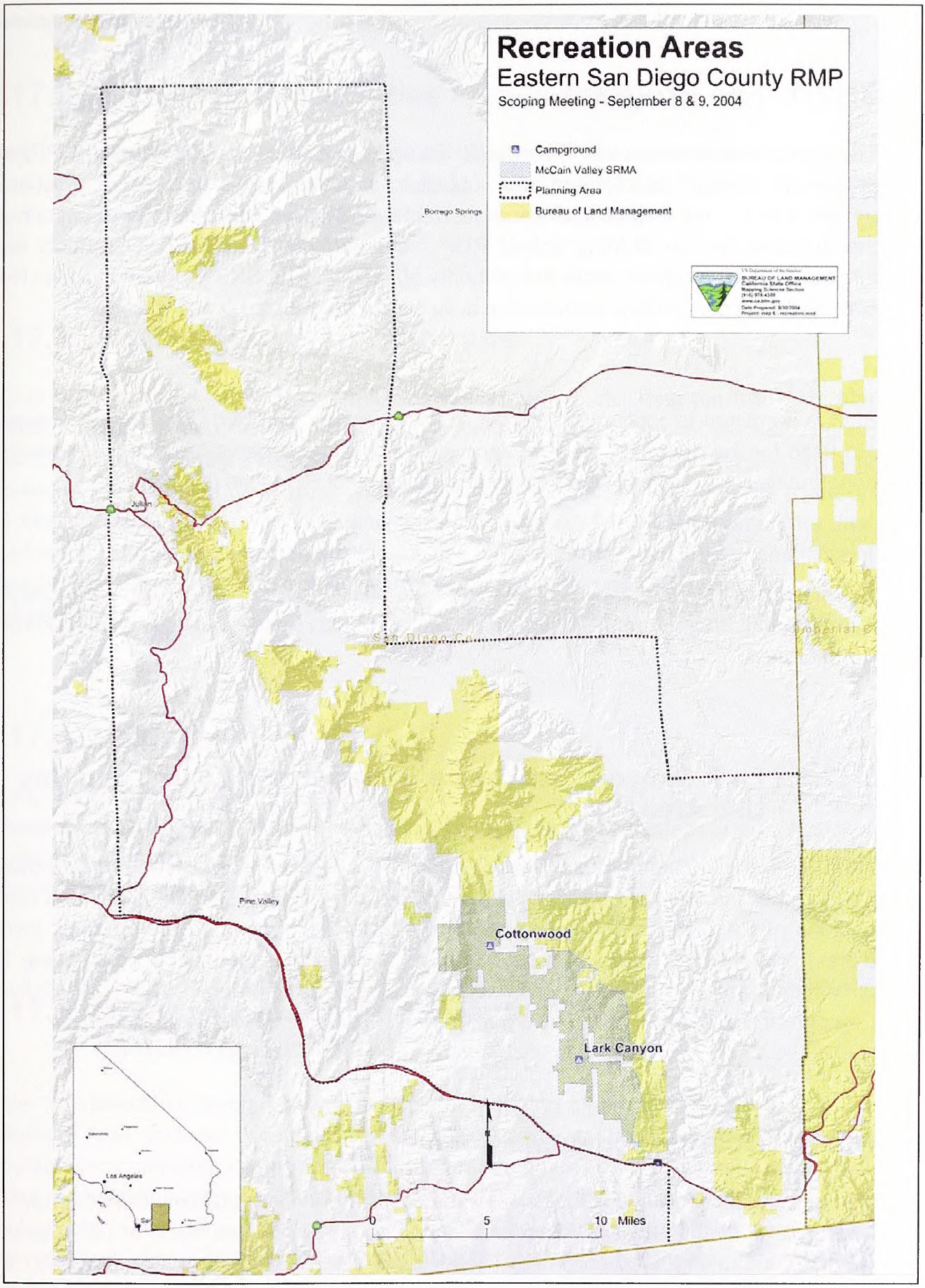
BLM-administered lands in the Planning Area are a popular destination for recreation users drawn to open spaces, diverse landscapes, and freedom from the restrictions of urban areas. Opportunities exist within the Planning Area for a wide variety of recreational uses at low-to-moderate levels of intensity. Activities known to occur in the area include hunting, rock hounding, hiking, backpacking, sightseeing, target shooting, camping, equestrian, four-wheel drive touring, mountain biking, and OHV use.

Visitors that use BLM-administered public lands in the Planning Area for recreational pursuits are primarily from the surrounding communities within San Diego County and from the city of San Diego itself. Visitors who come to utilize the recreational opportunities within the Planning Area are represented by all age groups.

McCain Valley Recreation Area (Figure 3-20), in the southern portion of the Planning Area, receives the most visitation and consists of two developed campgrounds (containing vault toilets, water, picnic tables and fire rings), one OHV area for OHVs that are 40" wide or less, and two scenic overlooks. Target shooting is not allowed within the McCain Valley Recreation Area, however the legal pursuit of game is allowed. Currently only street legal vehicles are allowed on McCain Valley Road and Sacatone Road.

BLM developed the McCain Recreation Area Management Plan (RAMP) (1979) to address the concerns expressed by the public. The purpose of the RAMP was to enable the BLM to gain an acceptable level of control over the previously unrestricted use of the area in order to protect its unique wildlife, archeological, and recreational values.

The Recreation Opportunity Spectrum (ROS) is a tool to inventory the existing recreation situation and provide options for future recreation management on the public lands within the Planning Area. The categories and definitions for ROS are provided in Appendix J.



DRAFT

EI CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

NO SCALE

FIGURE 3-20: Recreation Areas

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February 2007

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3.17.1 Fee Program

The costs for Recreation Use Permits (RUP) and Special Recreation Permits (SRP) are periodically revised as required and subject to a public review process. The recently passed FLREA has replaced the former Recreational Fee Demonstration Program as the authority for the BLM to collect RUP fees. Additionally, the ECFO collects fees through its SRP program under the authority of FLPMA. The SRP program includes fees collected from competitive, commercial activities and organized group events.

BLM is permitted to retain 100 percent of the new fees collected. The funds generated are used for the operation, maintenance, and any improvements to enhance recreation opportunities and visitor experiences within the subject BLM field office.

Currently, the Planning Area has two RUP fee sites. These sites are the Lark Canyon Campground (upper and lower, with affiliated day use area) and Cottonwood Campground.

3.17.1.1 Lark Canyon Campground (Upper and Lower) and Day Use Area

The Lark Canyon Campground (upper and lower) is located in southeastern San Diego County near the town of Jacumba within the McCain Valley area. The upper and lower portions of the campground support a total of four vault toilets, 15 camp sites, picnic tables, and running water. Additionally there is an established OHV riding area, for OHVs that are 40" wide or less, adjacent to the campground. The Lark Canyon Campground and day-use area is a popular destination for visitors year round.

3.17.1.2 Cottonwood Campground

Cottonwood Campground is located in southeastern San Diego County near the town of Jacumba within the McCain Valley area and is about eight miles North of Lark Canyon Campground along McCain Valley Road. Like the Lark Canyon Campground, the Cottonwood Campground is also a popular destination for visitors. There are 31 camp sites as well as facilities and amenities provided at Cottonwood Campground, such as four vault toilets (two on the east side and two on the west side), potable water, picnic tables, fire rings, and horse corrals (on the east side).

3.17.2 Recreational Facilities

Aside from the campgrounds and day-use areas (OHV trails and horse corrals) described above, the Planning Area supports other recreational facilities, including various trailheads, and the Carrizo Gorge and Sacatone overlooks.

3.17.3 Special Recreation Permits

ECFO issues special recreation permits for special events including the following: trial events, organized group events (including festivals and concerts), equestrian events, Dual Sport Event, Fat Tyre Bicycle Event, and the Sheriff's Run. The trial events are only allowed in Lark Canyon OHV area. The equestrian events occur once or twice a year in the McCain Valley Recreation Area and have an average of 100 participants. The dual sport event is an annual competition that passes through Oriflamme Canyon and Chariot Canyon. The Sherriff's Run is a yearly event that passes through Oriflamme Canyon and Chariot Canyon.

3.17.4 Volunteer Events

ECFO coordinates with volunteer groups. The following are recent and/or recurring volunteer-based events: Annual National Public Lands Volunteer Day; National Recreation Area cleanups of Airport Mesa shooting area (periodic); cleanup/restoration projects by scouts and other volunteers.

3.17.5 Other Non-permitted Events (Events Not Requiring a Permit)

Other non-permitted events (allowed events not requiring a permit) that occur within the Planning Area include: backpacking, mountain bicycling, road bicycling, camping, mountain/rock climbing, driving for pleasure, gathering non-commercial products, hang-gliding/parasailing, hiking/walking/running, horseback riding, nature study, OHV use, photography, picnicking, rock hounding/mineral collecting, target shooting (entire Planning Area except McCain Valley and Table Mountain is currently open to shooting), viewing of wildlife, interpretive exhibits, and other.

3.17.6 California State-permitted Activities

The CDFG is responsible for issuing permits for hunting of big game and upland birds. While BLM does not issue permits for hunting on BLM-administered lands, the agency supports these activities and State of California permit requirements. BLM does not issue hunting guides but does make Desert Access Guides available to the public.

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3.18 Transportation and Public Access

Access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach public lands. Access to the public lands within the Planning Area is an issue of concern to both agency personnel and the public. The existing fragmented ownership pattern of BLM lands intermingled with private, state, and other federal lands complicates the access situation. Generally speaking, access is acquired from willing adjacent landowners on a case-by-case basis, and as needs or opportunities arise.

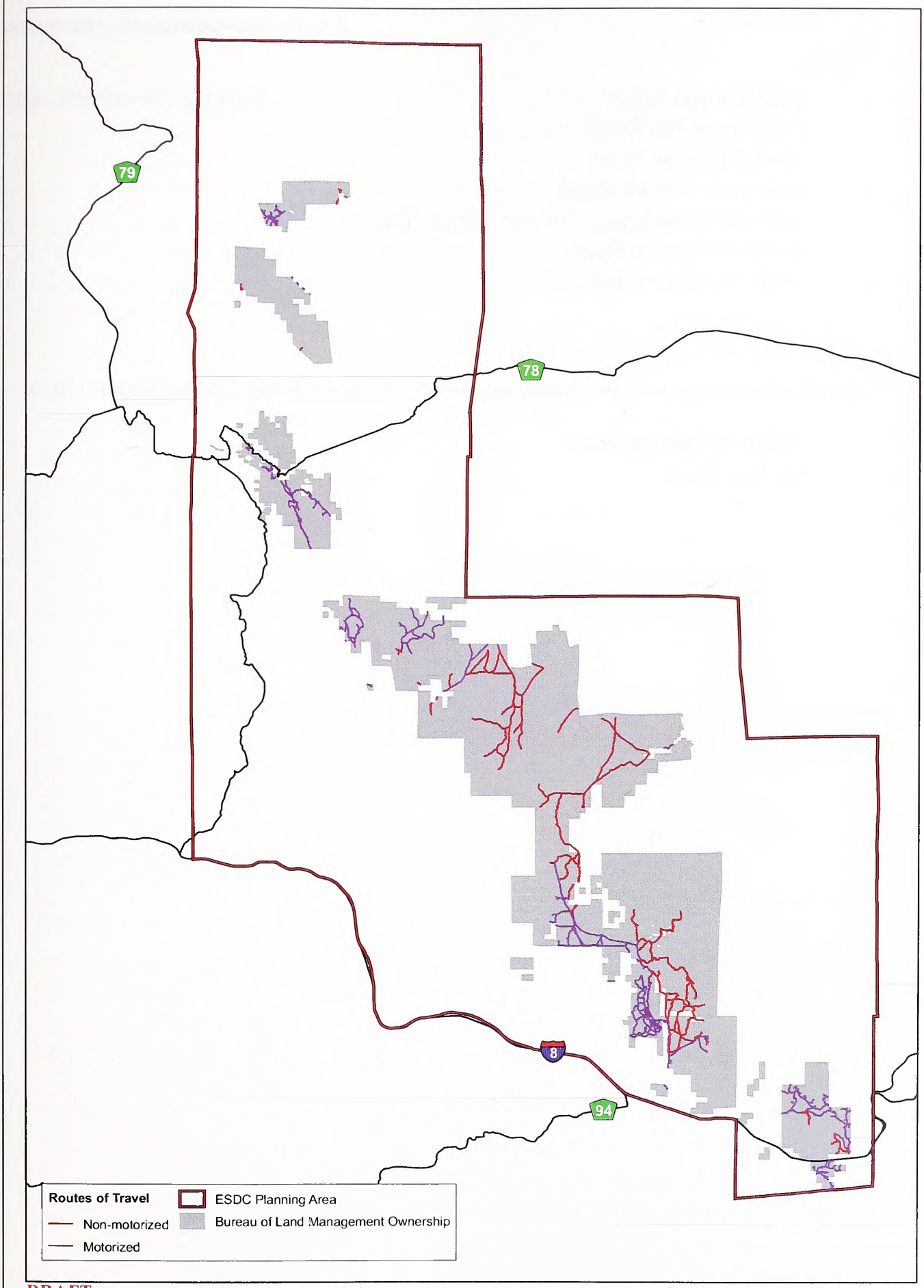
Figure 3-21 shows the existing routes of travel for the Planning Area. Routes are identified as motorized and non-motorized. For a total of 191.20 miles of routes there are currently 108.65 miles of routes identified as motorized and 82.55 miles identified as non-motorized.

3.18.1 Motorized Vehicle Access

The transportation network within the Planning Area was designed twenty-five years ago to follow the Multiple-Use Class guidelines and further guidance found in the Motorized Vehicle Access Element of the CDCA Plan. The network was intended to improve opportunities for recreational use in the Planning Area while protecting sensitive resource values.

In conjunction with this network, BLM has continued to secure legal public access to landlocked parcels of public land. Until all access is acquired, persons wishing access to landlocked parcels must obtain permission to cross private property directly from the individual landowners. San Diego County requires that this permission be in writing.

The specific routes recommended for approval for vehicle travel during the formal route approval process during plan implementation twenty-five years ago were (all approvals were subject to the acquisition of legal access):



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El CENTRO FIELD OFFICE RESOURCE MANAGEMENT PLAN

5 0 5 10
Miles
5 0 5 10
Kilometers

N W E S

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FIGURE 3-21: Existing Routes of Travel

a. Buck Canyon Road
b. Old Banner Toll Road
c. Chariot Canyon Road
d. Rodriguez Canyon Road
e. Vallecito Valley/Lower Portrero Canyon Road
f. Simmons Canyon Road
g. Table Mountain Road

The following routes were previously approved for use under the McCain RAMP (1979):

h. Sacatone Springs Road
i. Mt. Tule Road

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3.19 Social and Economic

The BLM lands in the Planning Area are distributed across the eastern portion of San Diego County. This is a relatively rugged rural area with a low population density.

3.19.1 Social/Cultural/Economic History

The economic history of the Planning Area begins with the Spanish explorers of the 16th century. Alarcon and Diaz visited the Colorado River, some 90 miles east of the Planning Area, in 1540. Cabrillo sailed into San Diego Bay, about 40 miles west of the Planning Area, in 1543. Oñate, governor of New Mexico, visited the Colorado River in 1605. However it was not until 1769 and the founding of the Franciscan mission and the Spanish military presidio at what is known as Old Town, San Diego, that the region had permanent European settlement (Forbes 1965; Pourade 1960). The lack of a dependable water supply made growing crops there very difficult, and the mission was moved up Mission Valley six miles to its present location in 1774. Padre Dam was constructed upstream from the new mission some six miles in 1815 or 1816. A *zanja* or aqueduct was built to bring water to the new mission and associated fields. Padre Dam and the *zanja* were the first of a continuous stream of water projects in California that continues to this day (Pourade 1961:120). Mission San Luis Rey de Francia, northwest of the city of Oceanside, was founded in 1798 (Pourade 1961:120; Rolle 1998). This is some 40 miles west-northwest of Warner Springs, which is located in the northwestern portion of the Planning Area.

The mission economy was based on small-scale agriculture and large-scale cattle ranching. All mission enterprises functioned by means of more or less forced Indian labor. The Spanish military often went on forays into inland San Diego County to roundup new "converts" and fugitives from the missions. The Planning Area was typical of the places where coastal Indians sought refuge from the Spanish whose settlements were on the coast. The native economy intensified in these backcountry areas with a greater emphasis on acorn processing, while Indian society on the coast crumbled (True 1970:56). The missions and the presidio controlled vast areas for pasturing their cattle and horses herded by Indian cowboys (Rolle 1998:57).

In 1821, Mexico, including Alta California, gained independence from Spain. In 1834, the missions founded by the Mexican government and vast tracts of former mission lands became available for private ownership. The Mexican government was much more open

to economic development, and there was a relative boom in the cattle business as hundreds of additional large ranchos were granted to influential *Californios*. There was a very limited market for meat, so cattle were butchered for their hides and tallow, the former becaming known as California banknotes. Hides and tallow were bought by Yankee sea captains visiting the Alta California coast, who traded U.S. manufactured goods. Native American communities continued to decline, particularly those close to the coast. However, some Indians found jobs as *vaqueros* (buckaroos), laborers, gardeners, and housekeepers (Pourade 1961; Rolle 1998:57).

After years of tensions between the Mexican government and Anglo-American Texans, Texas was annexed by the United States in February 1846, which ended the Republic of Texas and triggered the Mexican–American War (Texas State Historical Association 2004). Americans in northern California revolted and declared an independent California Republic. The Republic ended only three weeks later when U.S. naval forces took Monterey on July 7, 1846. War ended with the Treaty of Guadalupe Hidalgo, signed on February 2, 1848.

The treaty of Guadalupe Hidalgo gave Alta California, Arizona, New Mexico, a greatly enlarged Texas, and parts of Colorado, Nevada, and Utah to the United States (Rolle 1998:91; Texas State Historical Association 2004). The treaty guaranteed citizenship to former Mexican citizens if they chose to stay in the new lands of the U.S. and it promised to respect their property. Indians had been granted Mexican citizenship in 1821, but the Americans disregarded their legal claim to citizenship or to property. The subsequent California constitution barred Indians from voting, serving on juries, and testifying in court against Whites (Phillips 1996:60-61). San Diego County at that time was huge and included what is now San Bernardino, Riverside, and Imperial Counties.

On January 24, 1848, before the Treaty of Guadalupe Hidalgo, gold was discovered at Sutter's Fort on the American River in the central Sierra Nevada foothills; however, it was kept secret until an account was published on March 15. The subsequent Gold Rush initially consisted of a great influx of Americans and Europeans into the central Sierra Nevada. Soon this immigrant tide engulfed many of the Spanish and Mexican cultural traditions and eliminated many remaining vestiges of Native American culture. However, in the southern counties, there was a drop in population as people rushed to the goldfields. The region remained a cattle raising area and was slow to attract additional population. However, cattle that were worth about $2 for their hides and tallow in 1848 were worth as much as $500 per head in the Mother Lode during the early days of the Gold Rush. Major cattle drives were undertaken from the cow counties to the

Mother Lode. These were the forerunners of the better-known Texas cattle drives of the post-Civil War era. By 1853, Texans were also driving cattle 1500 miles to southern California and on to Sacramento (Pourade 1963:192). San Diego and the other cow counties thrived handsomely for many years by means of these cattle drives to northern California (Pourade 1963:193).

James E. Birch began a stage line to carry mail and passengers from San Antonio, Texas, to San Diego in 1857. His route led north along what is now Highway S2 through the Planning Area. At Oriflamme Canyon it turned west up the steep canyon and over the mountains to San Diego. Passengers were required to ride mules over this section, and Birch's line became known as the "Jackass Mail." The Butterfield Overland Stage began operation in 1858. Bypassing San Diego, the Butterfield line linked Yuma and Los Angeles by passing north through the Planning Area roughly along Highway S2 and joining with Highway 79 in the vicinity of Warner Springs. The Civil War ended the use of this southern route in 1861, but Butterfield resumed business over a northern route after the war. In 1869, the first trans-continental railroad linked Sacramento with the East. While overland stages gradually passed from the scene, short haul stages continued to be vital to rural areas.

In 1862, after the secession of the slave states, Lincoln signed the Homestead Act. Under this act, a homesteader had only to be the head of a household and at least 21 years of age to claim a 160-acre parcel of land. The program was managed by the General Land Office, forerunner of the BLM. Settlement of the relatively arid Diego backcountry in the Planning Area continued to be slow through the post-Civil War years, and the economy consisted of scattered ranches.

In 1870, there was a gold strike in the mountains east of San Diego which greatly altered the economy of the Planning Area for a time. Julian and various other mining camps soon sprung up: Branson City, Eastwood, and Coleman City (Emily City). Banner, located a few miles southwest of Julian, became a sizeable town. Julian soon gained a population about half that of San Diego, and there was an effort to move the county seat there (Crawford 1995). The Native population continued to decline, sometimes helped along by attacks by miners or ranchers. One such incident took place in southern part of the Planning Area called the Jacumba Massacre in which ranchers killed 10 to 15 Indians over some missing cattle. Crime was a problem along the border in the late 19th and early 20th centuries with bandits and rustlers from both sides of the border working the area.

In 1870, President Grant attempted to get legislation for California Indian reservations through Congress, but failed. In 1875 by EO, he set aside nine small reservations in eastern San Diego County. In 1880, President Hayes abolished the Cupeño Reservation at Warner Springs and reduced others in size. In the 1890s, other small reservations were established. Today, there are 18 small reservations in San Diego County, more than any other county in the U.S. (Carrico 1987; Stewart 1976).

In 1885, the Santa Fe Railway opened service to San Diego directly connecting it with national markets. The economy accelerated greatly. However, water continued to be a concern. In response, private companies erected six major dams on local rivers between 1887 and 1897 stimulating local agriculture and urban development. In the 1870s and 1880s, there were concerns about wildfires in the backcountry and watershed protection. In response, President Theodore Roosevelt expanded the forest reserves of Trabuco Canyon and San Jacinto to include Palomar Mountain and the Laguna Mountains. Forest reserves were administered by the General Land Office, forerunner of the BLM. In 1905 they were transferred to the Department of Agriculture. In 1907, Forest Reserves were changed to National Forests (Cleveland National Forest 2005).

In 1919, the San Diego-Arizona Railway opened after many years of financial and technical struggle. The line proceeded through the Planning Area in Corrizo Gorge and on to El Centro. This offered a direct line to the east by means of the Southern Pacific line to Yuma (Dodge 2004). In the 1920s and 30s, the popularity of the automobile pressured county and state governments to provide better roads, and many of today's highways were graded and paved in this period. This opened up the San Diego backcountry to visitors and a tourist business began.

The World War I era saw the development of many of San Diego's naval and air facilities. In 1925, Claude Ryan and Benjamin Mahoney began what may be the first regularly scheduled airline operation in the U.S., between San Diego and Los Angeles. In 1927 Charles Lindbergh's Spirit of Saint Louis was built in San Diego's burgeoning aircraft industry at Ryan Aircraft (Tekulsky 2006).

American Indians and women of all ethnicities were finally "given" citizenship with the passage of the Citizenship Act of 1924; however, Indians still could not vote in local elections. Indians would not get full citizenship until 1952, when they were allowed to vote in local elections (Kumeyaay.com 2006).

There was interest in the health and relaxation of hot springs, and some became vacation resorts in the early 20th century. Jacumba, in the southern portion of the Planning Area, became popular for its sulfur springs and by 1930 there was a first class hotel, a large hot spring pool, bars, stores, and a population of more than 5,000. Today, there is only one motel, the spring is capped, and few tourists visit.

In 1927, the Metropolitan Water District (MWD) was chartered by the state to provide water to a number of cities in southern California; San Diego did not join despite ongoing water access problems. In 1941, the Colorado River Aqueduct was completed, bringing Colorado River water to the Los Angles Basin and providing for the economic growth of the area (Metropolitan Water District 2006).

The World War II era saw a large population expansion and a diversified economy that continues to this day. San Diego County Water Authority (SDCWA) was organized on June 9, 1944 as a public agency to manage the importation of Colorado River water to San Diego (San Diego County Water Authority 2006). In 1946, San Diego belatedly joined the MWD, assuring supplies of Colorado River Water for future growth (MWD 2006). The SDCWA, MWD, and the Navy built the first aqueduct for importing Colorado River water, and water from the river first arrived in San Diego County in November 1947. Today, San Diego County derives as much as 95 percent of its water supplies from the Colorado River (San Diego County Water Authority 2006). Virtually none of this water goes directly to the Planning Area because there is no infrastructure to convey it. However, businesses and residents benefit in indirect ways, as the increase in population and commerce in San Diego County that is supported by this water source, translate into an increase in visitors to the Planning Area.

As the population of San Diego County expanded in the post-World War II era, tourism in the Planning Area, particularly at Julian and Warner Springs, became an important economic activity in the Planning Area, while agriculture and cattle raising declined. Retirees and individuals who do not depend on grazing for a central source of income moved into the area deriving most of their income from outside the Planning Area while maintaining a ranching or rural lifestyle The socioeconomic characteristics of the Planning Area today will be discussed in some detail below.

3.19.1.1 Demographic and Socioeconomic Characteristics

This section describes the demographic and socioeconomic characteristics of the residents of the Planning Area and compares them with the characteristics of San Diego County residents. The County of San Diego is relatively large encompassing 2,727,000 acres. The Planning Area is generally very rural, sparsely populated with a few small towns or communities, and covers about 533,000 acres located in the eastern quarter of San Diego County (see Figure 1-1).

Within the 533,000-acre Planning Area the BLM has about 100,000 acres under its management. Therefore, the Planning Area represents about one-quarter of San Diego County, and the acreage under BLM's control represents only one-seventh (about 13%) of the Planning Area or about 4 percent of the acreage within San Diego County.

3.19.1.1.1 Demographic Characteristics

Much of the demographic data presented in this report was derived from the 2000 U.S. Census. The Planning Area data were based on aggregated demographic data for 11 Zoning Improvement Plan (ZIP) codes that encompass the Planning Area.[1] Current 2005 demographic estimates and projections for 2030 were also reported for selected characteristics (i.e., population, housing units, and employment) based on data collected from the SANDAG. In general the remote, rural area of the Planning Area was more limited in the amount of socioeconomic data that was available, compared with the level of information that was available for the County of San Diego.

Table 3-17 lists selected demographic data for the Planning Area and San Diego County. Overall, the demographic data indicates that there are very few residents of the Planning Area (13,742), representing about 0.5 percent of the total county population. In general these residents are a little older (44 years of age versus 33 years of age), more likely to be college educated, more likely to be White, and more likely to be retired than residents of the county. Median annual household income was lower for the Planning Area than the countywide median, but per capita income is about equal due to the smaller household size for the Planning Area.

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[1] Demographic estimates for the Planning Area were developed by SANDAG for the combined 11 ZIP codes of: 91905, 91916, 91931, 91934, 91948, 91962, 92004, 92036, 92066, 92086, and 92259.

TABLE 3-17
DEMOGRAPHIC PROFILE OF THE
PLANNING AREA V. TOTAL SAN DIEGO COUNTY

Characteristic	Planning Area	San Diego County
Total Population		
2000 U.S. Census	13,794	2,813,833
2005 Population Estimate (SANDAG)	13,742	3,051,280
2030 Population Forecast (SANDAG)	34,404	3,855,085
Population percent change (2000-2005)	-0.4%	8.4%
Population percent change (2000-2030)	149.4%	37.0%
Population percent change (2005-2030)	150.4%	26.3%
Gender		
Male	49.0%	50.0%
Female	51.0%	50.0%
Age Distribution (2000 Census)	100.0%	100.0%
Under 18 years	22.8%	25.7%
18 to 24	5.7%	11.3%
25 to 34	8.6%	15.8%
35 to454	14.4%	16.3%
45 to 54	17.9%	12.5%
55 to 64	12.8%	7.3%
65+	17.8%	11.2%
Median Age (2000 Census)	44.1	33.2
Median Household Income 2005 (SANDAG)	$54,551	$64,273
Poverty Level (2000 Census)		
Percent of Families Below Poverty	8.2%	8.4%
Percent of Population Below Poverty	12.6%	12.6%
Population 25+ yrs. College Graduates (2000 Census)	35.0%	29.5%
Race (2000 Census)	100.0%	100.0%
American Indian and Alaska Native	2.6%	0.9%
Asian & Pacific Islander	0.6%	9.4%
Black or African American	1.2%	5.7%
White	85.9%	66.5%
Other or Multiple Race	9.6%	17.5%
Hispanic 2005 (SANDAG)	26.0%	28.8%
Language Spoken At Home	100.0%	100.0%
English Only	83.6%	67.0%
Spanish	13.5%	21.9%
Other Language	2.9%	11.1%

* Columns may not add to 100% due to rounding.
Source: 2000 U.S. Census or San Diego Association of Governments (SANDAG) as indicated.

TABLE 3-17
DEMOGRAPHIC PROFILE OF THE
PLANNING AREA V. TOTAL SAN DIEGO COUNTY
(CONT.)

Characteristic	Planning Area	San Diego County
Housing Units 2005 (SANDAG)	8,458	1,108,500
Total Occupied Units	5,543	1,061,027
Housing Vacancy Rate	34.5%	4.3%
Owner Occupied Units (2000 Census)	76.2%	55.4%
Renter Occupied Units (2000 Census)	23.8%	44.6%
2030 Housing Unit Forecast (SANDAG)	16,509	1,354,088
Housing Units % Change (2005-2030)	95.2%	22.2%
Housing Unit Type - 2005 (SANDAG)	100.0%	100.0%
Single Family Residence (detached)	67.9%	59.0%
Attached Units	11.2%	32.9%
Mobile Homes and Other	20.9%	3.9%
Persons per Household - 2005 (SANDAG)	2.4	2.8
Median Rent (2000 Census)	$516	$711
Median Housing Value (2000 Census)	$168,376	$223,363
Year Housing Unit Was Built (2000 Census)	100.0%	100.0%
1990 to 2000	16.0%	13.9%
1980 to 1989	21.5%	21.9%
1970 to 1979	26.1%	26.3%
1960 to 1969	11.1%	15.0%
1950 to 1959	9.3%	12.9%
1940 to 1949	6.3%	4.9%
1939 or earlier	9.7%	5.1%
Labor Force (2000 Census)	6,012	1,399,807
Unemployment Rate	3.2%	5.8%
Total Employment within the Area (2000 Census)	5,209	1,384,676
2030 Employment Forecast (SANDAG)	10,753	1,824,030
Employment % Change (2000-2030)	106.4%	31.7%
Occupation (2000 Census)	100.0%	100.0%
Management, professional, and related occupations	28.0%	37.5%
Service Occupations	24.1%	16.0%
Sales and office Occupations	23.5%	27.3%
Farming, Forestry and Fishing Occupations	1.5%	0.5%
Construction, extraction, and maintenance Occupations	13.2%	8.7%
Production, transportation, and material occupations	9.7%	9.9%

* Columns may not add to 100% due to rounding.
Source: 2000 U.S. Census or San Diego Association of Governments (SANDAG) as indicated.

The current population estimate of 13,742 residents for 2005 represents a small decrease (-0.4%) from the 13,794 residents reported by the 2000 U.S. Census. This decrease in population was probably driven by the massive wildfires experienced in San Diego County in late October 2003. In comparison, the current population of San Diego County is 3,051,280 and represents an increase of 8.4 percent from the 2000 U.S. Census. The population of the Planning Area is expected to experience a significant increase during the 25-year period of 2005-2030, jumping 150 percent to 34,400 by 2030. In contrast, a relatively modest 26-percent population increase is forecast for the county.[2] This is described in more detail below.

The number of households in the Planning Area as of January 2005 was 5,543, about 0.5 percent of the 1,061,027 households in San Diego County. Residents of the Planning Area are about evenly divided between female and male (49% v. 51%, respectively). The county population is 50 percent female and 50 percent male.

Based on the 2000 U.S. Census data, the median household size for residents of the Planning Area was significantly smaller than that of the county (2.4 people v. 2.8 people, respectively). Median household income in the Planning Area was less than that of the county ($54,500 v. $64,300). However, the per capita income was about equal for residents of the Planning Area and the county due to the smaller household size for the Planning Area. Overall poverty rates for families in the Planning Area and the county were about equal (8.2% v 8.4%). The proportion of all residents in poverty was equal for the Planning Area and the county (12.6% v 12.6%, respectively).

The median age of residents in the Planning Area was 44.1 years, as reported in the 2000 U.S. Census. This is significantly older than the median age of 33.2 years for residents of the county.

A substantial proportion of the Planning Area population was reported as White (86%). In addition, 10 percent were reported as multiple race, 3 percent American Indian or Alaskan Native, and 1 percent Black or African American (2000 U.S. Census). This is significantly different than the population of the County which was reported as 67

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[2] Final 2030 Cities/County Forecast, San Diego Association of Governments, December 2003.

percent White, 18 percent multiple race, 9 percent Asian, 6 percent Black or African American, and 1 percent American Indian.

The proportion of the Planning Area population that was reported as Hispanic origin was similar to the countywide population (26% v. 29%, respectively). However, English only speaking households are much more predominate in the Planning Area than the county (84% v. 67%, respectively).

Housing vacancy rates are much higher in the Planning Area than the county (34.5% v. 4.3%). This is largely due to the significant number of vacation/second homes. Within the Planning Area most of the residences are single-family detached units (68%) compared to 59 percent detached dwelling units for the county. Multi-family attached dwelling units represented only 11 percent of the housing in the Planning Area; however mobile home units represented 21 percent of the housing units.

A significant proportion of the housing units within the Planning Area are owner-occupied (76%), compared to 55 percent reported for the county. The median home value in the Planning Area as reported in the 2000 U.S. Census was $168,000, compared to $223,000 for the county. Significant housing appreciation was experienced throughout the county during the 2000–2005 period. However, the relative housing values for the county and the Planning Area have likely been maintained.

Compared with all residents of the county, the Planning Area residents are employed more often in construction (13% v. 9%) and services (24% v. 16%). Eastern San Diego County residents are less likely to be employed in professional and management positions than countywide residents (28% v. 38%).

Population and Employment Forecast. Substantial population growth is forecast for the Planning Area. Over the 30 year period of 2000 to 2030 the population of the Planning Area is expected to increase about 150 percent compared with a 37 percent increase in the population of the county. Employment growth for residents of the Planning Area is also expected to be very strong over the period rising 106 percent compared with a more modest 32 percent increase in employment within the county.

It should be noted that the nominal amount of employment and population growth that is forecast for the Planning Area is relatively modest compared with the county. Total population growth for the period of 2000-2030 is expected to be 20,600 for the Planning Area compared with 1,041,000 for the county. Total employment growth for the period of 2000-2030 is expected to be 5,500 for the ESDC compared with 439,000 for the county.

However, the rural character and feel of the Planning Area will be impacted by the addition of 20,600 residents. These new residents will be younger and the household size will be larger than the existing population. This population growth will be a consequence of the continued pressure of high housing costs in the suburban areas of the county and the push of new housing development into outlying areas of the county.

3.19.1.1.2 Economic Characteristics

The BLM and the Sonoran Institute have developed a very sophisticated economic profiling system (EPS) that enables very detailed analyses of economic and demographic trends, primarily at the county level and for larger areas. However, it has been clearly demonstrated in the preceding demographic discussion that the Planning Area represents a fairly small portion of the county in terms of land area, population and employment. The same is true for the economic value of the goods and services that are produced with the Planning Area.

As a very general overview, the Planning Area may be defined as containing about 0.5 percent of the countywide population. It also generates about 0.25 percent of the jobs within the county and about 0.2 percent of the county's regional product. The Planning Area is very rural and the economy is relatively stagnant compared with the densely populated and dynamic economy of San Diego County. Therefore, it was determined by CIC Research, Inc. that the EPS database would be somewhat misleading and inappropriate for general application in the analysis for the Eastern San Diego County DRMP.

To produce the estimates of employment and the value of regional product, CIC developed a regional input-output (I-O) model for the Planning Area and for San Diego County. The regional I-O model was based on software and data provided by Impact Analysis for Planning (IMPLAN)/Pro. The value of the IMPLAN/Pro system coupled with CIC's experience and knowledge of the Planning Area was to provide a basis for measuring the size of key economic sectors of the Planning Area in terms of output,

income, and employment. The I-O system also provided the ability to model the expected impact of exogenous changes in the Planning Area economy based on planning alternatives for the proposed regional master plan. The economic impacts (direct, indirect, and induced) were determined for each of the BLM proposed planning alternatives for the Eastern San Diego County DRMP and are presented in Chapter 4.

The economic impact definitions listed below explain the terms that will be used in the following paragraphs and tables:

Output is a measure of the sales generated within the local economy (the Planning Area). The total output of the economy has three sub-components: the direct sales impact, the indirect sales impact, and the induced sales impact.

> ***1. Direct sales*** impacts occur when a recreational visitor to the Planning Area purchases a meal in a local area restaurant.
>
> ***2. Indirect sales*** impacts occur when businesses make purchases from other businesses, (e.g., a Planning Area restaurant purchasing supplies [e.g., from food wholesalers] or services [e.g., linen cleaning services]). In turn each of the indirect businesses must also make purchases from their suppliers.
>
> ***3. Induced sales*** are generated by the purchases of employees and owners of the businesses with direct, indirect, and induced sales. The employees and owners spend their incomes from the compensation for labor and ownership that was required to produce the direct output, as well as all indirect and induced output required by the direct sales.

Employment is a measure of the amount of full and part-time annual average employment, including self employed proprietors, generated within the Planning Area economy.

Value-Added is a measure of the amount of value created within the economy. In this study it is the amount of value created within the Planning Area economy. There are four sub-components of value-added.

1. ***Employee compensation*** includes the wages and salaries of workers who are paid by employers, as well as the cost of benefits such as health and life insurance, retirement payments, and non-cash compensation.

2. ***Proprietary income*** consists of payments received by self-employed individuals as income from the private businesses they own. This includes income received by many private business owners ranging from a lawn care service or a dry-cleaning business, as well as doctors, attorneys, consultants and other professionals that own their business.

3. ***Other property type income*** consists of payments for interest, rents, royalties, and dividends. Payments to individuals in the form of rents received on property, royalties from contracts, and dividends paid by corporations are included here as well as corporate profits earned by corporations.

4. ***Indirect business taxes*** consist of excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses. These taxes occur during the normal operation of businesses but do not include taxes on profit or income.

Economic Characteristics of the Planning Area. The Planning Area economy generates about $215 million in gross regional product as measured by value added. The total output (sales) of the Planning Area is approximately $379 million and the total employee income is $135 million. The $379 million in output within the Planning Area supports approximately 4,400 jobs (Table 3-18). The total value added per job is approximately $48,900.

The largest sector of the Planning Area economy in terms of employment is Animal Production with a reported 564 jobs. Approximately 12 percent of the employment for the Planning Area is in Animal Production. Transportation & Warehousing was the second largest employment sector with a reported 349 jobs.

Rounding out the top five sectors of the Planning Area economy were Eating and Drinking Places (340 jobs), and Retail Trade (310 jobs) and State and Local Education (276) (Figure 3-22). The top five sectors comprise nearly half of the total employment in the Planning Area. As previously discussed, there is significant employment growth forecast for the Planning Area over the next 25 years. By 2030, employment within the Planning Area is expected to increase by more than 100 percent, adding more

TABLE 3-18
THE EASTERN SAN DIEGO COUNTY ECONOMY
(DOLLAR AMOUNTS IN $MILLIONS)

Industry	Industry Output	Employ-ment	Employee Compensation	Proprietor's Income	Other Property Income	Indirect Business Tax	Total V Add
Agriculture Farming	$ 2.66	38	$ 0.34	$ 0.36	$ 0.89	$ 0.08	$
Animal Production	$ 5.68	564	$ 2.59	$ 0.69	$ 4.89	$ 0.63	$
Forestry, Fish & Hunting	$ .13	111	$ 2.39	$ 1.27	$ 0.05	$ 0.24	$
Mining	$ -	0	$ -	$ -	$ -	$ -	$
Construction	$ 2.97	264	$ 10.48	$ 3.50	$ 2.35	$ 0.20	$ 1
Utilities	$ 3.19	22	$ 1.39	$ 0.14	$ 0.93	$ 0.09	$
Manufacturing	$ 54.27	187	$ 7.35	$ 1.04	$ 4.34	$ 0.42	$ 1
Wholesale Trade	$ 3.59	26	$ 1.35	$ 0.18	$ 0.61	$ 0.59	$
Transportation & Warehousing	$ 28.81	349	$ 13.35	$ 3.80	$ 1.37	$ 1.92	$ 2
Retail trade	$ 20.30	310	$ 7.99	$ 1.64	$ 2.48	$ 2.83	$ 1
Information	$ 8.13	15	$ 1.68	$ 0.30	$ 2.10	$ 0.65	$
Finance & Insurance	$ 15.04	127	$ 5.01	$ 1.61	$ 2.86	$ 0.24	$
Real estate & rental	$ 18.21	94	$ 1.17	$ 1.67	$ 7.41	$ 2.27	$ 1
Prof.-Scientific & Tech. Srvcs.	$ 11.18	95	$ 4.87	$ 1.09	$ 0.92	$ 0.08	$
Admin. & Waste Services	$ 4.68	73	$ 1.83	$ 0.18	$ 0.48	$ 0.11	$
Educational Services	$ 5.83	174	$ 4.17	$ 0.14	$ 0.00	$ 0.01	$
Health & social services	$ 12.62	164	$ 5.38	$ 1.22	$ 1.15	$ 0.09	$
Arts - Entertainment & Rec.	$ 0.98	15	$ 0.26	$ 0.09	$ 0.01	$ 0.01	$
Other Amuse., Gambling, & Rec.	$ 3.02	41	$ 0.92	$ 0.14	$ 0.61	$ 0.24	$
Hotels & Motels	$ 16.14	223	$ 5.94	$ 0.57	$ 3.33	$ 1.61	$ 1
Other Accommodations	$ 17.65	203	$ 4.32	$ 0.28	$ 2.78	$ 0.66	$
Eating and Drinking Places	$ 16.61	340	$ 5.54	$ 0.33	$ 1.53	$ 0.85	$
Other Services (bus./personal)	$ 10.39	262	$ 5.03	$ 0.77	$ 0.43	$ 0.34	$
Government Enterprises	$ 9.41	53	$ 3.52	$ -	$ 0.14	$ 0.01	$
State & Local Education	$ 12.73	276	$ 11.46	$ -	$ 1.28	$ -	$ 1
State & Local Government	$ 15.63	225	$ 13.87	$ -	$ 1.76	$ -	$ 1
Federal Military	$ -	0	$ -	$ -	$ -	$ -	$
Federal Government	$ 13.16	150	$ 12.97	$ -	$ 0.19	$ -	$ 1
Totals	$ 379.00	4,402	$ 135.15	$ 20.99	$ 44.90	$ 14.15	$ 21

than 5,000 jobs. Most of this growth is expected in the retail, restaurants (food services), and construction sectors.

3.19.2 Livestock Grazing: Baseline Economic Conditions

There are approximately 63,880 acres of land available for grazing under lease in Eastern San Diego County on BLM lands. This grazing land is located in McCain Valley and there are a total of 131 head in cow/calf grazing operations. Over the most recent five year period the total income from the BLM grazing leases was $3,666.62 or an average of about $733 per year. There are no feedlots located on BLM-administered lands within the Planning Area.

The 63,879 acres of grazing land with 131 head equals 488 acres per head. The 131 head would be expected to yield 23 head per year from the cow/calf operations (an expected average of 175 calves per 1,000 head).

Based on information published in Livestock News (September 28, 2005), the five-year rolling average for calf weaning weights was 588 pounds. Based on an average weight yield of 558 pounds per calf and market value of $0.99 per pound the total annual output (sales) for the cow/calf operations would be about $12,705.

In 2004 there were 28,000 head of cattle and calves in San Diego County delivered to market representing 210,000 hundred weight (cwt) and $19.1 million total market value. The grazing activity on BLM lands in the Planning Area is generating a very small percentage of the total countywide value of cattle and calves delivered to market each year. Using the IMPLAN regional input-output model for ESDC, the overall economic baseline value of livestock grazing for the Planning Area is as follows in Table 3-19.[3] The economic value generated by grazing activities on BLM lands in ESDC is very small in relation to the total value of cattle operations within the county.

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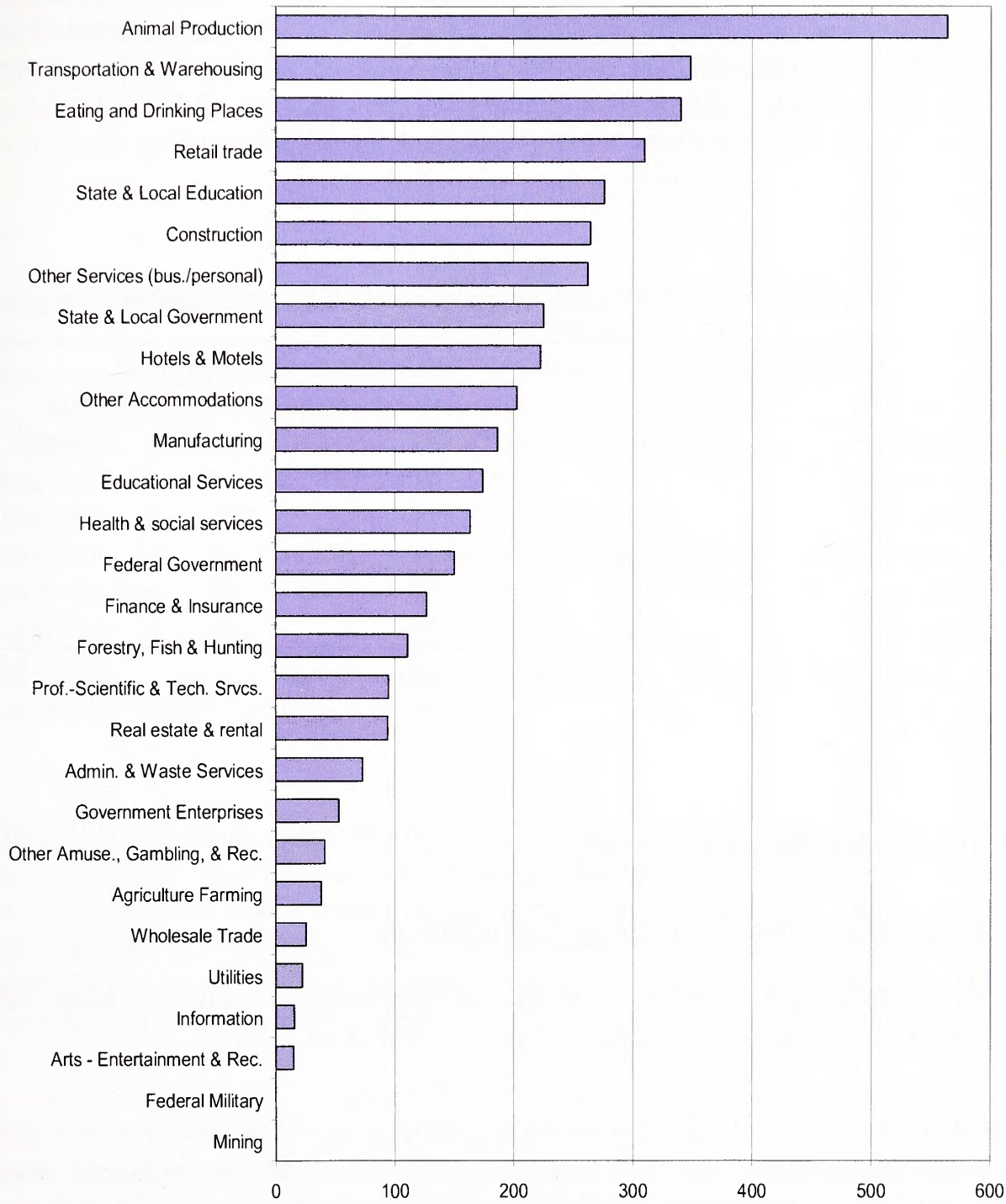
[3] County of San Diego, Dept. of Agriculture, Weights & Measures, *2004 Crop Statistics & Annual Report*.



DRAFT

El CENTRO FIELD OFFICE
RESOURCE MANAGEMENT PLAN

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
El Centro Field Office
February 2007

The Bureau of Land Management makes no warranties, implied or expressed, with respect to information shown on this map.

FIGURE 3-22: The Eastern San Diego County Economy (Employment Ranked by Sector)

The $12,705 in annual direct sales (output) generated on BLM lands in the Planning Area represent an infinitesimal 0.07 percent of the $19.1 million in countywide output of cattle and calves. The $12,705 in direct sales in the Planning Area generated a total impact (direct, indirect, and induced) of $23,281 in output, including $6,199 in total value added. The total value added within the Planning Area included $2,802 in labor income (wages and salaries) and a total of 0.18 jobs (about one-fifth of a job).

TABLE 3-19
BASELINE ECONOMIC CONDITION FOR LIVESTOCK GRAZING

Economic Baseline Condition - 63,879 Acres Averaging 131 Head				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 12,705	$ 9,625	$ 951	$ 23,281
Employment	0.10	0.07	0.01	0.18
Labor Income	$ 646	$ 1,875	$ 281	$ 2,802
Property Income	$ 910	$ 1,466	$ 238	$ 2,613
Tax Revenue	$ 363	$ 335	$ 66	$ 764
Value Added	$ 1,367	$ 4,246	$ 586	$ 6,199

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

3.19.3 Lands and Realty

3.19.3.1 Baseline Economic Conditions

Economic baseline condition for the lands and realty program focuses on authorizations for communication sites, renewable energy sites, and other ROWs.

Communication Sites. BLM has 1.29 acres of communication sites within the Planning Area and in FY2005-2006 received $1,601.35 in rent. There are two current communication sites consisting of three facilities. The communication sites are 0.04 acre and one acre in size and are situated on mountain tops in order to provide good signal reception and transmission. The Table Mountain site houses two facilities. The U.S. Border Patrol has one and a commercial entity controls the other for cellular usage. The second site is located near Banner Grade and has one 800 megahertz radio communication facility operated by the County of San Diego.

BLM communication sites require roughly $10,000 per year per facility for maintenance. Thus, the three existing facilities require $30,000 in maintenance cost on an annual basis. The annual economic value generated by BLM communication facilities is an insignificant portion of the ESDC economy. Using the IMPLAN model for Eastern San Diego County, the baseline economic costs of the annual maintenance for the existing communication facilities are as follows in Table 3-20.

TABLE 3-20
BASELINE ECONOMIC CONDITION OF COMMUNICATION SITES AND FACILITIES FOR THE PLANNING AREA

Economic Baseline Condition - 3 Communication Facilities				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 30,000	$ 5,255	$ 5,421	$ 40,676
Employment	0.24	0.04	0.05	0.33
Labor Income	$ 12,653	$ 1,716	$ 1,602	$ 15,971
Property Income	$ 2,202	$ 630	$ 1,361	$ 4,193
Tax Revenue	$ 183	$ 220	$ 377	$ 780
Value Added	$ 15,038	$ 2,566	$ 3,340	$ 20,944

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

The two BLM communications sites with a total of three facilities require $30,000 of direct output within the Planning Area for annual maintenance. The $30,000 in annual direct sales generated a total impact (direct, indirect, and induced) of $40,676 in output, including $20,944 in total value added. The total value added within the Planning Area included $15,971 in labor income, $4,193 in property income, $780 in tax revenue, and a total of 0.33 job (about one-third of a job).

Rights of Way (ROW). BLM issues ROWs within the 103,303 acres of BLM lands in the Planning Area. These ROW grants are generally for communication and utility corridors that cross BLM land, although ROWs are granted for other types of uses as well. For FY2005-2006, $14,670 was expected in rent, with an average of about $42.25 per acre and 347 acres are in right of ways, based on 28 miles of ROWs with a maximum average width of 100 feet. Pursuant to 43 CFR 2806.14, Federal, state, and local governments, or their agent or instrumentality, are exempt from paying rent unless the facility, space, or any part of the ROW is used for commercial purposes.

The majority of annual economic costs for ROWs are associated with the maintenance of paved and unpaved roadways. The average annual cost per mile of maintained ROW is approximately $4,000 per mile. Applying this figure to the 28 miles of BLM right of way in the Planning Area yields an annual maintenance cost of $112,000. The annual economic value generated by BLM ROWs is an insignificant portion of the ESDC economy. Using the IMPLAN model for Eastern San Diego County, the baseline economic cost of the annual maintenance for the existing right of ways is as follows in Table 3-21.[4]

TABLE 3-21
BASELINE ECONOMIC CONDITION OF ROW FOR THE PLANNING AREA

Economic Baseline Condition - 347 Acres/28 Miles of ROW				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 112,000	$ 19,619	$ 20,238	$ 151,857
Employment	0.90	0.15	0.18	1.23
Labor Income	$ 47,238	$ 6,407	$ 5,981	$ 59,626
Property Income	$ 8,220	$ 2,351	$ 5,082	$ 15,653
Tax Revenue	$ 684	$ 822	$ 1,407	$ 2,912
Value Added	$ 56,142	$ 9,579	$ 12,470	$ 78,191

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

3.19.3.2 Program-specific Socio-cultural Conditions

A very small fraction of the economic activity within BLM lands in ESDC is generated by communications sites and transportation maintenance activities. These activities on BLM lands in ESDC involve and/or affect very few people.

[4] Jason W. Phipps, Civil Engineering Technician at the Yuma County Public Works Department provided cost per mile for ROW and road maintenance, June 13, 2006. Detailed cost for ROW construction and maintenance in Eastern San Diego County has been requested from SDG&E, the primary user of BLM right of way in the study area. This section of the report will be updated when the SDG&E cost data are provided.

Renewable Energy. Renewable energy ROWs on BLM lands are generally for solar or wind energy sites. There are no solar energy sites on BLM lands within the Planning Area. Solar potential is likely discounted due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat, and VRM classes.

There are no permanent wind energy facilities on BLM lands within the Planning Area, however, there is a wind energy test site with a 3-year interim ROW. The test site encompasses 17,000 acres. BLM receives revenue of $1 per acre per year. A permanent facility would generate annual revenue for BLM of $2,365 per MW paid in advance. The expected cost of developing a wind energy site on BLM land is approximately $900,000 per MW. These costs include $720,000 per MW for the equipment, which is not available for purchase within the Planning Area, and $180,000 for site preparation and installation. The annual cost of maintenance of the site would be $33,288 per MW.[5] Using the IMPLAN model for Eastern San Diego County, the baseline economic costs per MW of energy generation capacity would be as follows in Tables 3-22 and 3-23:

TABLE 3-22
BASELINE ECONOMIC CONDITION OF SITE PREPARATION AND CONSTRUCTION FOR A WIND ENERGY SITE

Economic Baseline Condition - Per MW of Generating Capacity				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 180,000	$ 31,531	$ 32,526	$ 244,057
Employment	1.44	0.25	0.29	1.98
Labor Income	$ 75,919	$ 10,296	$ 9,612	$ 95,828
Property Income	$ 90,228	$ 15,395	$ 20,041	$ 125,664
Tax Revenue	$ 1,099	$ 1,321	$ 2,261	$ 4,681
Value Added	$ 90,228	$ 15,395	$ 20,041	$ 125,664

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

[5] http://windeis.anl.gov/documents/docs/WindFAQ21Jun05.pdf; BLM "Wind Energy Programmatic EIS, Appendix B, National Renewable Energy Laboratory Estimates of Wind Energy Resources on BLM-Administered Lands."

TABLE 3-23
BASELINE ANNUAL ECONOMIC CONDITION PER MEGAWATT FOR WIND ENERGY SITE MAINTENANCE WITHIN THE PLANNING AREA

Economic Baseline Condition - Per MW of Generating Capacity				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 33,288	$ 3,729	$ 8,266	$ 45,283
Employment	0.380	0.030	0.070	0.480
Labor Income	$ 20,650	$ 1,260	$ 2,443	$ 24,353
Property Income	$ 2,025	$ 474	$ 2,076	$ 4,575
Tax Revenue	$ 221	$ 155	$ 574	$ 950
Value Added	$ 22,895	$ 1,889	$ 5,093	$ 29,877

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

The $180,000 direct cost for site preparation and installation per MW of energy would generate a total impact (direct, indirect, and induced) of $244,057 in output, including $125,664 in total value added within the Planning Area. The total value added within the Planning Area would include $95,828 in labor income (wages and salaries) and a total of 1.98 jobs (about two jobs) per MW of energy generation.

The annual direct cost for maintenance would be $33,288 per MW of energy output and would generate a total impact (direct, indirect, and induced) of $45,283 in output, including $29,877 in total value added within the Planning Area. The total value added within the Planning Area would include $24,353 in labor income (wages and salaries) and a total of 0.48 job (about one-half a job) per MW of energy generation.

Even though the cost of wind power has decreased dramatically in the past 10 years, the technology requires a higher initial investment than fossil-fueled generators. Roughly 80 percent of the cost is the machinery, with the balance being for site preparation and installation. If wind generating systems are compared with fossil-fueled systems on a "life-cycle" cost basis (counting fuel and operating expenses for the life of the generator), however, wind costs are much more competitive with other generating technologies because there is no fuel to purchase and minimal operating expenses.

3.19.4 Mineral Resources

3.19.4.1 Baseline Economic Conditions

Locatables. There are approximately 80 mining claims filed on BLM land. The cost of a mining claim is $140 annually. The mining claim entitles the holder to the mineral rights, but not to operate a mine. To operate the mine the owner of the claim must also file a Mining Notice for operations of less than five acres or a Mining Plan for operations of more than five acres.

There are no Mining Plans and only three Mining Notices that have been filed with BLM. The three notices are for avocational mining and are not commercial operations. The existing conditions for locatables on BLM lands do not yield an economic output. Therefore, no economic baseline exists for locatable minerals, and they are not addressed further in this document.

Leasables. There are no leasable resources (e.g., oil and gas, coal, or geothermal) that are economically viable on BLM lands within the Planning Area. Therefore, the economics of leasables are not addressed further in this document.

Salables. There are no saleable resources that are economically viable (e.g., sand and gravel extraction) on BLM lands within the Planning Area. Therefore, the economics of salables are not addressed further in this document.

3.19.4.2 Program Specific Socio-cultural Conditions

Since there are no economically viable existing or proposed mineral resource operations in the Planning Area, there are no actual program-specific socio-cultural conditions *per se* relating to mining. However, from a cultural perspective, it should be pointed out that mining has an important place in the history of the West in general and specifically in the Planning Area. This is associated most notably with the community of Julian and the Gold Rush of 1870. This history is reflected in a positive view toward historic mining districts and to some degree, current mining activities. There is considerable nostalgia associated with mining and the Old West. These nostalgia values are contributing factors to the tourism that to a large degree supports the economy of the town of Julian and other western tourist towns. These values are also evident in the hobbyist mining

that takes place all over the West and to a limited degree in the Planning Area. At this point, there are no studies in the Planning Area that attempt to document and measure the nexus between history, mining, and the tourism economy of Julian.

3.19.5 Recreation Management

3.19.5.1 Baseline Economic Conditions

Recreation on ESDC BLM lands covers a wide range of outdoor activities such as sightseeing, hiking, backpacking, rock climbing, camping, photography, bird watching, horseback riding, hang-gliding/parasailing, hunting/shooting, and off-highway vehicle activity (40-inch width maximum). Recreation within the Planning Area is an important source of revenues for the local economy. The area is visited by many of the 3.1 million residents of metropolitan San Diego as an occasional leisure outing and primarily as a day use activity.

There are two relatively small campgrounds on BLM land within the Planning Area: 1) Cottonwood Campground (29 sites) and Lark Canyon (15 sites). Overnight camping within the Planning Area is primarily supported by State campgrounds (166 campsites), County of San Diego campgrounds (328 campsites/RV hookups), and private campgrounds (145 campsites/RV hookups). In addition there are nearly 500 rooms in commercial lodging accommodations including: hotel and motels, inns, bed and breakfasts, and rental cabins and second homes.[6]

Although tourism is very important to the economy of the Planning Area it is unfortunately very difficult to measure. This is especially true for recreation on BLM lands. This problem exists because reliable estimates of visitor volume are very limited for most of the activities in which the visitors are participating. There are no trail head log sheets and no fees are charged for access to the BLM lands except for the Cottonwood and Lark Canyon Campgrounds.

Recreational use data for FY2004-2005, the most current available data, were provided by the BLM El Centro Field Office from the Recreation Management Information System

[6] CIC Research, Inc., San Diego County 2005 Lodging Inventory.

(RMIS). Although limited in scope the RMIS does provide a recreational use baseline for the Carrizo Overlook (day use), Cottonwood Campground, Lark Canyon Campground, and dispersed recreational use of McCain Valley.

Cottonwood Campground had 1,758 visitors for a total of 5,889 visitor days and an average stay of over 3.3 days during FY2004–FY2005. Lark Canyon Campground had 1,483 visitors for a total of 2,644 visitor days and an average stay of about 1.8 days. The combined total number of campground visitor days was 8,533 days.

Carrizo Overlook and dispersed use of McCain Valley generated 63,793 visitor days. The overall total number of visitors to the BLM campgrounds and day use areas in FY2004-2005 was 82,483 and the total number of visitor days was 72,326.[7] This level of recreational use/visitation for the BLM land represents at most 5% of the total visitor days in the Planning Area based on an estimated 1,450,000 visitor days within the Planning Area (including recreation/visitation on non-BLM lands).

Average spending per visitor day within the Planning Area is estimated at $22. Total estimated visitor spending in the Planning Area (including non-BLM lands) is a minimum of $31.9 million annually. The $31.9 million in annual visitor spending supports about 15% of the total sales and employment within the Planning Area (direct, indirect, and induced). As a result, recreation and tourism is a very significant part of the ESDC economy. However, visitor spending by recreational users of BLM land is a modest $1.6 million. Total visitor spending within San Diego County is estimated at $6.9 billion.[8]

The annual economic value generated by recreation on BLM lands is very small compared to the overall value of recreation and tourism in the Planning Area. The total direct, indirect, and induced sales generated by camping on BLM lands is about $260,000 per year. The total direct, indirect, and induced sales generated by dispersed use of BLM lands outside of the two campgrounds is about $1.9 million per year. The

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[7] A visitor can visit multiple sites during a visitor day. The RMIS visitor modeling system has factors that account for partial-day use and multiple site visits during a visitor day.

[8] CIC Research, Inc., "2005 San Diego County Visitor Profile and Economic Impact Study," July 2006. This study was prepared by CIC Research, Inc., under contract to the San Diego Convention and Visitors Bureau.

combined total impact of day-use recreational activities and campground use is about $2,150,000 per year. Using the IMPLAN model for ESDC, the baseline economic impacts of recreation on BLM lands is as shown in Tables 3-24 through 3-28.

TABLE 3-24
BASELINE ECONOMIC CONDITION FOR BLM CAMPGROUNDS
VISITOR USE-DAY IMPACTS GENERATED FOR THE PLANNING AREA

Economic Impacts - 8,533 BLM Campground Visitor Days				
Impact Category	Direct	**Indirect**	**Induced**	**Total**
Dollar Value	$ 187,726	$ 47,771	$ 24,237	$ 259,734
Employment	2.16	0.38	0.22	2.76
Labor Income	$ 48,884	$ 15,360	$ 7,163	$ 71,407
Property Income	$ 29,597	$ 10,286	$ 6,086	$ 45,970
Tax Revenue	$ 6,980	$ 2,747	$ 1,684	$ 11,411
Value Added	$ 85,461	$ 28,393	$ 14,934	$ 128,788

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 3-25
ECONOMICS IMPACTS PER 1,000 CAMPGROUND VISITOR USE-DAYS
GENERATED BY BLM CAMPGROUNDS IN THE PLANNING AREA

Economic Impacts - Per 1,000 Campground Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 22,000	$ 5,598	$ 2,840	$ 30,438
Employment	0.253	0.045	0.026	0.324
Labor Income	$ 5,729	$ 1,800	$ 839	$ 8,368
Property Income	$ 3,469	$ 1,205	$ 713	$ 5,387
Tax Revenue	$ 818	$ 322	$ 197	$ 1,337
Value Added	$ 10,015	$ 3,327	$ 1,750	$ 15,092

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 3-26
BASELINE ECONOMIC CONDITION FOR BLM DISPERSED-USE VISITOR DAYS

Economic Impacts - 63,793 Dispersed Use Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 1,403,446	$ 271,082	$ 216,382	$ 1,890,910
Employment	28.74	1.97	1.94	32.65
Labor Income	$ 495,953	$ 77,604	$ 63,947	$ 637,504
Property Income	$ 128,996	$ 47,768	$ 54,338	$ 231,103
Tax Revenue	$ 71,840	$ 11,976	$ 15,038	$ 98,854
Value Added	$ 696,789	$ 137,349	$ 133,324	$ 967,461

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 3-27
ECONOMIC IMPACTS PER 10,000 MCCAIN VALLEY DISPERSED-USE VISITOR DAYS IN THE PLANNING AREA

Economic Impacts per 10,000 Dispersed-Use Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$220,000	$42,494	$33,919	$296,413
Employment	4.505	0.309	0.304	5.118
Labor Income	$77,744	$12,165	$10,024	$99,933
Property Income	$20,221	$7,488	$8,518	$36,227
Tax Revenue	$11,261	$1,877	$2,357	$15,495
Value Added	$109,227	$21,530	$20,899	$151,656

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 3-28
ECONOMIC IMPACTS OF COMBINED CAMPGROUND AND DISPERSED-USE VISITOR DAYS ON BLM LANDS IN THE PLANNING AREA

Economic Impacts - Combined Campground & Dispersed Day Use				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 1,591,172	$ 318,853	$ 240,619	$ 2,150,644
Employment	30.90	2.35	2.16	35.41
Labor Income	$ 544,837	$ 92,964	$ 71,110	$ 708,910
Property Income	$ 158,594	$ 58,054	$ 60,425	$ 277,073
Tax Revenue	$ 78,819	$ 14,724	$ 16,723	$ 110,266
Value Added	$ 782,250	$ 165,742	$ 148,257	$ 1,096,249

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

3.19.5.2 Program Specific Socio-cultural Conditions

Recreation within the Planning Area is an important source of revenues for the local economy. The area is visited by many of the 3.1 million residents of metropolitan San Diego as an occasional leisure outing and primarily as a day use activity. Recreation activities in the Planning Area include sightseeing, hiking, backpacking, rock climbing, camping, photography, bird watching, horseback riding, hang-gliding/parasailing, hunting/shooting, and off-highway vehicle use. Each of these activities has a user group which consists of a club or a casual group of like-minded friends and associates who constitute an avocationally-based subculture. Each of these user group subcultures (sightseers, hikers, backpackers, rock climbers, campers, photographers, bird watchers, equestrians, hang gliders/parasailors, hunters, shooters, and off-highway vehicle users) hold that their activities are important and that they should be provided ample space to pursue their activities without being disturbed.

The BLM concurs, but points out that there are sometimes conflicts among different user group subcultures and between them and protection of natural and heritage resources, as well as American Indian groups. These differing perspectives require the BLM to effect a balance between these competing interests. The BLM approaches this problem by encouraging public involvement so that the various user groups can see that their cultural values, interests, and activities are being seriously considered in a balanced management process.

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3.20 Environmental Justice

Beginning in the 1990s, the concept of environmental justice came to widespread public attention. Concern has developed over environmental justice issues among advocates for the poor and communities of color. In general terms, the focus of environmental justice is on disproportionate adverse environmental impacts on poor communities and communities of color in the United States. These impacts and the nature of disadvantaged communities are difficult to measure. However, a number of executive orders and policy initiatives have attempted to address environmental justice concerns.

Executive Order 12898 is entitled *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*. It was issued by President Clinton on February 11, 1994. The order requires federal agencies to identify minority and low-income populations and ascertain whether or not disproportionately high and adverse health or environmental effects might result from their programs, policies and activities. Subsequently, the EPA defined environmental justice as fair treatment and meaningful involvement of all people regardless of their race, color, national origin, or income, in the development, implementation, and enforcement of environmental laws, regulations, and policies. The Office of Environmental Justice coordinates the EPA's efforts to integrate environmental justice into all policies, programs, and activities. The EPA also established the National Environmental Justice Advisory Council to incorporate environmental justice into federal environmental health research, environmental law enforcement, environmental penalty assessment, environmental rule-making, and facility siting decisions.

EO 13045 is entitled *Protection of Children from Environmental Health Risks*. It requires that federal agencies assess the environmental, health, and safety risks that may disproportionately affect children. Thus, disproportional impacts to children are now considered under environmental justice.

According to the Council on Environmental Quality environmental justice guidelines, minority populations should be identified when the minority population percentage either exceeds 50 percent or the minority population is meaningfully greater than the minority population in the general population or in a meaningful geographic area. In general terms, ESDC does not contain a culturally or racially diverse population (see following section). The populations of Blacks, Hispanics, and American Indians are not meaningfully greater in the Planning Area than the general population of San Diego

County. However, there are Indian Reservations in ESDC, in which the Indian population is meaningfully greater, than in the general population, as would be expected. The proportion of San Diego County residents living below the poverty level was 12.6 percent in 2000. For Indian reservation residents within San Diego County this figure was 29.3 percent (2000 U.S. Census). There are six Indian reservations in the Planning Area. These reservations are sparsely populated today. Current population data are summarized in Table 3-29 below. As the table illustrates there is a small resident Indian population in the Planning Area, so in terms of environmental justice, they would constitute a population of concern.

TABLE 3-29
INDIAN RESERVATIONS IN THE PLANNING AREA

Band or Reservation	Resident Population	Tribal Affiliation	Reservation Acreage
Campo	351	Kumeyaay	15,336
Cuyapaipe	0	Kumeyaay	4,156
La Posta	18	Kumeyaay	3,471
Los Coyotes	70	Cahuilla	24,762
Manzanita	69	Kumeyaay	3,563
Santa Ysabel	250	Kumeyaay	15,270

The BLM has identified no disproportionate adverse impacts to American Indian or other minority groups in the Planning Area. To provide for open public involvement and address environmental justice issues for the Planning Area, the BLM sent outreach letters and made follow-up telephone calls inviting tribal representatives and other interested parties to come to a several public outreach scoping and economic planning meetings held in the San Diego, El Centro, and Julian, California. The public has also been invited to participate in the planning process by sharing their insights and concerns about the Planning Area in other meetings and by letter and telephone. A total of 15 members of the public spoke at the scoping meetings, 17 letters of comment were received, and 4 members of the public attended the economic workshop.

3.20.1 Minority and Low-income Communities

As presented in the discussion of environmental justice above, there are six Indian Reservations within the Planning Area. Of these, five have resident populations: Campo, La Posta, Los Coyotes, Manzanita, and Santa Ysabel. These Indian communities can be characterized as low income and minority. The BLM has no economic data focused on

the economic status of these communities. The BLM has identified no other communities with a majority low income or minority population. However, the BLM assumes that there are small pockets of poverty scattered throughout the Planning Area. There are no available economic, sociological, or anthropological studies of these economically disadvantaged neighborhoods that might exist within the Planning Area.

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CHAPTER 4.0
Environmental Consequences

4.1 Introduction

This chapter assesses environmental impacts due to the implementation of the alternatives described in Chapter 2. The baseline affected environment, or existing condition, is described in Chapter 3.

4.1.1 Analytical Assumptions

The following impacts analysis was conducted with the following assumptions:

- Funding and personnel will be available to implement all management actions and BMPs described in Chapter 2.
- Any requirement for the obligation of funds for projects in this DRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed management actions and BMPs shall be interpreted to require obligation or payment of funds in violation of any applicable federal law, including the Anti-Deficiency Act, 31 U.S.C. § 1341, et seq.
- The laws, regulations, and policies that direct BLM management would be applied consistently for all alternatives.
- The DRMP is expected to be in effect for 15 to 20 years.
- Short-term impacts are those expected to occur within 1 to 5 years after implementation of a management action or BMP. Long-term impacts are those that would occur after the first 5 years of implementation.

4.1.2 Types of Effects

The potential impacts from those actions that would have direct, indirect, and cumulative effects were considered for each resource. Effects and impacts as used in this document are synonymous and could be beneficial or detrimental.

Direct effects are caused by the action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or further in distance, but are still reasonably foreseeable. Cumulative impacts are those effects resulting from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions (regardless of which agency or person undertakes such actions). Cumulative impacts could result from individually insignificant but collectively significant actions taking place over a period of time.

Section 1502.16 of the CEQ regulations forms the scientific and analytic basis for the comparisons of alternatives as described under Section 1502.14—Alternatives including the Proposed Action. The environmental consequences section consolidates the discussions of those elements required by sections 102(2)(C)(i), (ii), (iv), and (v) of NEPA which are within the scope of this EIS and as much of Section 102(2)(C)(iii) as is necessary to support the comparisons. The discussion will include the environmental impacts of the alternatives, including any adverse environmental effects which cannot be avoided, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.

4.1.3 Summary of Critical Elements Addressed, Not Addressed, Not Affected, or Not Present

Critical elements identified in the BLM NEPA Handbook as amended by IM 99-178 addressed in this chapter include air quality, areas of critical environmental concern cultural resources, environmental justice, Native American religious concerns, threatened or endangered species, hazardous and solid wastes, drinking, ground or surface water quality, wetlands/riparian zones, wilderness, invasive, and nonnative species.

Critical elements not addressed and/or not present include farm lands (prime or unique), floodplains, and wild and scenic rivers.

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4.2 Impacts on Air Resources

The potential impacts to air quality could be from OHV use, vehicle emissions, dust, construction and maintenance activities, and mineral activities.

4.2.1 Air Quality

A federal action is subject to a full conformity analysis when the total of direct and indirect emissions associated with the action equal or exceed emission rates set forth in 40 CFR Part 93. The threshold (*de minimis*) levels for requiring a full conformity analysis and the amount of emissions that could result in significant impacts could be based on the attainment statuses of criteria pollutants in the project air basins. These are presented in Table 4-1:

TABLE 4-1
FEDERAL DE MINIMIS THRESHOLDS FOR THE SAN DIEGO AIR BASIN (SDAB)

	SDAB	
Pollutant	**Federal Designation**	**Threshold (tons/year)**
Ozone* (VOCs)	Non-Attainment, Basic	100
Ozone* (NOx)	Non-Attainment, Basic	100
PM_{10}	Unclassifiable	N/A
$PM_{2.5}$	Unclassifiable	N/A
CO	Maintenance	100

*Emission thresholds are given for ozone precursor elements, VOCs, and NOx based on the attainment status of ozone.

These threshold levels are used to determine the potential significance of activities on BLM-administered lands in the Planning Area. The major sources of air pollutants in the Planning Area would include OHV activity, pleasure driving, gold mining, and facility maintenance and construction. These sources were modeled and the estimated annual criteria air emissions are summarized in Table 4-2 with a comparison of yearly emissions to the *de minimis* thresholds for the San Diego Air Basin (SDAB). These annual air emissions are general estimates assumed for all alternatives.

General maintenance and construction includes typical equipment for such activities as BLM road maintenance of unpaved roads and gravelling dirt roads; facility maintenance and enhancement, such as, improvements to the Airport Mesa shooting area, new campgrounds, installation of several pit toilets in recreation areas; and construction related to wind energy development.

TABLE 4-2
ESTIMATED ANNUAL AIR QUALITY EMISSIONS

	VOCs	NOx	PM_{10}	$PM_{2.5}$	CO
OHV exhaust (motorcycles and ATVs) tons/year	3.7	0.1	0.1	0.1	9.5
OHV fugitive dust (motorcycles and ATVs) tons/year	-	-	26.9	-	-
OHV exhaust & fugitive dust (car/truck/SUV) tons/year	0.9	1.2	1,208.5	n.i.	8.8
Pleasure driving exhaust & fugitive dust (tons/year)	0.2	0.3	304.3	n.i.	2.5
Gold mining	-	-	160.3	-	-
General maintenance/construction for road and facilities	0.2	1.2	0.4	n.i.	1.4
Total Pollutant Emissions (tons/year)	5.0	2.8	1,700.5	0.1	1.4
Federal SDAB *De Minimis* Thresholds (tons/year)	100	100	N/A	N/A	100

VOCs = volatile organic compound
NOx = oxides of nitrogen
PM_{10} = particulate matter (less than 10 microns)
$PM_{2.5}$ = particulate matter (less than 2.5 microns)
CO = carbon monoxide
n.i.: not included in the model

Lesser emission-generating activities on BLM-administered lands in the Planning Area include: infrequent events such as the dual sport (motorcycle) event through Oriflamme and Chariot Canyon, the equestrian endurance/competition ride, and the Fat Tyre Bicycle Race from Julian to Chariot Canyon; Border Patrol maintenance of drag roads and the border fence; minor earthwork for compaction in revegetation work; and transmission lines monitored by helicopters approximately once a month.

As seen in Table 4-2, the estimated annual emissions are well below the *de minimis* thresholds. Consequently, this DRMP is exempt from the conformity determination requirements of the Environmental Protection Agency's conformity rule. A record of non-applicability (RONA) has been prepared and is included as Appendix K.

Discretionary construction activities would incorporate BMPs to control dust, as described in the Typical Management Actions section of Chapter 2.

As discussed in Section 4.2.5, the major contributors of air emissions in the vicinity of the Planning Area, such as freeway traffic, are not from activities occurring on BLM lands in the Planning Area. Project emissions are primarily located in remote areas, and would not result in a cumulative impact. As discussed in Section 4.2.2, prescribed burning would result in a net decrease in emissions compared to wildfire occurrence.

4.2.2 Emissions from Wildfire and Prescribed Burn

The most effective method of controlling wildfire emissions is, of course, to prevent the occurrence of wildfires by various means at the land manager's disposal. A frequently used technique for reducing wildfire occurrence is "prescribed" or "hazard fuel reduction" burning. This type of managed burn involves combustion of litter and underbrush to prevent fuel buildup under controlled conditions, thus reducing the danger of a wildfire. Although some short-term air pollution is generated by this preventive burning, the net amount is believed to be a relatively smaller quantity than that produced by wildfires (EPA 1995, Section 13.1).

Prescribed fire in the Planning Area is estimated at an average of 1,000 acres per year. Table 4-3 gives an estimate of annual emissions due to prescribed fire. Although these emissions exceed *de minimis* thresholds, they are not considered a significant impact since prescribed fire is consistent with the San Diego Air Pollution Control District's Natural Events Action Plan (NEAP) (SDAPCD 2005) and the California Fire Plan. According to the Natural Events Policy, EPA intends to treat federal Fire Management Plans as "acceptable plans for mitigating the public health impacts of smoke from wildland fires on federal lands."

TABLE 4-3
ESTIMATED ANNUAL AIR QUALITY EMISSIONS FROM PRESCRIBED BURNING

	VOCs	NOx	PM_{10}	$PM_{2.5}$	CO
(tons/year)	228	72	181	156	1,383

VOCs = volatile organic compound
NOx = oxides of nitrogen
PM_{10} = particulate matter (less than 10 microns)
$PM_{2.5}$ = particulate matter (less than 2.5 microns)
CO = carbon monoxide

4.2.3 Odors

There are no odor sources in the Planning Area in proximity to sensitive receptors. Livestock grazing and campground toilets exist, but are located in rural areas. Livestock grazing is also minimal and widely dispersed on BLM-administered lands within the Planning Area and thus does not result in a concentration of odor that would result from a feed lot.

4.2.4 Differences between Alternatives

The differences between Alternatives are minor, and are captured by the general emissions estimates in Table 4-2. Estimated emissions presented in Tables 4-2 and 4-3 would occur under all alternatives.

4.2.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts include sources not under BLM management such as: vehicle emissions from county and state roads (Interstate Highway 8, Highway 78, Sunrise Highway, and S-2), emissions from the Carrizo Railroad, county and state road maintenance, natural wildland fire and fire suppression with heavy equipment. Smoke generated from wildfires, managed natural fires, and prescribed burns would be unavoidable, but impacts would be short-term. High-pollutant emissions associated with wildland fire are typically exempt from exceedance of applicable thresholds under a natural events clause.

4.3 Impacts on Soil Resources

Soils within the Planning Area are susceptible to impacts from compaction, erosion, and mass movement.

4.3.1 Impacts Resulting in Compactions, Erosion, and Mass Movement

Compaction has the potential to occur from mechanical forms of vegetation treatments, such as fire suppression with heavy equipment or habitat restoration activities, although compaction due to habitat restoration would be minimal since the majority of work would be done with hand tools. Compaction also has the potential to occur from the use of heavy equipment in discretionary construction activities (i.e., ROW facilities and new access roads, recreational facilities, wildlife and range improvement projects, mining activities, and grazing proximate to livestock and wildlife waters). Concentrated visitor use of trails (equestrian, mountain biking and OHV), designated camping, and day-use areas result in increased soil compaction, which in turn could severely limit soil productivity. Equestrian trails range in width from 4 to 6 feet. McCain Valley Road is approximately 18 feet wide, and the single lane roads are approximately 12 feet in width. OHV routes are on average 6 feet wide. The restoration of compacted soils is also a potential action under all alternatives.

Erosion has the potential to occur from livestock grazing; vegetation management, including prescribed burn and non-native invasive plant species removal; motorized and non-motorized use of unpaved routes and trails; construction activities (i.e., right-of-way facilities and new access roads, recreational facilities, wildlife and range improvement projects, mining activities, and grazing proximate to livestock and wildlife waters) which result in removing all vegetation leaving bare soil; mineral activities and associated access routes, and sediment from mining and processing activities; and other surface disturbing activities. Concentrated visitor use of trails (equestrian, mountain biking, and OHV), designated camping, and day-use areas could also result in increased soil erosion, which in turn could severely limit soil productivity. Restoration activities, such as revegetation, would reduce the potential for erosion. As discussed in Section 2.3.3.2, erosion measures would be incorporated into projects on a case-by-case basis, and erosion would be minimized through the restoration of damaged riparian areas and the promotion of healthy native plant groundcover.

Mass movement (i.e. landslides, slumping) has a limited potential for occurrence, but could occur due to a large wildfire event followed by heavy rain. This potential would be limited by following burned area emergency response plans. There is also the potential for rockfall along roadcuts. Mass movements of these types could result in a cumulative significant loss in soil productivity in the Planning Area.

4.3.2 Differences between Alternatives

The main differences between alternatives lie in what activities will be allowable and in what areas these activities will be permitted. Construction of new wildlife waters would be authorized on a case-by-case basis under Alternatives B, D, and E. In Alternative C, there would be no construction of new wildlife waters. Under Alternatives C and E, all BLM-administered lands would be unavailable for livestock grazing, and the lands available for livestock grazing would be reduced under Alternative B. Mineral development permitting varies across the alternatives, with the most restrictions under Alternative C and the most allowable uses under Alternative D. Alternative A calls for reseeding eroding sites or allowing for natural revegetation in the Oriflamme land treatment site, the McCain Valley campgrounds, and "Competition Hill" and the installation of erosion control structures where desirable. Under Alternatives B through E the restoration of closed routes of travel would occur.

4.3.3 Unavoidable Adverse Impacts

There is potential for erosion and compaction along routes of travel and continued surface disturbance in the existing (and new) campgrounds. However, the concentration of visitor use and their associated impacts to soils is normally preferred over allowing high levels of dispersed visitor use to continue impacting a wider area.

Although BMPs would reduce adverse soil impacts due to disturbance from other discretionary facilities and maintenance activities, there could be a certain amount of unavoidable effect.

4.3.4 Short-term Use and/or Long-term Productivity

The use of routes of travel and existence of improved facilities would result in a long-term loss of productivity from a relatively short-term use.

4.4 Impacts on Water Resources

Impacts on surface water is discussed in terms of water quality (sedimentation, turbidity, and chemical/inorganic and microorganism composition) and water quantity. Impacts on ground water is discussed in terms of water quality, (dissolved solids and chemical/inorganic and microorganism composition) and quantity.

4.4.1 Surface Water

Fencing of riparian areas would reduce disturbance of riparian waters by prohibiting access by pedestrians and vehicles. Vegetation management by means of prescribed burning would temporarily denude vegetation and result in the potential for sedimentation of surface water. Dust-generating activities such as motorized and non-motorized use of unpaved travel routes, construction, and mineral extraction activities have the potential to impact water quality through increased sedimentation from soil erosion.

There is the potential for mass soil movement where a large wildfire event is followed by heavy rains. Such mass soil movement could deposit ash and sediment in surface waters. Following burned area emergency response plans would minimize this potential.

Vegetation management that includes the removal of non-native invasive plant species with higher water demands than native species (e.g. tamarisk) could decrease the demands on surface water. Construction activities, mineral extraction activities, and range and wildlife improvements could increase the use of surface water.

4.4.2 Groundwater

Vegetation management that includes the removal of non-native invasive plant species with higher water demands than native species (e.g. tamarisk) could decrease the demands on ground water. Construction activities, mineral extraction activities, range and wildlife improvements, and recreational facility improvements that would rely on well water could increase the demands on groundwater. Filling CDF holding tanks for suppression of wildfire and prescribed burn activities is an additional demand on groundwater.

Quality of groundwater could be affected by historic mineral activities and associated processing activities (acid-producing abandoned mine lands); and illegal dumping or accidental spills. Restoration (e.g., fencing of riparian areas) could result in the reduction of any input of biological contaminants (e.g. fecal bacteria) into the groundwater.

4.4.3 Differences between Alternatives

The main differences between alternatives lie in what activities will be allowable and in what areas these activities will be permitted. Construction of new wildlife waters would be authorized on a case-by-case basis under Alternatives B, D, and E. In Alternative C, there would be no construction of new wildlife waters. Construction of new wildlife waters would increase the quantity of available surface water, but has the potential to decrease groundwater stores. Under Alternatives C and E, all BLM-administered lands would be closed for livestock grazing, and the lands available for livestock grazing would be reduced under Alternative B. A reduction in livestock grazing would reduce the amount of water used. Mineral development permitting varies across the alternatives, with the most restrictions under Alternative C and the most allowable uses under Alternative D. Alternative A calls for reseeding eroding sites or allowing for natural revegetation of approximately 100 acres in the Oriflamme land treatment site, the McCain Valley campgrounds, and "Competition Hill" and the installation of erosion control structures where desirable.

4.4.4 Unavoidable Adverse Impacts

Run-off from authorized activities (e.g., routes of travel, mining, grazing) could result in unavoidable adverse impacts to surface water quality.

Use authorizations that draw surface or ground waters (e.g., recreational activities, grazing/wildlife watering systems) could result in unavoidable adverse impacts to water quantity.

Fire (e.g., wildfire and vegetation management prescribed) could result in unavoidable adverse impacts to surface water quality from the introduction of ash and sediment to waters. Filling CDF holding tanks for wildfire suppression and prescribed fire activities could result in unavoidable adverse impacts to ground water quantity.

Although the groundwater basins in the Planning Area are considered "low use," the potential exists for immeasurable cumulative decreases to groundwater quantity.

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4.5 Impacts on Vegetative Resources

Impacts could occur to terrestrial and riparian vegetation, priority plant species, and desired plant communities from the following: 1) direct loss of vegetative resource; 2) increase in non-native invasive species, and 3) change in cover species composition and structure, including density and vegetation.

The desired plant communities on BLM-administered lands within the Planning Area are mixed riparian woodland, mixed conifer woodland, desert wash, desert fan-palm oasis, enriched desert scrub, oak woodlands, and semi-desert chaparral. There are a number of priority plant species that are rare, unusual, or key species not listed as BLM sensitive or threatened and endangered by the federal or California governments (see Table 2-2). These species are worthy of special treatment as they indicate ecological health, biological diversity, and unique habitats. The introduction or spread of invasive weed species could result in impacts to vegetation resources.

4.5.1 Terrestrial and Riparian Vegetation

Native terrestrial and riparian vegetation loss would be temporary or permanent based on the size and scale of the surface-disturbing activity and could include, but is not limited to, construction of new recreational facilities, mining-related activities, road building, and construction/maintenance of ROWs. Temporary losses are impacts from construction or other surface-disturbing activities that would recover post-activity. Permanent losses would include conversion of vegetation from construction of permanent facilities and structures. Vegetation loss would be minimal in WAs, WSAs, and ACECs, designated to protect sensitive resource values. Exclusion and avoidance areas would help to direct projects into areas that would have reduced impact on vegetation resources.

Impacts to native terrestrial and riparian vegetation could include both degradation and enhancement depending on the activities or decisions implemented. Degradation could be caused by activities that would change vegetative composition or structure. Enhancement could be caused by activities (e.g., vegetative management) that result in the restoration of a desirable native vegetative composition and improved seeding, germination, growth, and recruitment. Some of the vegetative management activities (e.g., prescribed fire, non-native invasive plant species removal, mechanical vegetation removal) and wildfire suppression activities would result in temporary degradation to

terrestrial and riparian vegetation, but the overall result would be enhancement of vegetative quality due to restoration of natural ecosystem function.

Range and wildlife habitat improvement projects (e.g., livestock tanks, wildlife waters) could concentrate livestock and game animals in areas where populations are water dependent resulting in increased utilization and degradation of vegetative resources in adjacent areas. Likewise, in areas where populations are not water dependent, man-made water sources can be used to disperse wildlife and livestock to allow more efficient use of existing resources. Impacts to terrestrial vegetation from grazing activities (e.g., overgrazing, trampling of vegetation and soil, introduction of non-native invasive plant seed) would vary depending on timing, intensity, and duration of grazing.

OHV use could result in destruction of vegetation along trails edges and areas where vehicles are allowed to pull off routes. OHVs could also cause compaction of soils, which would reduce seeding and germination in these areas.

4.5.2 Non-native Invasive Plant Species

Human activity and supplemental feeding for livestock and horses could result in the introduction and spread of non-native invasive plant species, resulting in degradation of native terrestrial and riparian vegetation. OHV use and other surface-disturbing activities could promote the spread of invasive plant species by denuding native plant cover and discouraging native plant development. Equipment used during construction activities could introduce non-native invasive species.

4.5.3 Desired Plant Communities

The following desired plant communities could be impacted by BLM activities: mixed riparian woodland, oak woodland, semi-desert chaparral, and desert fan–palm oasis. The activities that could result in impacts to each community are described below.

Mixed riparian woodland: Treatment for control of non-native invasive plant species (esp. tamarisk) would result in a benefit to mixed riparian woodland communities by promoting recovery of native vegetation.

Oak woodland: Camping activity beneath oaks could cause soil compaction, which results in decreased water percolation into the soil and lower success of seedlings. Mechanical vegetative management activities (fuel reduction) could result in loss of snags and thinning of trees.

Semi-desert chaparral: Vegetative management activities (mechanical and prescribed burn fuel reduction) could result in beneficial effects due to reduced vegetative understory and exposure of soils.

Desert fan palm oasis: Treatment for control of non-native invasive plant species (especially tamarisk) would result in a benefit to desert fan palm oasis communities by promoting recovery of native vegetation.

4.5.4 Differences between Alternatives

Table 4-4 displays the impacts on vegetation resources by alternative. Some BLM land use plan decisions and authorized activities would be beneficial through vegetation protection and enhancement, while others would be adverse by authorizing discretionary activities that could result in detrimental effects to vegetation.

4.5.5 Unavoidable Adverse Impacts

Severe and frequent wildfire occurrences in the Planning Area would result in surface disturbance associated with suppression activities causing loss of vegetation resources until natural regeneration or restoration activities occur. These could result in an adverse impact to vegetation resources in the BLM-administered lands within the Planning Area.

Law enforcement or emergency search and rescue activities occurring in areas supporting priority plant species and desired plant communities could result in unavoidable adverse impacts to these resources.

TABLE 4-4
IMPACTS TO VEGETATION RESOURCES BY ALTERNATIVE

	A	B	C	D	E
Special Designations (acres)[1]					
WAs/WSAs	62,296	62,296	62,296	62,296	62,296
ACECs	26,479	14,004	28,724	12,801	14,004
Discretionary Land Use Authorizations					
Livestock grazing (acres)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
Lands and Realty Authorization (including Renewable Energy)					
Land available for disposal (acres)	1,715	1,080	0	1,080	490
Existing withdrawals (WAs)	48,333	48,333	48,333	48,333	48,333
Existing withdrawals (PLOs)	26,696	26,696	26,696	26,696	26,696
Proposed withdrawals (acres)[2]	22,119	0	30,635	0	14,004
Exclusion Areas[3]	13,963	13,963	2,765	13,963	13,963
Avoidance Areas[3]		44,002	27,233	97	21,636
Transportation and Access					
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Implementation Level Decisions					
Routes of Travel Designations (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage Designated	191.20	191.20	191.20	191.20	191.20
Allowable route pulloff distance from edge of designated route and area of potential disturbance	300 feet (13,905 acres)	100 feet (4,635 acres)	25 feet (1,159 acres)	300 feet (13,905 acres)	25 feet (1,159 acres)

[1] These areas, because of the prescriptive protective management direction, would remain relatively unaltered or improved from their existing condition.
[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.
[3] Overlap between WSAs, ACECs, and critical habitat has been eliminated in calculating these acreages.

4.5.6 Irreversible/Irretrievable Commitment of Resources

Any lands disposed of could reduce the vegetative resources on BLM-administered lands in the Planning Area, depending on the use of that land once it leaves federal ownership.

4.5.7 Short-term Use and/or Long-term Productivity

Vegetated areas converted to permanent facilities or structures would result in a net loss of vegetation as long as those facilities or structures remain.

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4.6 Impacts on Wildlife Resources

BLM manages habitat for wildlife and therefore activities that result in surface disturbance to vegetation could result in impacts to wildlife habitat. Fish are not addressed in this section, since there are no fisheries located on BLM-administered land in the Planning Area and the amount of water reaching fisheries habitat downstream, such as San Felipe Creek and the Salton Sea, is negligible.

4.6.1 General Wildlife

Habitat loss is defined as temporary or permanent conversion of habitat to an unusable form for wildlife species. The level of loss is dependent upon the size and scale of the surface disturbing activity and could include, but is not limited to, construction of new recreational facilities, mining-related activities, road building, and ROWs. Temporary losses are impacts from construction or other surface-disturbing activities that would recover post-activity. Permanent losses include conversion of vegetation from construction of permanent facilities and structures. Habitat loss would be minimal in WAs, WSAs, and ACECs, which are designated to protect sensitive resource values. Exclusion and avoidance areas would also help to protect sensitive resources (including wildlife habitat) by directing projects into less sensitive areas.

Habitat would be fragmented when a barrier preventing wildlife movement is sufficient to separate a species from portions of its habitat. Renewable energy or mining projects involving large areas of surface disturbance could result in fragmentation when the scale or level of the project is sufficient to prevent wildlife movement or to convert large areas into unsuitable habitat, leaving blocks of suitable habitat unconnected or fragmented. Range improvement fencing projects would be constructed to BLM design standards which include measures to facilitate wildlife movement.

Habitat quality is measured by the degree to which the habitat meets the minimum needs of an animal's environment, including food, water, and cover. Impacts to habitat quality could include both degradation and enhancement depending on the activities or decisions implemented. Degradation could be caused by activities that would decrease access by wildlife to food, water, and cover. Enhancement could be caused by activities (e.g. vegetative management) that result in an increase to quality and/or quantity of food, water, and cover. Some of the vegetative management activities (e.g., prescribed fire, non-native invasive plant species removal, mechanical vegetation removal) and wildfire

suppression activities would result in temporary degradation to habitat, but overall would result in enhancement of habitat quality due to restoration of natural ecosystem function and increased quality of forage. Impacts to habitat quality from grazing activities could vary depending on timing, intensity, and duration of grazing. Grazing activities could also result in increased competition between livestock and wildlife for resources. Human activity could spread non-native invasive plants resulting in degradation of native habitat. Range and wildlife habitat improvement projects (e.g., livestock tanks, wildlife waters) would increase the amount of available water.

Recreational activities could result in degradation of wildlife habitat and mortality to individual animals through vehicle impacts and trampling. Construction activities could result in mortality through crushing and destruction of burrows. Utility structures (e.g., powerlines, wind turbines, communication towers) could result in bird and bat strike or electrocution. Undesirable species could be attracted into the Planning Area by human activities. Ravens and other predators can be attracted by illegal dumping and littering and could result in increased nest predation. Brown-headed cowbirds are attracted to disturbed areas where vegetation density has been reduced (e.g., OHV recreation areas, cattle grazed lands), which could result in increased nest parasitism and competition for resources of migratory songbirds present in the Planning Area.

4.6.2 Raptors

Foraging habitat could be impacted by vegetation management (e.g., prescribed fire, mechanical fuels reduction/vegetation management) and wildfire suppression activities which could temporarily reduce the prey base within the foraging areas,; with the rate of vegetative recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality could increase for raptors due to the stimulation of vegetation and the reduction of the vegetative understory and the return of the prey source. Manual and mechanical vegetation management would result in an increase in foraging area by reducing the vegetative understory while minimizing adverse effects to the prey base. Non-native invasive species removal could result in benefits to foraging habitat by promoting the success of native vegetative communities. Other ground disturbing activities (such as discretionary construction) could alter or eliminate habitat areas for prey species thereby degrading raptor foraging habitat.

Nesting habitat could be impacted by vegetation management and fire management activities taking out potential nesting trees; surface disturbing activities eliminating

nesting habitat; and recreation-related disturbances interfering with nesting behavior due to startle effects.

Wind energy and other utility development could result increased mortality of individuals (e.g., birdstrike, powerline electrocution).

4.6.3 Non-game Migratory Birds

Vegetative management and wildfire suppression activities (e.g., fire, manual, mechanical) that result in narrow, linear surface disturbance could benefit some non-game migratory bird species by exposing new and additional habitat for foraging for edge-dwelling species. In particular, linear surface disturbance could benefit some non-game migratory bird species by opening the shrub canopy and encouraging annual growth which will support more seed-eating birds as well as birds feeding on insects supported by the new annual growth. However, clearing of dense vegetation could also attract brown-headed cowbirds and result in increased nest parasitism of non-game migratory birds. Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within the foraging areas through conversion of large amounts of foraging habitat to early successional stages; with the rate of vegetation recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality could increase for non-game migratory birds due to the stimulation of vegetation. Grazing activities could result in the reduction of available food resources for non-game migratory bird species and attract brown-headed cowbirds, resulting in increased nest parasitism. Non-native invasive plant species' removal could result in benefits to foraging habitat by promoting the success of native vegetative communities. Other ground-disturbing activities (such as discretionary construction) could alter or eliminate foraging habitat.

Invasive species (e.g., tamarisk) removal could result in benefits to non-game migratory birds by increasing the availability of surface water. Range and wildlife habitat improvement projects (e.g., livestock tanks, wildlife waters) would increase the amount of available water for non-game migratory birds. However, wildlife waters could also increase the presence of predator species, such as coyotes and bobcats.

Vegetative management and wildfire suppression activities (e.g., fire, manual, mechanical) could temporarily reduce the amount of cover available for non-game migratory bird species. Non-native invasive plant species' removal would result in the restoration of native vegetative communities, providing increased quality and quantity of

habitat for these species. Other ground-disturbing activities (such as discretionary construction) could alter or eliminate available cover.

Wind energy and other utility development could result in increased mortality (e.g., birdstrike, powerline electrocution) to individuals. Motorized vehicle travel could result in birdstrike or destruction of ground nests.

4.6.4 Bats

Vegetative management and wildfire suppression activities (e.g., fire, manual, mechanical, grazing) that result in narrow, linear surface disturbance could impact bat species by exposing new and additional habitat for foraging. Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within the foraging areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality could increase for bats due to the stimulation of the ecosystem by encouraging new plant growth which would support an increase in insects available for forage. Non-native invasive plant species' removal could result in benefits to foraging habitat by promoting the success of native vegetative communities and increasing the prey base. Other ground-disturbing activities (such as discretionary construction) could alter or eliminate foraging habitat.

Invasive species' (e.g., tamarisk) removal could result in benefits to bats by increasing the availability of surface water. Range and wildlife habitat improvement projects (e.g., livestock tanks, wildlife waters) would increase the amount of available water.

Vegetative management and wildfire suppression activities (fire, manual, mechanical) could reduce the amount of roosting habitat available for tree-roosting bat species. Backfilling of abandoned mine shafts or adits would eliminate bat roosting habitat. Installation of a bat friendly closure device at the entrance of abandoned mine shafts or adits (e.g., gates or cable nets) in accordance with typical management actions could cause bats to abandon a gated roost site in favor of a non-gated mine shaft or adit. However, gating of abandoned mines would eliminate disturbance of bat roosting habitat by human intrusion. In some cases, abandoned mines are also archaeological sites and therefore subject to all applicable laws and regulations regarding cultural resources.

Wind energy and other utility development could result in increased mortality to individuals (e.g., bat strike, powerline electrocution).

4.6.5 Game Animals (Birds and Mammals)

Vegetative management and wildfire suppression activities (e.g., fire, manual, mechanical) that result in narrow, linear surface disturbance could benefit game animals by opening the understory and stimulating growth of annual vegetation used by these species as forage. Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within the foraging areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality and palatability could increase for game animals due to the stimulation of vegetation. Grazing activities could result in competition for available food resources with game animals. Non-native invasive plant species' removal could result in benefits to foraging habitat by promoting the success of native vegetative communities. Other ground-disturbing activities (such as discretionary construction) could alter or eliminate foraging habitat.

Invasive species' (e.g., tamarisk) removal could result in benefits to game animals by increasing the availability of surface water. Range and wildlife habitat improvement projects (e.g., livestock tanks, wildlife waters) would increase the amount of available water. In areas where water resources are a limiting factor, construction of these waters would concentrate game animals resulting in increased competition for vegetative resources in adjacent areas and a higher rate of disease transmission. In areas where water resources are not a limiting factor, construction of wildlife waters would promote population dispersal into underutilized areas. Wildlife waters could also increase the presence of predator species, such as coyotes and bobcats.

Vegetative management and wildfire suppression activities (e.g., fire, manual, mechanical) could reduce the amount of cover available for game animals. Non-native invasive plant species removal would result in the restoration of cover by native vegetative communities. Other ground disturbing activities (such as discretionary construction) could include damage or removal of vegetation potentially altering or eliminating available cover.

4.6.6 Differences between Alternatives

Table 4-5 displays the impacts on wildlife resources by alternative. Some BLM Land Use Plan (LUP) decisions and authorized activities would be beneficial through habitat protection and enhancement, while others would be adverse by authorizing discretionary activities that could result in detrimental effects to habitat.

TABLE 4-5
IMPACTS TO WILDLIFE RESOURCES BY ALTERNATIVE

	A	B	C	D	E
Special Designations (acres)[1]					
WAs/WSAs	62,296	62,296	62,296	62,296	62,296
ACECs	26,479	14,004	28,724	12,801	14,004
Discretionary Land Use Authorizations					
Livestock grazing (acres)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
Lands and Realty Authorization (including Renewable Energy)					
Land available for disposal (acres)	1,715	1,080	0	1,080	490
Existing withdrawals (WAs)	48,333	48,333	48,333	48,333	48,333
Existing withdrawals (PLOs)	26,696	26,696	26,696	26,696	26,696
Proposed withdrawals (acres)[2]	22,119	0	30,635	0	14,004
Exclusion Areas[3]	13,963	13,963	2,765	13,963	13,963
Avoidance Areas[3]		44,002	27,233	97	21,636
Transportation and Access					
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Implementation Level Decisions					
Routes of Travel Designations (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage Designated	191.20	191.20	191.20	191.20	191.20
Allowable route pulloff distance from edge of designated route and area of potential disturbance	300 feet (13,905 acres)	100 feet (4,635 acres)	25 feet (1,159 acres)	300 feet (13,905 acres)	25 feet (1,159 acres)

[1] These areas, because of the prescriptive protective management direction, would remain relatively unaltered or improved from their existing condition.
[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.
[3] Overlap between WSAs, ACECs, and critical habitat has been eliminated in calculating these acreages.

4.6.7 Unavoidable Adverse Impacts

Illegal kill, harm, harassment, removal, or capture of animals (game and non-game), including eggs, could result in unavoidable loss to individual animals.

Wildfire occurrences in the Planning Area, suppression activities and burned areas could result in an unavoidable impact to wildlife resources in the BLM-administered lands within the Planning Area.

Law enforcement or emergency search and rescue activities occurring in areas supporting priority species could result in unavoidable adverse impacts to priority wildlife resources. These impacts could be caused by flushing wildlife from cover and disrupting natural processes, such as breeding behavior or foraging, and could result in direct or indirect mortality.

4.6.8 Irreversible/Irretrievable Commitment of Resources

Any lands disposed of would reduce the wildlife habitat on BLM-administered lands in the Planning Area, depending on the use of that land once it leaves federal ownership.

4.6.9 Short-term Use and/or Long-term Productivity

Habitat converted to permanent facilities or structures would result in a net loss of wildlife habitat as long as those facilities or structures remain in use.

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4.7 Impacts on Special Status Species

The general habitat impacts for all special status species are described above in the Wildlife (Section 4.2.5) and Vegetative (Section 4.2.4) resources sections. The information below refers specifically to the special status species found within BLM-administered lands in the Planning Area.

4.7.1 Impacts on Federally Listed Species

There are seven plant and wildlife species in the Planning Area listed under the federal Endangered Species Act including Nevin's barberry, San Bernardino blue grass, quino checkerspot butterfly, least Bell's vireo, SWFL, Peninsular bighorn sheep, and Laguna Mountains skipper. Only one of these species, the Peninsular bighorn sheep, is a permanent resident. The least Bell's vireo and SWFL are transitory in the area. Nevin's barberry, San Bernardino blue grass, and Laguna Mountains skipper are not expected to be found on BLM-administered public lands within the Planning Area, although these species are found on Forest Service lands nearby. The quino checkerspot butterfly has suitable habitat in certain areas, but has not yet been detected on BLM-administered public lands within the Planning Area. Three additional listed species, Mexican flannelbush, arroyo toad, and unarmored three-spine stickleback, are not expected to occur on BLM-administered lands within the Planning Area, as there is no suitable habitat present for either of these species.

4.7.1.1 Quino Checkerspot Butterfly

Degradation could be caused by activities that would alter vegetative composition and promote competition with primary host plants (*Plantago* spp. and *Antirrhinum* sp.). Other vegetative management activities (e.g., non-native invasive plant species removal) could promote host plant development. OHV use, wildfire suppression activities, and other surface-disturbing activities could promote the introduction and spread of non-native invasive plant species, discouraging larval host plant and nectar source; result in soil compaction; destroy host plants; increase erosion and fire frequency; and cause egg and larval mortality. OHV activity could result in a benefit where the activity opens up the canopy in an otherwise dense plant community, thereby creating additional habitat for host plants and larva (USFWS 2003). Wildfire suppression activities also have the potential for opening up the canopy providing additional habitat. Human activity; supplemental feeding for livestock and horses; and use of heavy equipment for construction activities could also result in the introduction and spread of non-native

invasive plant species, resulting in degradation of quino checkerspot habitat. Enhancement to quino checkerspot butterfly habitat could be caused by mechanical fuels management to reduce fire frequency and severity. Impacts to habitat quality from grazing activities could vary depending on timing, intensity, and duration of grazing (USFWS 2003). Cattle could impact habitat by preferential feeding on native forbs, increasing nitrification, and degrading cryptogrammic soil crusts and reducing soil mychorrizae, accelerating soil erosion, and transporting and depositing non-native invasive plant seeds.

Critical habitat for quino checkerspot butterfly is designated and is located in the southern portion of the Planning Area. Approximately 127 acres of critical habitat occur on BLM-administered lands on and adjacent to Round Mountain. There are no grazing allotments or OHV routes within the critical habitat. Mineral entry would be eliminated from critical habitat in Alternatives C and E. Mineral entry would be allowed in this critical habitat in Alternatives A, B, and D; however, this parcel is land-locked by state parks and private lands and has limited access. BLM management activities would not adversely impact Quino Checkerspot Butterfly Critical Habitat under any alternative.

There are 171,605 acres of designated critical habitat for quino checkerspot butterfly, located in San Diego and Riverside Counties. Of the total critical habitat, 74,575 acres are within San Diego County; 24,175 acres of them are on federal land; 9,395 acres are on county or state land; and 41,005 acres are on private land. A total of 34,024 acres of critical habitat is designated on federal lands in San Diego and Riverside Counties. There are 127 acres found on BLM-administered lands within the Planning Area, which represents less than one-tenth of one percent of the total critical habitat and approximately two-tenths of a percent of the critical habitat in San Diego County. Federal lands in San Diego County represent 32 percent of critical habitat within the county, local and state ownerships represent 13 percent, and private holdings represent 54 percent.

Given the small amount of critical habitat managed by BLM within the Planning Area and the level of protective measures built into each of the alternatives presented in this document (see Section 2.3.7.2), BLM actions would have no cumulative effect on this species.

4.7.1.2 Peninsular Bighorn Sheep

According to USFWS (2000), human activities could result in disturbance to Peninsular bighorn sheep. This could be construed as habitat loss when the effect is repeated often enough to result in a permanent avoidance of the area by the species. Mineral entry could result in effects to this species, as approximately 2,500 acres of critical habitat is designated outside every other special designated areas. Mineral entry would be allowed in critical habitat under Alternatives A, B, D, and E, but eliminated under Alternative C.

Livestock, particularly domestic sheep, could adversely impact Peninsular bighorn sheep by being a vector for potential diseases, such as blue-tongue virus, and by transportation and deposition of invasive non-native plant species' seeds. Adherence to the nine-mile rule for separation of domestic and wild sheep is intended to prevent these impacts. In addition, grazing would be eliminated from critical habitat in Alternatives B, C, D, and E, which totals approximately 2,500 acres outside of other special designated areas. Invasive non-native plant species (e.g., tamarisk) could out-compete native food sources, thereby reducing sheep forage and surface water availability. Tamarisk could grow in thick impenetrable stands that block access to water sources, and create ambush areas for predators (USFWS 2000).

Vegetation management activities in targeted riparian areas would result in the removal of tamarisk and enhance the availability of forage and water (USFWS 2000).

Repeated suppression of wildfires in an area could result in dense stands of vegetation that reduce visibility for the sheep, causing them to avoid the area (USFWS 2000).

There are 844,897 acres of designated critical habitat for the Peninsular bighorn sheep located in San Diego, Riverside, and Imperial Counties (USFWS 2001). A total of 244,008 acres of critical habitat are designated on federal lands, 451,034 acres on state/local lands, and 18,184 acres on tribal and other allotted trust lands in San Diego, Riverside, and Imperial Counties. Approximately 85 percent of all critical habitat is under local, state, and federal protection. Of the total critical habitat, 467,519 acres are within San Diego County: 49,699 acres on federal land; 377,677 acres on local or state land; and 40,143 acres on private land. Critical habitat on BLM-administered lands within the Planning Area accounts for five percent of the total critical habitat and 10 percent of the critical habitat within San Diego County.

Given the large amount of critical habitat protected throughout the range of the species and given the level of protective measures built into each of the alternatives presented proposed in this document (see Section 2.3.7.2), there would be no significant cumulative effects to this species.

4.7.1.3 Laguna Mountains Skipper

The Laguna Mountains skipper requires the host plants *Horkelia clevelandii* or *Potentila glandulosa,* which are found in pine meadows and forest openings. The vegetation community on BLM lands within the Planning Area is mostly desert scrub and semi-desert chaparral. There are no open pine meadows on BLM lands in the Planning Area. Habitat modeling efforts by the USFWS have shown that the Laguna Mountains skipper does not occur on BLM lands within the Planning Area (Anderson pers. com. 2006); therefore actions on BLM lands within this Planning Area would have no effect on this species.

4.7.1.4 Least Bell's Vireo and Southwestern Willow Flycatcher

Illegal kill, harm, harassment, removal, or capture of birds, including eggs, could result in unavoidable loss to individual animals.

Wildfire occurrences, suppression activities, and burned areas could result in an unavoidable impact to these species in the BLM-administered lands within the Planning Area.

There is no critical habitat for these species on BLM-administered lands in the Planning Area. Given the protective measures built into the alternatives presented in this document for both of these species (see Section 2.3.7.2) and the fact that actions within the Planning Area would not affect critical habitat, there are no cumulative effects expected for these two species.

4.7.1.5 Mexican Flannelbush, Nevin's Barberry, and San Bernardino Blue Grass

These species are not known and not expected to occur on BLM lands within the Planning Area; therefore actions on BLM lands within this Planning Area would have no effect on this species.

4.7.2 Differences between Alternatives

TABLE 4-6
IMPACTS TO SPECIAL STATUS SPECIES HABITAT BY ALTERNATIVE

	A	B	C	D	E
Special Designations (acres)[1]					
WAs/WSAs	62,296	62,296	62,296	62,296	62,296
ACECs	26,479	14,004	28,724	12,801	14,004
Discretionary Land Use Authorizations					
Livestock grazing (acres)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
Lands and Realty Authorization (including Renewable Energy)					
Land available for disposal (acres)	1,715	1,080	0	1,080	490
Existing withdrawals (WAs)	48,333	48,333	48,333	48,333	48,333
Existing withdrawals (PLOs)	26,696	26,696	26,696	26,696	26,696
Proposed withdrawals (acres)[2]	22,119	0	30,635	0	14,004
Exclusion Areas[3]	13,963	13,963	2,765	13,963	13,963
Avoidance Areas[3]	0	44,002	27,233	97	21,636
Transportation and Access					
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Implementation Level Decisions					
Routes of Travel Designations (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage Designated	191.20	191.20	191.20	191.20	191.20
Allowable route pulloff distance from edge of designated route and area of potential disturbance	300 feet (13,905 acres)	100 feet (4,635 acres)	25 feet (1,159 acres)	300 feet (13,905 acres)	25 feet (1,159 acres)

[1] These areas, because of the prescriptive protective management direction, would remain relatively unaltered or improved from their existing condition.
[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.
[3] Overlap between WSAs, ACECs, and critical habitat has been eliminated in calculating these acreages.

4.7.3 Unavoidable Adverse Impacts

4.7.3.1 Quino Checkerspot Butterfly

Increases in soil nitrogen (from burning fossil fuels, production of fertilizers, and cultivation of nitrogen-fixing crops) could promote invasive non-native plant invasion. Increase in atmospheric carbon dioxide concentration could promote plant growth and photosynthetic rates and increase the chaparral canopy resulting in canopy closure and reduction of habitat favored by the quino checkerspot butterfly. Climate change could contribute to the regional extirpation of populations of quino checkerspot butterfly. Suspicion is that drier winter–spring cycles have altered the host plant availability (USFWS 2003).

Law enforcement or emergency search and rescue activities occurring in areas supporting the butterfly could result in unavoidable adverse impacts either directly through crushing of the adult butterfly, eggs, or larva or indirectly through degrading the host plants and supporting habitat.

4.7.3.2 Peninsular Bighorn Sheep

"Prolonged drought is a natural factor that could have negative impacts on desert [sic.] bighorn sheep populations either by limiting water sources, or by affecting forage quality" (USFWS 2000). Illegal kill, harm, harassment, removal, or capture of sheep could result in unavoidable loss to individual animals. Wildfire occurrences, suppression activities, and burned areas could result in an unavoidable impact to wildlife resources in the BLM-administered lands within the Planning Area.

Law enforcement or emergency search and rescue activities occurring in areas supporting priority species could result in unavoidable adverse impacts by flushing wildlife from cover and disrupting natural processes such as breeding behavior or foraging. These actions could result to direct or indirect mortality.

4.7.3.3 Laguna Mountains Skipper

Law enforcement or emergency search and rescue activities occurring in areas supporting the butterfly could result in unavoidable adverse impacts either directly

through crushing of the adult butterfly, eggs, or larva or indirectly through degrading the host plants and supporting habitat.

4.7.3.4 Least Bell's Vireo and Southwestern Willow Flycatcher

Law enforcement or emergency search and rescue activities occurring in areas supporting these birds could result in unavoidable adverse impacts through flushing from cover and disrupting natural processes such as breeding behavior or foraging. These actions could result in direct or indirect mortality.

4.7.4 Irreversible/Irretrievable Commitment of Resources

Any lands disposed of could reduce the wildlife habitat on BLM-administered lands in the Planning Area, depending on the use of that land once it leaves federal ownership.

4.7.5 Short-term Use and/or Long-term Productivity

Habitat converted to permanent facilities or structures would result in a net loss of wildlife habitat as long as those facilities or structures remain in use.

4.7.6 Cumulative Impacts

4.7.6.1 Quino Checkerspot Butterfly

Given the small amount of critical habitat managed by BLM within the Planning Area and the level of protective measures built into each of the alternatives presented in this document (see Section 2.3.7.2), BLM actions would have no cumulative effect on this species.

4.7.6.2 Peninsular Bighorn Sheep

Given the large amount of critical habitat protected throughout the range of the species and given the level of protective measures built into each of the alternatives proposed in this document (see Section 2.3.7.2), there would be no significant cumulative effects to this species.

4.7.6.3 Laguna Mountains Skipper

As this species does not occur on BLM lands in the Planning area, there would be no significant cumulative effects to this species.

4.7.6.4 Least Bell's Vireo and Southwestern Willow Flycatcher

Given the protective measures built into the alternatives presented in this document for both of these species (see Section 2.3.7.2) and the fact that actions within the Planning Area would not affect critical habitat, there are no cumulative effects expected for these two species.

4.7.6.5 Mexican Flannelbush, Nevin's Barberry, and San Bernardino Blue Grass

As these species do not occur on BLM lands in the Planning area, there would be no significant cumulative effects to this species.

4.8 Impacts on Wildland Fire Ecology

Primary impacts to wildland fire ecology are characterized as those actions that limit or enhance the ability to suppress fire, or that alter naturally occurring fire regimes. The Planning Area is situated in a transition zone between two highly flammable fuel types (chamise/semi-desert chaparral and desert scrub communities). Combined with a scattered heavy grass component and dry climatic conditions, this fuel type is characterized by extreme fire behavior potential throughout most of the year. The potential for large fire occurrence is a constant threat for private communities in the area. CDF is the primary fire protection agency for BLM-administered lands in the Planning Area. The fire suppression objective is to suppress all vegetation fires to 10 acres or less upon initial attack, based on "assets at risk analysis" which favors protection of structures in the urban interface. CDF and BLM operate under a Cooperative Fire Protection Plan which states that CDF is to consider BLM's resource protection standards to select the least cost/least damaging suppression strategy.

4.8.1. Increased Fire Risk

4.8.1.1. Livestock Grazing Management

Removal of forage by livestock, especially removal of light fuels in the form of grasses and forbs, can reduce the potential of a site to carry fire and result in fewer fires of lower intensity or lower rates of spread. A history of grazing, especially improper grazing, can convert ecological types. Conversion of grasslands or ecological types with naturally high grass components to types with higher woody species can result in lower fire frequencies but higher fire intensities when these converted types do burn. In these cases, wildfires might not burn as often, but the likelihood of a catastrophic fire increases.

4.8.1. 2 Lands and Realty Management

Continued use of the existing communication sites and utility ROW and potential reasonable foreseeable development of any lands and realty-related uses is expected to temporarily affect fuels and fire because of ground disturbance and increased opportunities for accidental human caused-ignition during construction, operation, and maintenance. More improvements and structures would do the following:

- Affect suppression and costs by placing on the ground more features that could require protection from a wildfire;
- Present more hazards, such as flight hazards from overhead power lines or explosion hazards of buried gas pipelines; and
- Create restrictions to prescribed burning.

4.8.1.3 Recreation Management

Areas with more potential development and recreation use could affect fire management by increasing the risk of accidental human-caused ignitions. Increased visitation, camping, and OHV use increases potential for cigarettes, campfires, and sparks emitted by OHVs to ignite fires.

4.8.1.4 Special Status Species Management

The presence of special status species and high value riparian habitat would limit the applicability of fuels reduction treatments which in turn increase the risk of wildfire in these areas due to uncharacteristically high and volatile fuel loads.

4.8.1.5 Public Health and Safety

International border issues such as illegal immigration, illegal drug trafficking, and associated crime results in increased potential of human caused fire. This in turn raises the risk to personal firefighter safety.

4.8.2 Limitations to Fire Suppression Tactics

- In WAs and WSAs, when wildland fire suppression is required, minimum impact suppression tactics identified in the Interagency Standards for Fire and Aviation Operations would be applied.
- Fire management activities along the Pacific Crest National Scenic Trail (NST) would 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 would be considered in implementing fire management activities (see ACEC section of this chapter).

- Wildland fire suppression activities would utilize methods with lesser ground disturbance to minimize potential adverse impacts on special status species, critical habitat, desired plant communities, and cultural resources.
- 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.
- Use of fire retardants or chemicals adjacent to waterways would be in accordance with the *Environmental Guidelines for Delivery of Retardant or Foam near Waterways* (Interagency Standards for Fire and Aviation Operations).

4.8.3 Beneficial/Enhancement

4.8.3.1 Vegetation Resource Management

Vegetation resource management would provide beneficial impacts to wildlfire management under most circumstances and alternatives within this RMP. The planning area is a non-fire use area, defined as an area that is not historically fire dependant, and where wildfires are suppressed and not allowed to burn to treat vegetation. Historic and native vegetation in the area is not fire dependant, and naturally caused wildfires were very infrequent. Vegetation treatments proposed under all alternatives would reduce hazardous fuel loads. Prescribed fire would reduce risk and potential intensity of a wildfire where these fuel treatments are applied. Restoration efforts to restore undesired and exotic-invasive plant communities would decrease the volatility of fuels, reducing the frequency of wildfires.

4.8.3.2 Lands and Realty Management

ROWs, utility corridors, and other such authorizations inadvertently create fuel breaks and provide access routes for wildfire suppression. Stipulations specific to each authorization reduces the potential threat of accidental ignition of wildfires during construction or maintenance.

4.8.4 Differences between Alternatives

Impacts to wildland fire management would be similar under each of the alternatives, with the exception of impacts from livestock grazing. Livestock grazing would be eliminated under Alternatives C and E, resulting in higher fire frequency and lower risk of catastrophic wildfire.

4.8.5 Unavoidable Adverse Impacts

The presence of sensitive cultural and natural resources limit the ability to suppress wildland fire. The impacts of these resources on the fire program are unavoidable and sometimes adverse.

4.9 Impacts on Cultural Resources

Cultural resources (also referred to as heritage resources or heritage assets) are subject to a variety of impacts. Primary concern is typically focused on the potential adverse impacts; however, beneficial impacts could also occur. For the purposes of this document, adverse impacts could be characterized as actions that result in the degradation or destruction of significant cultural resources. Significant resources are those that are eligible for nomination to the NRHP or those that have been placed on the register. Significant heritage resources are sometimes referred to as historic properties. These are typically historic structures, historic sites, or prehistoric archaeological sites. However, a number of other types of heritage resources exist: historic districts, archaeological districts, traditional cultural properties, and cultural landscapes. Since heritage resources are finite and non-renewable, prevention of adverse impacts is always preferred. However, avoiding adverse impacts is sometimes impractical. The management actions described for Cultural Resources in Chapter 2 are intended to reduce or offset adverse impacts to cultural resources. The analysis of potential impacts to cultural resources, both adverse and beneficial, was based on review of existing literature and the expertise of BLM resource specialists.

4.9.1 Loss or Degradation of Cultural Resources

Loss or degradation of NRHP listed or eligible cultural resources could occur from natural or human-caused deterioration, or potential conflict with other resource uses. These include but are not limited to historic sites, archaeological sites, traditional cultural properties and cultural landscapes.

Loss of a cultural resource is defined as the physical destruction of the integrity of the resource. The integrity is dependent upon the criteria of NRHP significance. Degradation occurs when changes to cultural properties' significance or preservation value occurs.

Any ground-disturbing activity has the potential to cause the inadvertent loss and/or degradation of archaeological sites or other cultural resources. For example, vegetation management and treatment methods, including fire, mechanical, and chemical, typically have detrimental effects on heritage resources. However, these interactions are complex. Fire could clear chaparral and increase ground visibility thus providing the beneficial effect of enabling archaeologists to see sites that were previously hidden. The same fire could also damage or destroy a rock art panel.

Discretionary and construction actions, such as road building, ROWs, mineral activities, and certain recreational activities, such as cross-county vehicle use, would involve ground-disturbing actions that could cause the inadvertent loss and/or degradation of cultural resources, particularly if the resource was subsurface and previously undetected. However, these activities could also result in the discovery of an otherwise undetectable resource.

Livestock grazing could result in the degradation of cultural resources through trampling of surface artifacts and features. Range and wildlife improvement projects (e.g., livestock tanks and wildlife waters) could concentrate livestock and wildlife in areas, thereby increasing the potential for trampling.

Land disposal is a permanent loss in terms of BLM management and oversight. Cultural resources that would have been considered in the BLM planning/NEPA process may or may not be considered under State of California and county regulations. Land disposal could therefore have an adverse impact to cultural resources, if any exist on the disposed property. Land acquisitions provide additional management of cultural resources in the Planning Area. Land acquisition would therefore have a beneficial effect on any cultural resources that exist within the acquired property.

Loss or degradation of cultural resources would be minimal in WAs, WSAs, and ACECs, designated to protect sensitive resource values. Exclusion and avoidance areas would help direct projects and activities into areas that would have reduced impact on cultural resources. The management objectives of VRM Classes I and II strive to preserve or retain the existing characteristic landscape, so they could provide coincidental benefits to heritage resource sites.

4.9.2 Differences between Alternatives

There should be little difference between alternatives in terms of direct impacts to cultural resources because these impacts would be avoided or adequately mitigated pursuant to the NHPA, NEPA, and other federal mandates. However, there may be some differences, especially with regard to indirect loss or degradation. This is because alternatives vary in the sizes of protection-oriented management decisions (Table 4-7). These differences primarily exist in terms of levels of allowable livestock grazing, OHV activities, land disposal, mineral entry, and vehicle traffic. In general terms, reducing the

TABLE 4-7
IMPACTS TO CULTURAL RESOURCES BY ALTERNATIVE

	A	B	C	D	E
Special Designations (acres)[1]					
WAs/WSAs	62,296	62,296	62,296	62,296	62,296
ACECs	26,479	14,004	28,724	12,801	14,004
Discretionary Land Use Authorizations					
Livestock grazing (acres)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
Lands and Realty Authorization (including Renewable Energy)					
Land available for disposal (acres)	1,715	1,080	0	1,080	490
Existing withdrawals (WAs)	48,333	48,333	48,333	48,333	48,333
Existing withdrawals (PLOs)	26,696	26,696	26,696	26,696	26,696
Proposed withdrawals (acres)[2]	22,119	0	30,635	0	14,004
Exclusion Areas[3]	13,963	13,963	2,765	13,963	13,963
Avoidance Areas[3]	0	44,002	27,233	97	21,636
Transportation and Access					
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Implementation Level Decisions					
Routes of Travel Designations (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage Designated	191.20	191.20	191.20	191.20	191.20
Allowable route pulloff distance from edge of designated route and area of potential disturbance	300 feet (13,905 acres)	100 feet (4,635 acres)	25 feet (1,159 acres)	300 feet (13,905 acres)	25 feet (1,159 acres)

[1] These areas, because of the prescriptive protective management direction, would remain relatively unaltered or improved from their existing condition.
[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.
[3] Overlap between WSAs, ACECs, and critical habitat has been eliminated in calculating these acreages.

levels of these activities also reduces the likelihood of impacts to cultural resources. Alternative A (No Action) continues the present management approach and provides a baseline with which to compare other alternatives.

Alternative C provides the greatest blanket protection for cultural resources by proposing the highest acreage for ACECs and Exclusion Areas, the least areas available for grazing, the highest number of acres closed to OHV activities, the smallest allowable route pull-off distance, the least amount of land disposal, the largest amount of land withdrawn from mineral entry, and the least number of miles of routes of travel designated as motorized.

Alternative E is next in levels of protection-oriented management decisions. It has the same number of acres in WAs and WSAs, approximately 50 percent less acreage in ACECs, the same acreage unavailable for grazing, approximately 26,000 fewer acres closed to OHV activities, the same allowable route pull-off distance, 490 more acres identified for disposal, approximately 16,000 less acres proposed for withdrawal from mineral entry, and approximately 15 more miles of routes of travel designated as motorized.

The ranking of Alternatives A, B, and D is less straightforward in terms of protection-oriented management decisions and cultural resources impacts. All three have the same number of acres in WAs and WSAs. While the In-Ko-Pah ACEC in Alternative A is largest in acreage, this boundary includes overlap between the WAs and WSAs, which is eliminated in Alternative B and D. In addition, Alternative B expands the boundary of the In-Ko-Pah ACEC to the west to incorporate the Peninsular Bighorn Sheep Critical Habitat and expands Table Mountain to the north to connect to the Table Mountain WSA. This expansion therefore increases the protection of cultural resources. With regard to acres unavailable for livestock grazing, Alternative B has approximately 79,000 acres, while Alternatives A and D have approximately 40,000 acres each. All three alternatives have the same amount of area closed to OHV activities. Alternative B stipulates a 100-foot route pull-off distance, while Alternatives A and D stipulate 300 feet. Alternative A proposes to dispose of approximately 635 more acres than Alternatives B and D. Alternative A proposes to withdraw from mineral entry some 22,000 more acres than Alternatives B and D. Finally, Alternative B proposes to designate approximately 16 less miles of travel routes as motorized than Alternatives A and D.

4.9.3 Unavoidable Adverse Impacts

Unavoidable adverse impacts on cultural resources could occur as a result of natural events (e.g., wildfires, floods, etc.) and range improvements and related activities (e.g., construction of waters and fencing, normal concentration of livestock around waters, and livestock trail networks.) These would primarily affect unknown sites and/or areas with high potential for cultural resources.

4.9.4 Irreversible/Irretrievable Commitment of Resources

Land disposals could result in irreversible and irretrievable commitment of cultural resources depending on the use of that land once it leaves Federal ownership. As suggested previously, this is because land in private ownership or under the purview of local jurisdictions may not receive the same level of environmental review and/or protection that it obtains under federal jurisdiction.

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4.10 Impacts on Paleontological Resources

Paleontological resources within the Planning Area are susceptible to impacts from OHV/transportation uses, mining and mineral extraction activities, land use authorizations, land tenure decisions, vegetation treatments (e.g., prescribed fire), and recreation. These impacts could lead to the disturbance, destruction, or loss of paleontological resources. Protective land use designations, such as ACECs, VRM Classes I and II, closed OHV areas, WSAs, and wilderness designations would have coincidental beneficial impacts by protecting known and unknown paleontological resources. The analysis of potential impacts to paleontological resources was based on review of existing literature and the expertise of BLM resource specialists.

4.10.1 Loss or Degradation of Paleontological Resources

Loss or degradation of vertebrate fossils and scientifically significant invertebrate resources could occur from natural or human-caused deterioration, or potential conflict with other resource uses.

Ground- and subsurface-disturbing activities have the potential to cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. Discretionary and construction actions, such as road building, ROWs, fire suppression activities, mineral activities, and recreational facilities, would involve excavation or ground disturbance that could cause the inadvertent loss and/or degradation of vertebrate fossils and scientifically significant invertebrate resources. However, these activities could also result in the discovery of an otherwise undetected resource. Livestock grazing could result in the degradation of vertebrate fossils and scientifically significant invertebrate through trampling of exposed deposits, though the potential of this is low as most deposits are not exposed.

Land disposal is a permanent loss in terms of BLM management and oversight. Vertebrate fossils and scientifically significant invertebrate resources that would have been considered in the BLM planning process may not be considered under State of California and county regulations. Land disposal could have an adverse impact to vertebrate fossils and scientifically significant invertebrate resources, if any exist on the disposed property. Land acquisitions provide additional management consideration and protection of vertebrate fossils and scientifically significant invertebrate resources in the

Planning Area. Land acquisition would have a beneficial effect on any vertebrate fossils and scientifically significant invertebrate resources that exist within the acquired property.

Loss or degradation of vertebrate fossils and scientifically significant invertebrate resources would be minimal in WAs, WSAs, and ACECs which were designated to protect sensitive resource values. Exclusion and avoidance areas would help to direct projects into areas that would have reduced impact on vertebrate fossils and scientifically significant invertebrate resources. The management objectives of VRM Classes I and II strive to preserve or retain the existing characteristic landscape, so they could provide coincidental benefits to vertebrate fossils and scientifically significant invertebrate resource sites.

4.10.2 Differences between Alternatives

See Table 4-8 on next page.

4.10.3 Unavoidable Adverse Impacts

Unavoidable adverse impacts on vertebrate fossils and scientifically significant invertebrate resources could occur as a result of natural events (e.g., fires, floods, etc.).

4.10.4 Irreversible/Irretrievable Commitment of Resources

Land disposals could result in irreversible and irretrievable commitment of vertebrate fossils and scientifically significant invertebrate resources, depending on the use of that land once it leaves federal ownership.

4.10.5 Cumulative Impacts

No cumulative impacts to paleontological resources are anticipated due to the fact that the paleontological resources occur in remote areas and are not common in the Planning Area.

TABLE 4-8
POTENTIAL IMPACTS TO HIGH POTENTIAL AREAS OF PALEONTOLOGICAL RESOURCES BY ALTERNATIVE

	A	B	C	D	E
Special Designations (acres)[1]					
WAs/WSAs	62,296	62,296	62,296	62,296	62,296
ACECs	26,479	14,004	28,724	12,801	14,004
Discretionary Land Use Authorizations					
Livestock grazing (acres)					
Available	63,498	24,211	0	63,498	0
Unavailable	39,805	79,902	103,303	39,805	103,303
Total Acres	103,303	103,303	103,303	103,303	103,303
Lands and Realty Authorization (including Renewable Energy)					
Land available for disposal (acres)	1,715	1,080	0	1,080	490
Existing withdrawals (WAs)	48,333	48,333	48,333	48,333	48,333
Existing withdrawals (PLOs)	26,696	26,696	26,696	26,696	26,696
Proposed withdrawals (acres)[2]	22,119	0	30,635	0	14,004
Exclusion Areas[3]	13,963	13,963	2,765	13,963	13,963
Avoidance Areas[3]	0	44,002	27,233	97	21,636
Transportation and Access					
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Implementation Level Decisions					
Routes of Travel Designations (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	82.55	98.45	113.30	82.55	98.45
Total Mileage Designated	191.20	191.20	191.20	191.20	191.20
Allowable route pulloff distance from edge of designated route and area of potential disturbance	300 feet (13,905 acres)	100 feet (4,635 acres)	25 feet (1,159 acres)	300 feet (13,905 acres)	25 feet (1,159 acres)

[1] These areas, because of the prescriptive protective management direction, would remain relatively unaltered or improved from their existing condition.
[2] Proposed withdrawals are based on the mineral entry withdrawals identified in Table 2-14 and exclude overlap with WAs. These areas do overlap the PLO boundaries, as the PLOs do not withdraw lands from mineral entry.
[3] Overlap between WSAs, ACECs, and critical habitat has been eliminated in calculating these acreages.

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4.11 Impacts on Visual Resources

This section provides a discussion of the methodology and criteria used to assess impacts to visual resources that could occur as a result of implementing the ESDC DRMP alternatives. The assessment of impacts would utilize the Visual Contrast Rating (VCR) component of the BLM's Visual Resource Management (VRM) System.

BLM's responsibility to manage the scenic resources of public lands is established by both FLPMA and NEPA. The overall goal of the BLM's VRM system is to minimize visual impacts and ensure that mitigation measures are applied to potentially adverse visual impacts. The VCR System is a formal process utilized by BLM to identify and analyze the potential visual impacts of projects and management-related activities. The basic analysis in this rating system focuses on the degree to which a project impacts the visual quality of an area. This depends on the visual contrast created between a given surface-disturbing activity and the existing landscape. Visual contrast is measured by comparing the project/activity's features with the major features in the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and describe the resulting visual contrast.

The analysis of potential impacts to visual resources was based on review of existing literature and the expertise of BLM resource specialists at the Field Office. Literature sources include but are not limited to the following:

- BLM Manual Section 8400 - Visual Resource Management. It is BLM's policy that it has a basic stewardship responsibility to identify and protect visual values on all BLM lands. The manual provides specific direction in inventorying, evaluating, and determining impacts to visual resources.
- Information Bulletin No. 98-135
- Instruction Memorandum No. 98-164.
- Instruction Memorandum No.2000-096 (Use of Visual Resource Management Class I Designation in WSAs; DOI March 21, 2000.)

Visual resource impacts are measured in terms of the level of contrast in form, line, texture, and color in the landscape that result from a land disturbing activity. The level of acceptable contrast or change to the characteristic landscape ranges from minimal to high, depending on the location. The DRMP alternatives would establish landscape management classes ranging from Class I to IV, and all proposed projects/activities would adhere to the VRM class objectives as described in Chapter 2, Section 2.3.11.2.

Potential direct and indirect impacts to visual resources are categorized below in terms of loss, degradation/alteration, and enhancement/beneficial. Impacts from management actions and decisions would in effect be 'self-mitigating,' in that their final approval would be based on meeting the visual quality objectives of the VRM class in which they take place. Design guidelines to avoid, minimize, or reduce visual impacts are included in Chapter 2, Section 2.4, Typical Management Actions and Best Management Practices.

4.11.1 Temporary and Permanent Loss of Visual Resources

Vegetative treatments include thinning, mechanical removal, herbicide application or conversion; management of non-native and invasive species, vegetation removal along the International Border, revegetation and other landscape restoration efforts, riparian area management, fire management, and fuels reduction. Vegetation treatment activities could result in short-term adverse impacts to visual resources through temporary loss of vegetative cover. However, once desired vegetation objectives are achieved, impacts to VRM would be minimized or eliminated.

Activities include wildlife waters, fences, forage enhancement for wildlife, and associated elements. These actions could result in an adverse alteration to the visual landscape, unless designed to blend in with the surrounding landscape.

Within designated OHV open areas, motorized travel is not limited to designated routes, and visitors may travel cross-country wherever they choose. Increased plant trampling would be expected, resulting in the loss of vegetative cover and associated degradation of visual quality within the entire acreage of the proposed OHV open areas.

Decisions that could have an adverse impact to visual resources through the loss of vegetative cover and development of facilities include: agricultural leases; ROW use and development; utility corridor alignments, sites and associated structures; communication facility sites and associated structures; siting, construction, and appearance of other facilities, signs, buildings, and structures; mineral extraction activities, including sand and gravel permit activities and community pits.

Disposal of BLM-administered lands in the Planning Area would potentially have an adverse impact on visual resources. Disposal of VRM Class II lands could result in the conversion of areas of relatively high visual quality to land uses and associated impacts that would reduce the visual quality of those lands. This would be particularly true, if the disposal lands were converted to land uses requiring mass grading.

4.11.2 Degradation/Alteration

The Pacific Crest NST could result in trail and trailhead construction activities which could have an adverse impact on visual resources; however, these activities and improvements are expected to be small-scale and designed to blend in with the surrounding landscape, and therefore would not have a long-term visual impact.

Concentrated visitor use of designated camping and day-use areas, along with the installation of recreation facilities and signs, could result in adverse impacts to visual resources of these areas. Impacts could include the loss of vegetative cover, increase litter, and increased vehicle and human presence. As the population in the San Diego County continues to increase, recreational activities on BLM-administered lands are also likely to increase, which could result in additional impacts to visual resources, such as loss of vegetative cover in areas of OHV open areas.

Since renewable energy generating facilities would be only authorized in VRM Classes III and IV there would be minimal effect on visual resources due to the relatively small amount of area classified as Classes III and IV, except in Alternative D.

4.11.3 Enhancement/Beneficial

Management guidance and directions for Special Designations in BLM land use planning including those for designated WAs, WSAs, ACECs, and NSTs (Pacific Crest NST), as shown in Table 2-11, could also provide coincidental benefits to visual resources. The management activities allowed in ACECs would be protective in nature and, as such, would be beneficial to visual resources. Existing WAs, WSAs, and the Pacific Crest NST would continue to be managed under VRM Class I objectives.

Vegetative treatments would generally be implemented to restore or enhance the natural conditions of the public lands, and would have beneficial impacts to visual resources independent of VRM designations. Restoration and/or enhancement of natural conditions would contribute to scenic quality by reducing visual contrast from pre-restoration conditions.

The view sheds of important cultural resources would be maintained when the settings significantly contribute to the resources' scientific, public, traditional, or conservation values. This management approach to cultural resources within the Planning Area would also have concurrent beneficial impacts to visual resources. Avoiding surface impacts and maintaining viewsheds would contribute to visual quality and enhance visitor experience by retaining natural conditions and not increasing visual contrast levels.

Within designated closed OHV areas, no motorized travel is allowable. Visual resources would be maintained or enhanced within the proposed OHV closed areas.

4.11.4 Differences between Alternatives

The range in differences in potential impacts to visual resources is reflected by Table 4-9, which shows the number of acres that each alternative would designate to the four VRM Classes, segregated by specific land areas.

These tables reiterate that designated WAs and WSAs would be assigned to Class I under all alternatives.

TABLE 4-9
ACRES OF VRM CLASSES I–IV BY AREA AND ALTERNATIVE

Name or Description of Land Area	A (acres)	B (acres)	C (acres)	D (acres)	E (acres)
Class I					
WAs	Designated WAs would be Class I under all alternatives. 48,333 acres (Total acres includes the portion of the In-Ko-Pah ACEC that overlaps the Carrizo Gorge WA.)				
WSAs	WSAs would be Class I under all alternatives.13,963 acres				
VRM Class I Total:	62,296 acres, all alternatives				
Class II					
ACECs*	12,801	14,004	14,004	12,801	14,004
Buck Canyon (non-WSA lands)	520	520	520	0	520
Volcan Mts.	1,715	1,715	1,715	0	1,715
Chariot Canyon	5,342	5,342	5,342	0	5,342
Oriflamme Mts. & Canyon	5,641	5,641	5,641	0	5,641
McCain Valley West	8,362	8,362	8,362	0	0
McCain Valley East (non-ACEC & non-WSA lands)	4,618	4,618	4,618	0	4,618
Cottonwood and Lark Canyon Campgrounds	49	0	49	0	0
Table Mountain (non-ACEC & non-WSA lands)	919	919	919	919	919
Airport Mesa	675	0	675	0	0
Round Mountain	116	116	116	0	116
VRM Class II Total:	40,758	41,237	41,961	13,720	32,875
Class III					
Cottonwood and Lark Canyon Campgrounds	0	49	0	0	49
Airport Mesa	0	675	0	0	675
VRM Class III Total:	0	724	0	0	724

TABLE 4-9
ACRES OF VRM CLASSES I-IV BY AREA AND ALTERNATIVE
(CONT.)

Name or Description of Land Area	A (acres)	B (acres)	C (acres)	D (acres)	E (acres)
Class IV					
Buck Canyon (non-WSA lands)	0	0	0	520	0
Volcan Mts.	0	0	0	1,715	0
Chariot Canyon	0	0	0	5,342	0
Oriflamme Mts. & Canyon	0	0	0	5,641	0
McCain Valley West	0	0	0	8,362	8,362
McCain Valley East (non-ACEC & non-WSA lands)	0	0	0	4,618	0
Round Mountain	0	0	0	116	0
Cottonwood and Lark Canyon Campgrounds	0	0	0	49	0
Airport Mesa	0	0	0	675	0
VRM Class IV Total:	0	0	0	27,038	8,362

*Acres of ACECs vary by Alternative. These numbers reflect the same number of acres of ACECs in each alternative, including all proposed ACEC expansion lands. They include the acres of In-Ko-Pah ACEC that are outside of the Carrizo Gorge WA as well as the acres of Table Mountain ACEC that are outside of the Table Mountain WSA.

Alternatives A and C are identical in their designation of lands to Class II, and would not designate any acres to Class III or IV. Alternative B designates similar lands to Class II with the exception that the Cottonwood and Lark Canyon Campgrounds and Airport Mesa are designated as Class III lands. Alternative B does not designate any lands to Class IV. As the ACECs in Alternatives B and C are larger in acreage that Alternative A, Alternatives B and C provides the highest protection for scenic quality values, followed closely by Alternative A.

Alternative E would have approximately 10,000 fewer acres of Class II lands than Alternatives A, B, and C (this difference varies by alternative), because it designates the Lark Canyon and Cottonwood Campgrounds and the Airport Mesa area as Class III rather than Class II, due to considerations for allowable visual contrast of cultural

modifications. In addition, Alternative E identifies McCain Valley West as Class IV to accommodate renewable energy development.

Alternative D identifies many specific land areas as Class III lands and two as Class IV lands. Therefore this alternative would provide the greatest allowance for visual contrast in any future proposals for cultural modifications.

4.11.5 Unavoidable Adverse Impacts

Unavoidable adverse impacts would potentially occur as a result of uncontrollable natural events (e.g., floods, storm events, wildfires) that create visual contrast levels exceeding the visual quality objectives of a given land area. Such events and the resulting impacts are beyond the scope of this analysis, because they are not related to BLM DRMP decisions. Wildfire occurrences, suppression activities, and burned areas could result in an impact to the Visual Resource Class of the Planning Area. Similar unavoidable impacts would potentially occur as a result of non-discretionary activities on BLM-administered lands. (e.g., when law enforcement or emergency search and rescue activities occur in a visually sensitive area, unavoidable adverse impacts to visual resources could occur).

4.11.6 Irreversible/Irretrievable Commitment of Resources

Any BLM disposed lands could reduce the visual resource class designation, depending on the use of the land once it leaves federal ownership, and could result in an irreversible/irretrievable commitment of resources. The number of acres identified for disposal under each alternative is identified in Table 4-10.

TABLE 4-10
ACRES OF POTENTIAL DISPOSAL LANDS BY VRM CLASSES I-V AND ALTERNATIVE

VRM Class	A (acres)	B (acres)	C (acres)	D (acres)	E (acres)
I	0	0	0	0	0
II	989	799	0	0	198
III	0	0	0	799	0
IV	0	0	0	0	0
Unclassified	726	281	0	281	292
Total Lands for Disposal	1,715	1,080	0	1,080	490

4.11.7 Cumulative Impacts

Impacts on private or other lands that have more lenient visual quality objectives than adjacent BLM-administered lands would potentially result in cumulative impacts to visual resources and visitor experience on BLM-administered lands in the Planning Area.

4.12 Impacts on Special Designations

4.12.1 Impacts on Designated Wilderness Areas

Impacts on wilderness are those actions that reduce the wilderness characteristics of naturalness and opportunities for solitude or primitive forms of recreation. These values can be impacted by the use of motor vehicles and installation of structures causing surface disturbance and evidence of the man-caused modifications of the area.

4.12.1.1 Degradation of Wilderness Values

The primary potential impacts to the two designated wilderness areas within the Planning Area may occur due to the use of motor vehicles and heavy motorized equipment for fire suppression and construction and maintenance of structures as well as the structures themselves. Structures and associated impacts are generally attributable to domestic livestock and wildlife habitat projects. Wilderness values can be impacted by vegetation treatments (e.g., prescribed fire, chemical, and mechanical) for non-native invasive plant species removal, and fuel load management. Wilderness values can be impacted by vegetation treatments (e.g., prescribed fire, chemical, and mechanical) for non-native invasive plant species removal and fuel load management. Wildfire suppression activities and management responses could also impact wilderness values. Construction and maintenance of wildlife and range improvement facilities (e.g., wildlife waters) could degrade values for which these WAs were designated. Potential short-term impacts from these construction and maintenance activities would result from dust emissions and noise. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to vehicle use and access to private lands in the area.

4.12.1.2 Differences between Alternatives

The only resource use for which there are quantifiable differences among the alternatives is livestock grazing. It should be noted that livestock grazing, where established at the time of designation of the two wilderness areas, shall be allowed to continue irrespective of impacts on the wilderness values cited above. However, there are differences in grazing intensity between the alternatives due to issues with other public land resources. The grazing of livestock has an impact on naturalness, in that the grazing impact of livestock is sometimes evident, there are structures associated with the management of the livestock, and ranchers are often present to, for example, tend

the livestock or maintain range structures. Approximately 21,204 acres of the Sawtooth Mountains Wilderness and approximately 5,293 acres of Carrizo Gorge Wilderness are being grazed under Alternative A. The presence of livestock and associated presence of structures and ranchers would have an impact on the wilderness values of naturalness and solitude. Alternatives B and D would eliminate grazing from critical habitat. This would reduce the extent of grazing and enhance the wilderness values, primarily naturalness, of the Sawtooth Wilderness. However, any new structures, such as fences, necessary to implement these alternatives would reduce the wilderness values. Alternatives C and E would eliminate grazing use from the wilderness areas and so have the least impact on wilderness values.

4.12.1.3 Unavoidable Adverse Impacts

Unavoidable adverse impacts on wilderness values of naturalness and solitude include aircraft traffic, vehicle traffic, and noise related to law enforcement and search and rescue activities as well as litter and trampling of sensitive resources.

4.12.2 Impacts on Wilderness Study Areas

The primary potential impacts to the five WSAs within the Planning Area could occur from construction and maintenance of range and wildlife habitat improvement projects. The provisions of the *Interim Management Policy for Lands under Wilderness Review* (H-8550-1) would continue to be upheld including restrictions on motorized access, infrastructure developments, and new commercial activities. All activities/authorizations allowed within the WSAs must meet the non-impairment criteria standard (not to impair the suitability of such areas for preservation as wilderness). All lands must be managed to prevent unnecessary or undue degradation.

WSAs are open to operation under the General Mining Law. There are no claims in any of the WSAs. Mineral potential is generally low, so no new claim locations are expected in WSAs. The WSAs are not available for oil and gas leasing. There are no sand or gravel operations in the WSAs. While not prohibited, any new authorizations for sand and gravel are subject to the non-impairment standard and are thus not anticipated. Therefore, no impacts are expected from mining, mineral leasing, or mineral sales activities.

4.12.2.1 Degradation of Wilderness Study Area Values

WSA values could be impacted by vegetation treatments (e.g. prescribed fire, chemical, and mechanical) for non-native invasive plant species removal and fuel load management. WSAs are open to operation under the General Mining Law; however, there are no mining claims in any of the WSAs. Mineral potential is generally low, so no new claim locations are expected in WSAs. The WSAs are not available for oil and gas leasing. There are no sand or gravel operations in the WSA. While not prohibited, any new authorizations for sand or gravel are subject to the non-impairment standard and are thus not anticipated. Therefore, no impacts are expected from mining, mineral leasing, or mineral sales activities. Wildfire suppression activities and management responses could also impact WSA values. Construction and maintenance of wildlife and range improvement facilities (e.g., wildlife waters) could degrade values for which these WSAs were designated. Potential short-term impacts from these construction and maintenance activities would result from dust emissions and noise. Existing mineral claims could have potential short and long-term effects on naturalness, solitude, and primitive unconfined recreation from noise disturbance and dust emission. Potential short-term effects on solitude would result from hunting activities or discharge of firearms. Potential short-term impacts on naturalness and solitude could result from dust emissions and noise related to OHV use in and adjacent to WSAs and access to private in-holdings.

4.12.2.2 Unavoidable Adverse Impacts

Unavoidable adverse impacts on WSA values of naturalness and solitude include aircraft traffic, vehicle traffic, and noise related to law enforcement and search and rescue activities and litter and trampling of sensitive resources.

4.12.3 Impacts on National Scenic Trails

There is one NST, the Pacific Crest NST, within the Planning Area. The primary impacts to this trail would be caused by any actions that would compromise the ability 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.

4.12.3.1 Degradation of National Scenic Trail Values

Potential impacts to the Pacific Crest NST could result from vegetation treatments and land uses (e.g., grazing). Any vegetation treatments that are undertaken to restore the condition of trails could have impacts to the overall scenic value of trails. Impacts could occur where existing OHV routes and trails cross the Pacific Crest NST, causing potential visitor conflicts and accidents.

4.12.3.2 Differences between Alternatives

Impacts to the Pacific Crest NST vary by alternative. Table 4-11 demonstrates the number of miles that occur within any special designation areas and within the various OHV area designations. The table also shows how many routes intersect the Pacific Crest NST and identifies their classifications.

TABLE 4-11
IMPACTS TO PACIFIC CREST NATIONAL SCENIC TRAIL BY ALTERNATIVE

	A	B	C	D	E
Special Designations (miles of Pacific Crest NST that occur with those designated areas by alternative)					
WSAs	9.5	9.5	9.5	9.5	9.5
ACECs	4.4	4.4	4.4	4.4	4.4
Lands and Realty (miles of Pacific Crest NST that occur with those designated areas by alternative)					
Exclusion Areas	0	0	0	0	0
Avoidance Areas	0	0	0	0	0
OHV Area Designations (miles of Pacific Crest NST that occur with those designated areas by alternative)					
Closed	9.5	9.5	9.5	9.5	9.5
Limited	4.4	4.4	4.4	4.4	4.4
Open	0	0	0	0	0
Implementation Level Decisions Routes of Travel Designations (number of intersections w/Pacific Crest NST)					
Non-motorized	0	1	1	0	1
Motorized	5	4	4	5	4

4.12.3.3 Unavoidable Adverse Impacts

- Non-discretionary surface disturbing activities on or immediately adjacent to the Pacific Crest NST would have an impact on the values for which this trail was designated.
- Wildfire could result in erosion and an impairment of visual resources.

- Illegal use of the trail, such as bicycles or motorized vehicles and littering.

4.12.4 Impacts on Areas of Critical Environmental Concern

The primary potential impacts to the two ACECs within the Planning Area could occur from any activity that could disturb the relevant and important values for which the ACEC was designated.

Management actions with potential to cause impacts include vegetation treatments, livestock grazing, range and wildlife habitat improvement and maintenance projects, OHV and route use, discretionary construction activities, land tenure, mining, and recreational activities.

Beneficial impacts would occur from the protection of cultural resources and the protection and restoration of wildlife habitats.

4.12.4.1 Degradation of ACEC Values

Potential direct and indirect impacts to ACECs would result from the following management actions and LUP decisions: vegetation treatments, range and wildlife habitat improvement projects, land tenure adjustments, construction-related activities, mineral development and leasing, recreation, OHV area designations, routes of travel, and military training.

Impacts on sensitive resource values (cultural and ecological) within ACECs could result from vegetation treatments (e.g., prescribed fire, chemical, and mechanical) for non-native invasive plant species removal and fuel load management and wildfire suppression activities and management responses.

The construction and maintenance of rangeland and wildlife improvement facilities, including wildlife waters, could impact ACEC relevant and important values. Maintenance and/or installation of additional structures could result in impacts from

construction related activities and subsequent differences in wildlife distribution and/or abundance.

ROW construction and use (including utility corridors and communication sites) and any other land uses could have impacts on ACEC relevant and important values. Impacts would be minimized through BLM-required mitigation measures and BMPs.

Acquisition of inholdings would protect ACEC relevant and important values by adding acquired lands under protective management.

Outside of avoidance or exclusion areas, potential impacts could occur to ACEC relevant and important values during authorized construction activities (e.g. new recreational facilities, mining-related activities, road building, construction on utility, and communication ROWs). Impacts would include the loss of vegetation and disturbance to wildlife habitat, disturbance to natural systems or processes, and potential impacts to cultural resources.

"No surface occupancy" for leasables and renewable energy authorizations would protect sensitive cultural and ecological resources. Potential impacts could result from salable mineral activities within ACECs.

Potential impacts from recreation activities (e.g., OHV use) include disturbance of sensitive cultural or ecological resources. Potential impacts could occur from OHV use along routes of travel within ACECs. Impacts include disturbance, erosion, loss of vegetation, potential wildlife mortality from vehicle encounters, and increased visitation to sensitive resource areas (including cultural and wildlife).

Military rotary aircraft overflights could impact wildlife resources. Special ground training maneuvers could impact cultural and ecological resources causing degradation in the values of ACEC areas.

4.12.4.2 Differences between Alternatives

TABLE 4-12
IMPACTS TO ACECs BY ALTERNATIVE

	A	B	C	D	E
Potential ACEC Designations (acres)					
In-Ko-Pah ACEC (acres)	22,186	9,318	23,020	8,508	9,318
Table Mountain ACEC (acres)	4,293	4,686	5,704	4,293	4,686
Total ACEC (acres)	26,479	14,004	28,724	12,801	14,004
Livestock Grazing (acres within the ACECs)					
Available	14,301	1,326	0	10,256	0
Unavailable	9,769	10,350	26,194	278	11,676
Lands and Realty Authorizations (including Renewable Energy)					
ACEC Proposed for Withdrawal (acres)	22,119		14,004		14,004
Land Available for Disposal	0	0	0	0	0
OHV Area Designations					
Open	0	0	0	0	0
Closed	13,552	0	25,110	0	0
Limited	10,541	11,676	1,143	10,534	11,676
Implementation Level Decisions- Routes of Travel Designations (miles within the ACECS)					
Motorized	13.61	17.59	9.81	13.61	17.59
Non-motorized	27.29	28.95	38.46	25.63	28.95

4.12.4.3 Unavoidable Adverse Impacts

Unavoidable adverse impacts on cultural and ecological resources could occur as a result of natural events (e.g., wildfires, floods, etc.) and range improvements and related activities (e.g., construction of waters and fencing, normal concentration of livestock around waters, and livestock trail networks). Law enforcement or emergency search and rescue activities occurring in areas supporting priority species could result in unavoidable adverse impacts to priority wildlife resources. Human entry and use of the area could impact sensitive resources through litter deposition and trampling.

Illegal kill, harm, harassment, removal or capture of animals (game and non-game), including eggs, could result in loss to individual animals.

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4.13 Impacts on Public Health and Safety

Impacts to public health and safety would be considered significant if implementation of an alternative would cause or potentially result in greater safety risks. Positive impacts could also result from implementation of an alternative that would minimize or significantly reduce certain health and safety issues.

- Abandoned mines—gating or backfilling abandoned mine shafts, adits, and pits would reduce human safety hazards.
- Hazardous materials—there are no known existing hazardous materials sites on BLM-administered lands within the Planning Area. Any future encounters will be handled pursuant to BLM regulations.
- International border issues
- Unexploded ordnance—there are no known occurrences. Any encounters will be handled pursuant to BLM regulations.

4.13.1 Differences between Alternatives

Impacts to Public Health and Safety are not expected to vary by alternative.

4.13.2 Unavoidable Adverse Impacts

Inadvertent exposure to or encounters with any of these public health and safety hazards could result in serious injury or death which would be an unavoidable adverse impact.

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4.14 Impacts on Livestock Grazing

The impacts for livestock grazing are: loss of grazing acreage or restrictions on grazing, loss of forage, and loss of water—natural and livestock waters.

Under Alternatives C and E, all BLM-administered lands would be unavailable for livestock grazing. Lands available for livestock grazing would be reduced under Alternative B. Under Alternative B, allotments would be adjusted to exclude grazing from the OHV use area in Lark Canyon and Table Mountain ACEC. Table 4-13 quantifies the acres available for grazing under each alternative.

Broad-scale vegetation management activities, such as prescribed fire, could temporarily reduce the forage base within grazing areas with the rate of recovery depending on the vegetation community burned, the hydrology, soil type, and intensity of the fire. Post fire, forage quality and palatability could increase due to the stimulation of vegetation.

Range improvement projects (e.g., livestock and wildlife waters) would increase the amount of available water. Alternatives A, B, and D allow for the authorization and maintenance of range improvement projects. Invasive species removal (e.g., tamarisk) could also increase the availability of surface water.

4.14.1 Grazing Criteria by Alternative

The criteria used to analyze grazing on BLM-administered public lands within the Planning Area are detailed in Section 2.3.14 and Appendix E. Table 4-14 identifies how the application of the livestock grazing criteria affects the availability of lands for livestock grazing by alternative.

4.14.2 Cumulative Impacts

The ECFO does not administer any additional acres or AUMs of grazing lands outside of the Planning Area. However, the Cleveland National Forest administers 108,143 acres and 20,483 AUMs including the private in-holdings within the forest boundary. The loss

TABLE 4-13
IMPACTS FOR LIVESTOCK GRAZING OF PERENNIAL/EPHEMERAL ALLOTMENTS

Allotment		Total Acres	Alternative A (No Action)		Alternative B		Alternative C		Alternative D		Alternative E (Preferred)	
Number	Name		Acres	AUMs	Acres	AUMs	Acres	AUMs	Acres	AUMs	Acres	AUMs
07002	McCain Valley – In-Ko-Pah	10,704	10,704	1,023	3,705	354	0	0	10,704	1,023	0	0
07002	McCain Valley – Tierra Blanca	9,793	9,793	89	8,467	77	0	0	9,793	89	0	0
07002	McCain Valley – Mt. Tule	5,305	5,305	0	1,290	0	0	0	5,305	0	0	0
07002	McCain Valley – Table Mountain	5,679	5,679	0	3,628	0	0	0	5,679	0	0	0
07018	Banner Queen	4,132	4,132	0	4,132	0	0	0	4,132	0	0	0
07020	Canebrake	6,820	6,820	0	464	0	0	0	6,820	0	0	0
07037	Oriflamme	5,281	5,281	0	4,759	0	0	0	5,281	0	0	0
07045	Vallecito	15,985	15,985	0	2,908	0	0	0	15,985	0	0	0
07015	San Felipe	1,845	1,845	0	1,845	0	0	0	1,845	0	0	0
TOTAL	-----	101,157*	101,157*	1,112	31,198	431	0	0	101,157*	1,112	0	0

*Figures may be slightly different elsewhere in the RMP due to differences in acreage calculations in GIS applications.

TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Cordyline australis	giant dracaena, New Zealand-cabbage tree	Limited	C	C	C	2.0	Coniferous forest. Two reports of horticultural escape into wildlands. Appears best suited to moist, cool climates.	NW, CW
	Cortaderia jubata	jubatagrass	High	A	A	A	3.1	Many coastal and interior habitats	NW, CW, SW
	Cortaderia selloana	pampasgrass	High	A	A	B	3.2	Coastal dunes, coastal scrub, Monterey pine, riparian, grasslands, wetlands, serpentine soils. Still spreading both coastal and inland.	CW, SW
	Cotoneaster franchetii	orange cotoneaster	Moderate	B	A	B	2.6	Coniferous forest. Limited distribution. Abiotic impacts largely unknown.	NW, CW
	Cotoneaster lacteus	Parney's cotoneaster	Moderate	B	B	B	2.1	Many coastal habitats, mainly a problem from SF Bay Area north along coast. Limited distribution. Abiotic impacts largely unknown.	NW, CW
	Cotoneaster pannosus	silverleaf cotoneaster	Moderate	B	A	B	2.5	Many coastal habitats, mainly a problem from SF Bay Area north along coast. Limited distribution. Abiotic impacts largely unknown.	NW, CW
	Cotula coronopifolia	brassbuttons	Limited	C	C	B	2.2	Salt and freshwater marshes. Impacts largely unknown, but appear to be minor.	NW, CW, SW
	Crataegus monogyna	English hawthorn	Limited	C	B	C	3.4	Riparian habitats, woodland. Limited distribution. Impacts appear to be minor.	NW, CW, SW
	Crocosmia x *crocosmiiflora*	montbretia	Limited	C	B	B	2.6	Coastal scrub and prairie, north coast forests. Abiotic impacts unknown. Higher invasiveness in some areas.	NW, CW
	Crupina vulgaris	common crupina, bearded creeper	Limited	B	C	B	3.2	Forest, woodland, grassland. Limited distribution. More invasive in other western states.	NW, MP
	Cynara cardunculus	artichoke thistle	Moderate	B	B	B	4.0	Coastal grasslands. Impacts more severe in southern CA where monotypic stands are more common.	CW, SW
	Cynodon dactylon	bermudagrass	Moderate	B	B	B	3.3	Riparian scrub in southern CA. Common landscape weed, but can be very invasive in desert washes.	SW, DSon
	Cynoglossum officinale	houndstongue	Moderate	B	B	B	2.5	Woodland, forest, interior dunes. Abiotic impacts unknown. Limited distribution. Can have impacts in other western states.	CaR, SN

Scientific names based on *The Jepson Manual*. For each species, the first common name is based on the Weed Science Society of America's "Composite List of Weeds" (www.wssa.net), followed by other names used in California. Scores: A = Severe, B = Moderate, C = Limited, D = None, U = Unknown. Documentation level averaged. Regions invaded based on Jepson geographic regions. Plant assessment forms, literature citations, and full rating criteria available at www.cal-ipc.org.

TABLE 4-14
ANALYSIS OF ACRES REMOVED FROM LIVESTOCK GRAZING*

Acreage Left after Applying Criteria	San Felipe	Banner Queen	Oriflamme	Vallecito	Canebrake	McCain Valley – Tierra Blanca	McCain Valley – In-Ko-Pah
Apply Criterion #1	1,854	4,131	4,759	2,908	464	8,467	3,705
Apply Criterion #2	1,854	4,131	4,759	2,908	464	8,467	3,705
Apply Criterion #3	0	22.1	10.67	15.67	7.88	5.47	0
Apply Criterion #4	0	n/a	n/a	n/a	n/a	n/a	n/a
Apply Criterion #5	0	n/a	n/a	n/a	n/a	n/a	n/a
Apply Criterion #6	1 water source	0 water source	0 water source	2 water source	0 water source	12 water source	1 water source
Apply Criterion #7	1 water source	0 water source	0 water source	2 water source	0 water source	12 water source	1 water source
Apply Criterion #7 (acres unusable due to steep slope)	741	3,973	6,273	6,796	3,615	5,890	7,445
Apply Criterion #8	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Bottom Line Acreage Left after all criteria applied (Riparian area acreages)	0	22.1	10.67	15.67	7.88	5.47	0

of 64,498 acres of open lands would represent a loss of 37 percent of the available grazing on BLM (ECFO) and national forest service lands in the region. This could result in a cumulative effect to grazing in the region.

4.15 Impacts on Lands and Realty Program (including Renewable Energy)

Table 4-15 provides a breakdown of the proposed actions for lands and realty by alternative.

TABLE 4-15
LANDS AND REALTY ALLOWABLE USES BY ALTERNATIVE

	A	B	C	D	E
ROWs					
Roads/Ditches & Canals	1.61 miles (5.81 acres)	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Oil and Gas; other energy pipelines	0	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Electrical/ Telephone Lines	26.02 miles (336.80 acres)	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Non-energy pipelines/ other linear pipelines	0.37 miles (4.40 acres)	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Renewable Energy ROWs					
Wind Energy	17,000 acres, 4 met towers	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Buildable Potential by Alternative (acres)	14,296	7,756	6,893	14,296	7,059
Land Tenure					
Available for Disposal (acres)	1,715	1,080	0	1,080	490
Communication Sites					
Government Agency	2	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Commercial Client	1	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			
Site Permits					
Apiary	3 permits (8 sites, 840 hives)	Considered and authorized on a case-by-case basis to meet public demand consistent with the exclusion and avoidance areas identified by alternative in Table 2-21.			

4.15.1 Land Tenure (Disposals, Acquisitions, and R&PPs)

Disposals are lands identified as excess to the public's and Government's needs or more suited to private ownership and are sometimes offered for sale. Disposals would result in fewer acres available within the BLM transportation and access network.

Acquisition of lands through exchange, purchase, and donation is an important component of the BLM's land management strategy. BLM acquires land and interests in land, when it is in the public interest and consistent with publicly approved land use plans. The BLM's land acquisition program is designed to improve management of natural resources through consolidation of federal landownership patterns; increase recreational opportunities and preserve open space; secure key property necessary to protect endangered species and promote biological diversity; preserve archaeological and historical resources; and implement specific acquisitions authorized by acts of Congress. Acquiring access to landlocked parcels would result in increased use of these lands by the public.

Easements allow the government to obtain certain rights on private property that usually involve access or development. The lands remain in private ownership with limited rights owned by the government. Acquiring easements allows the landowner to maintain existing land uses, but provides access to "landlocked" public lands while allowing the BLM to construct road improvements for better management and increased public access.

4.15.2 Utility Corridors and Communications

A utility corridor is defined as a parcel of land (linear in character) that has been identified through the land use planning process as being a preferred location for existing and future utility rights-of-way and that is suitable to accommodate one or more rights-of-way which are similar, identical, or compatible.

All alternatives specify one utility corridor consistent with the Western Regional Corridor Study (Western Utility Group 1993). Under Alternative A (No Action) there is one existing utility corridor south of Table Mountain near Interstate 8 that is 1.5 miles long and approximately 2 miles wide, encompassing 1,920 acres within the Planning Area.

Under Alternatives B, C, D, and E, the utility corridor would be 1.5 miles long with a width of 1 mile (960 acres), the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new utility ROWs, consisting of the following types, would 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.

Alternative A has two communication sites. Alternatives B through E would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities.

4.15.3 Renewable Energy

The DRMP allows for the development of renewable energy, although land use allocations for renewable energy vary by alternative. Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis to meet public demand. Under Alternatives B, C, and E solar or wind generating facilities would not be located in VRM Classes I and II. WAs and WSAs are exclusion areas under all alternatives. ACECs are exclusion areas under Alternatives B, C, and E.

Based on the wind energy potential model developed by PPM Energy (2006) and excluding the WAs and WSAs, there is a total of 12,764 acres of BLM-administered lands in the Planning Area that have the potential to support future wind energy projects. This would apply to Alternatives A, B, D, and E. Further excluding riparian areas and critical habitat for Peninsular bighorn sheep and quino checkerspot butterfly from the potential buildable land for wind energy, there is a total of 7,753 acres available under Alternative C.

The development of renewable sources of energy would reduce the use of irreversible/irretrievable energy resources.

4.15.4 Cumulative Impacts

There has been at least one recent project that consisted of the installation of wind energy towers on tribal lands within the Planning Area, and there is a potential that additional projects on private and tribal lands in the Planning Area could be approved during the life of this RMP. Any new wind energy projects approved on BLM-administered lands within the Planning Area could result in a cumulative increase in renewable energy generated in the Planning Area.

4.16 Impacts on Minerals Program

Mineral resources are adversely impacted, when planning decisions limit access to or place limitations on the development of valuable mineral deposits. Impacts are assessed based on the loss of economic value for the local, regional, and national economies. The loss of economic value can be measured in terms of: 1) sales; 2) income (e.g. wages and salaries); 3) employment; and 4) taxes and tax base. These economic impacts can be further quantified in terms of direct, indirect, and induced impacts to determine the total economic impact on the economy. Please refer to Section 3.19.1.1.2 for a detailed description of the economic impact terms used in this report.

WAs are withdrawn from the operation of the mining and mineral leasing laws. There are no valid rights attendant to mineral resources on public lands in WAs. Impacts to mineral resources are expected from land use decisions identified in Table 2-14 where access to or availability of mineral resources is restricted. These actions include Alternatives B, C, and E, which do not allow authorization of mineral material contracts or permits, or geothermal leasing. In addition, Alternatives A, B, C, and E also restrict issuance of mineral materials contracts in special designations. Mineral material disposals from public land would not be authorized in critical habitat in ACECs (Alternative B) or critical habitat outside ACECs (Alternatives C and E).

WSAs (Alternative C), ACECs (Alternatives C and E), and critical habitat (Alternative C) withdrawn from mineral entry would affect access to and development of metallic and non-metallic/industrial minerals for new mineral locations. Where mining claims with verified valid existing rights are located in areas withdrawn from mineral entry, and these rights would be acquired to protect non-mineral resources, access to and development of metallic and non-metallic/industrial minerals would be affected.

4.16.1 Impacts on Locatable (Metallic and Non-metallic/ Industrial) Minerals

The potential for development of metallic mineral resources where surface disturbance is expected to be greater than 10 acres is limited to the Julian area and areas outside sensitive areas. There are no restrictive prescriptions that would adversely affect access to or availability of developing metallic mineral resources.

One gemstone operation is projected within the next 10 years (mine greater than 10 acres of surface disturbance). The mine is projected within Peninsular Bighorn Sheep Critical Habitat in the Jacumba region of the Planning Area. Operations are expected to employ less than 5 mine personnel with an annual payroll of from $45,000 to $180,000, initial capital purchases less than $100,000, and annual purchases less than $15,000. These values would be lost if the area is withdrawn from mineral development, and activity not allowed under the plan alternatives. However, it should be noted that this level of economic impact (direct, indirect, and cumulative) would not be significant as a proportion of the local Planning Area economy or the region (San Diego County).

4.16.2 Impacts on Salable (Construction) Materials

The potential for development of construction is limited to the Julian area, road improvement/maintenance activity along Interstate 8, and major state highways in the Planning Area. Most of the lands where the potential for development would occur are privately held. There are no restrictive prescriptions that would adversely affect access to or availability of developing metallic and non-metallic/industrial minerals.

4.17 Impacts on Recreation Program

4.17.1 Recreation Management Areas

Under all alternatives except Alternative A, 103,303 acres of Special Recreation Management Areas (SRMAs) would be created. BLM lands outside of SRMAs are Extensive Recreation Management Areas (ERMA). Recreation management within ERMAs would be limited to custodial actions only. Therefore, the creation of SRMAs allows for more recreation management in these areas. Although Alternative A does not provide for any SRMAs, it creates 38,690 acres were previously identified in the McCain Valley National Cooperative Land and Wildlife Management Area in accordance with the McCain Valley RAMP (DOI BLM 1979).

Overall, the DRMP provides for a number and variety of recreational opportunities. The allowance and level of maintenance for recreation varies somewhat by alternative. Alternatives D and E call for improving staging areas outside WAs to wilderness trailheads. Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to intentionally maintain dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated wilderness and WSAs. The development of a primitive campground/equestrian area is proposed for the Chariot Canyon Recreation Management Zone (RMZ) under Alternatives B, C, D, and E.

Intensive recreational use would result in a long-term loss of productivity by means of soil compaction and areas of denuded vegetation.

4.17.2 Transportation and Public Access

Alternative B would eliminate livestock grazing in the Lark Canyon OHV area, while Alternative D would reduce the OHV area to minimize the conflict between OHV use and livestock grazing. See Table 2-18, which summarizes the acres designated as open, closed, or limited for OHV use.

For WAs, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. The Pacific Crest NST is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized.

Access requiring authorization (uses requiring permits) could involve seasonal restrictions such as seasonal closures in Peninsular Bighorn Sheep Critical Habitat during lambing season.

Authorizations or leases could result in closure to areas for public access (i.e. geothermal wind, solar) as a result of public health and safety concerns. Access for authorized uses such as minerals on split-estate lands where BLM manages the subsurface would not necessarily give public access across private lands, but grant access only to the authorized user.

DRMP level decisions (e.g., OHV area designations) and implementation-level decisions (e.g., individual route designations) would vary the number and length of routes designated by alternative (Table 4-16).

TABLE 4-16
IMPACTS ON TRANSPORTATION AND PUBLIC ACCESS BY ALTERNATIVE

	Alternative				
	A	**B**	**C**	**D**	**E**
OHV Area Designations (acres)					
Open	0	0	0	0	0
Closed	62,296	62,296	88,775	62,296	62,296
Limited	41,007	41,007	14,528	41,007	41,007
Total Acres	103,303	103,303	103,303	103,303	103,303
Routes of Travel (miles)					
Motorized	108.65	92.75	77.90	108.65	92.75
Non-motorized	87.55	98.45	113.30	82.55	98.45
Total Miles Designated	191.20	191.20	191.20	191.20	191.20

For WAs and the Pacific Crest NST, the limitation on access is for mechanized transport and motorized access. For WSAs, the use of motor vehicles, motorized equipment or other forms of mechanical transport would not be allowed off boundary roads and existing ways. These limitations provide an unavoidable adverse impact to transportation and access.

Alternatives A and D would also maintain the existing routes of travel classifications and thus would have no cumulative effect on this resource. Alternatives B and E would designate approximately 16 less miles of routes as motorized. Alternative C would decrease the amount of routes designated as motorized by 31 miles and increase the amount of non-motorized routes by 31 miles. However, some routes of travel that would not be designated are redundant; and alternatives exist on adjacent Forest Service lands, state parks lands, and on BLM lands within the Planning Area, as well as other BLM-administered lands immediately adjacent to the Planning Area.

4.17.3 Cumulative Impacts

Alternatives A, B, D, and E would maintain the same OHV area designations and thus would not result in a cumulative effect to OHV use in the region. Alternative C would increase the acreage of closed areas from 62,296 acres to 88,775 acres, which represents a 67 percent decrease of open areas. If this alternative is chosen, implementation could result in a cumulative loss of OHV areas in the region and a cumulative increase for some other recreational activities, e.g., birding, hiking.

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4.18 Social and Economic Impacts

This section of the report discusses the economic impacts associated with each of the proposed DRMP alternatives for the BLM's Planning Area. In general the level of economic activity on BLM lands in the Planning Area is very low and represents a small portion of the $213 million total output of the economy within the Planning Area. This is true for each of the BLM's program functions (e.g., agriculture, grazing, ROWs, renewable energy, minerals, and recreation). It is not expected that any of the proposed DRMP alternatives would result in any significant economic impacts. Furthermore, the level of economic output on BLM-administered lands in the Planning Area represents such a small portion of the economies of the ESDC or the county as a whole, that none of the proposed alternatives would result in a significant cumulative economic effect.

A possible exception would be the potential for large-scale wind energy development on BLM-administered lands within the Planning Area. The feasibility, size, and location of potential wind energy development are largely unknown. If and when a project is proposed to the BLM, the BLM and operator(s) would need to develop project-specific Plans of Development (PODs). Each POD would need to address the potential impacts (including economic and social impacts) of a proposed wind energy development.

4.18.1 Impacts on Livestock Grazing Program

4.18.1.1 Economic Impacts

It is unlikely that the BLM Planning Area management alternatives for the livestock grazing program would have a significant economic impact, as the existing economic conditions do not represent a significant portion of either the eastern San Diego County economy or the economy of San Diego County as a whole (see Section 3.19.2). Furthermore, the proposed planning alternatives would result in a very small or no change in the economic impact.

A very small fraction of the economic activity within BLM lands in Eastern San Diego County is generated by cattle operations. Likewise, cattle operations within BLM lands in Eastern San Diego County involve and/or affect very few people. None of the proposed BLM management actions would therefore have an appreciable effect on socio-cultural conditions within the Planning Area.

There are only two active livestock grazing allotments on BLM land within the Planning Area. Both of these active allotments are located in McCain Valley and combined they total 20,497 acres. No changes would occur in the livestock grazing allotments under Alternatives A and D, therefore, no economic impacts would result from these alternatives. Alternative B would result in a decrease of 8,325 acres (-40.6%) available for grazing. Alternative C would remove all 20,497 acres of existing grazing activity.

The livestock grazing actions proposed in the alternatives would not result in significant economic impacts. All proposed alternatives would result in either no change or a very small change in the ESDC economy and would not be significant. To assist the BLM in land use planning, Table 4-17 below lists the impacts that would result for each 10,000-acre change in the amount of public land in active grazing allotments. The resulting annual impacts from a 10,000-acre change in active grazing area are very small (i.e., less than $4,000 in total output and less than one-tenth of a job – 0.088 job) and are not significant for either the ESDC economy or the San Diego County economy.

TABLE 4-17
ECONOMIC IMPACT PER 10,000 ACRES OF PUBLIC LAND AVAILABLE FOR LIVESTOCK GRAZING WITHIN THE PLANNING AREA

Economic Impacts per 10,000 Acres of Public Land Available for Grazing				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$6,199	$4,696	$464	$11,359
Employment	0.049	0.034	0.005	0.088
Labor Income	$315	$915	$137	$1,367
Property Income	$444	$715	$116	$1,275
Tax Revenue	$177	$164	$32	$373
Value Added	$667	$2,072	$286	$3,025

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Alternatives A and D – Economic Impact. Under Alternatives A and D the livestock grazing currently in place would continue unchanged. Table 4-18 provides the total economic impacts (direct, indirect, and induced) resulting from the current level of grazing. These total impacts represent the existing economic condition and are the same as presented in Table 3-19. The total output of $23,281, the total employment of 0.18 jobs, and the total value added of $6,199 represent an insignificant benefit to the economy of the Planning Area and the region as a whole.

TABLE 4-18
ALTERNATIVES A AND D LIVESTOCK GRAZING ECONOMIC IMPACTS

Economic Impacts - 63,879 Acres Averaging 131 Head				
Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 12,705	$ 9,625	$ 951	$ 23,281
Employment	0.10	0.07	0.01	0.18
Labor Income	$ 646	$ 1,875	$ 281	$ 2,802
Property Income	$ 910	$ 1,466	$ 238	$ 2,613
Tax Revenue	$ 363	$ 335	$ 66	$ 764
Value Added	$ 1,367	$ 4,246	$ 586	$ 6,199

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Alternative B – Economic Impact. Alternative B would reduce the amount of available grazing acreage from 20,497 acres to an estimated 12,172 acres. The approximately 8,325-acre decrease (-41%) in available grazing acreage for Alternative B would result in an insignificant decrease in total sales (direct, indirect, and induced) of $9,455 within the ESDC economy (Table 4-19). Furthermore, the loss of employment under Alternative B would be negligible at 0.07 jobs, labor income loss would be $1,138, and the loss of total value added within the ESDC economy would be $2,518.

TABLE 4-19
ALTERNATIVE B LIVESTOCK GRAZING ECONOMIC IMPACTS
RESULTING FROM CHANGE IN ACREAGE AVAILABLE

Economic Impacts for Alternative B				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$7,545	$5,716	$565	$13,826
Employment	0.059	0.042	0.006	0.107
Labor Income	$384	$1,113	$167	$1,664
Property Income	$541	$871	$141	$1,552
Tax Revenue	$216	$199	$39	$454
Value Added	$812	$2,521	$348	$3,681

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Alternatives C and E – Economic Impact. Alternatives C and E would remove all grazing activity from the Planning Area. The resulting economic impact would be $0 added to the economy from livestock grazing on BLM-administered lands in the Planning Area. Although Alternatives C and E would result in a 100-percent decrease in grazing acreage on BLM lands, the resulting economic impact would not be significant (Table 4-20). The economic impact (direct, indirect, and induced) would result in a loss of sales of

$23,281 within the economy of the Planning Area, a loss of employment of 0.18 jobs, a decrease in labor income of $2,802, and a decrease in value added of $6,199. These losses for the economy in the Planning Area are insignificant and represent less than 0.1 percent of the total value of animal production.

TABLE 4-20
ALTERNATIVES C AND E LIVESTOCK GRAZING ECONOMIC IMPACTS RESULTING FROM A 100 PERCENT DECREASE IN ACREAGE AVAILABLE

Economic Impacts for Alternatives C and E as Compared to Alternative A*				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	($12,705)	($9,625)	($951)	($23,281)
Employment	(0.100)	(0.070)	(0.010)	(0.180)
Labor Income	($646)	($1,875)	($281)	($2,802)
Property Income	($910)	($1,466)	($238)	($2,614)
Tax Revenue	($363)	($335)	($66)	($764)
Value Added	($1,367)	($4,246)	($586)	($6,199)

* Negative amounts appear in parentheses.
Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

In 2004 there were 28,000 head of cattle and calves in San Diego County delivered to market representing 210,000 hundred weight (cwt) and $19.1 million total market value. The cumulative effect of livestock grazing under Alternatives A and D in the BLM-administered lands in Planning Area would be $23,281. This represents one-tenth of a percent of the entire livestock economy in San Diego County. The cumulative effect from Alternative B is $13,286. This represents less than one-tenth of a percent of the entire livestock economy in San Diego County. The cumulative effect from Alternatives C and E is $0 which is a reduction of less than one-tenth of a percent of the entire livestock economy in San Diego County.

4.18.1.2 Social Impacts

The economic data presented above show that livestock grazing on BLM land in the Planning Area has a very minor economic role in the region. Likewise, the community of livestock growers in the Planning Area is very small. To the persons involved, the ranching lifestyle may be quite important and a change of lifestyle may be perceived as very disturbing. A change in lifestyle may not be a necessary corollary of changes in acres available for grazing, however. There is considerable romanticism revolving around the ranching lifestyle, and to some seeing cowboys and cattle in the east San Diego backcountry may be a part of the recreational experience as well.

Under Alternatives C and E all grazing activity would be closed or unavailable, which would affect the 20,497 acres of active grazing within the Planning Area. Under Alternatives A and D, there would be no additional acres designated as unavailable. Under Alternative B approximately 60,337 acres would be unavailable. The total acreage under consideration supports approximately 131 head with a total direct and indirect annual dollar value (output) of about $23,281 and total labor income of $2,802 (see Table 4-27). It is unlikely that this sum amounts to a major proportion of income for the leasees. Similarly, it may be that leasees would be able to find alternative grazing areas for this small number of animals within BLM lands in the Palm Springs/South Coast jurisdiction without a substantial change in lifestyle, social status, or cultural values. It is unlikely that reducing or eliminating grazing on BLM lands in the Planning Area would have a significant adverse social impact.

Informal public input suggests that participants in some recreational activities, (e.g., hiking, birdwatching, hunting), and wildlife advocates may see the elimination or reduction of livestock grazing as beneficial. The reduction or elimination of grazing in the Planning Area may result in somewhat increased use by such groups which may offset negative perceptions of the ranch community. However, in total, the social impacts of reducing grazing or leaving it the same are minimal and would apparently affect very few people in the Planning Area. In most cases, the few people that it may influence would probably be affected in a minor way.

4.18.2 Impacts on Lands and Realty Program (including Renewable Energy)

4.18.2.1 Economic Impacts

Communication Sites

Communication sites under the Lands and Realty Program would not result in any significant economic impacts for all proposes planning alternatives. To date, only one new communication site, the U.S. Border Patrol's Airport Mesa site, is under consideration. All proposed alternatives would result in either no change or a very small change in the economy within the Planning Area and would not be significant. Using the IMPLAN model output, Table 4-21 below describes the impacts that would result from a change of one communication site on BLM lands. The resulting annual economic impacts per communication site are very small (i.e., less than $14,000 in total annual output and less than $7,000 in total value added) and are not significant for either the economy within the Planning Area or the San Diego County economy.

TABLE 4-21
ECONOMIC IMPACT PER COMMUNICATION SITE FOR THE PLANNING AREA

	Economic Impacts per Communication Site			
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$10,000	$1,752	$1,807	$13,559
Employment	0.080	0.013	0.017	0.110
Labor Income	$4,218	$572	$534	$5,324
Property Income	$5,013	$855	$1,113	$6,981
Tax Revenue	$61	$73	$126	$260
Value Added	$5,013	$855	$1,113	$6,981

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Rights-of-Way

The majority of annual economic impacts for ROWs are associated with the maintenance of paved and unpaved roadways. The average construction cost of unpaved and paved roadways may vary significantly with terrain and other factors. A planning estimate of $50,000 per mile was used for unpaved roadway (20-foot width). The average annual cost per mile of maintained ROW is approximately $4,000 per mile within the Planning Area. The Planning Area has a relatively small amount of ROW encompassing 347 acres and 28 linear miles. All proposed alternatives for ROW would result in either no change or a very small and insignificant change in the economy within the Planning Area and the San Diego County region.

Using the IMPLAN model output, Table 4-22 below describes the total economic impacts that would result from a change of 100 acres of ROW on BLM lands. The resulting annual economic impacts per 100 acres are very small (i.e., less than $44,000 in total output) and are not significant for either the economy within the Planning Area or the San Diego County economy.

Renewable Energy

There are no solar energy sites on BLM lands within the Planning Area and there are no proposals for solar energy development under the proposed DRMP alternatives. Solar potential is likely discounted due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat, and VRM classes. Therefore, no economic impacts were found for solar energy sites under any of the planning alternatives. However, any future proposed solar energy facilities would be required to address site-specific and species-specific issues during individual project

TABLE 4-22
ECONOMIC IMPACT WITHIN THE PLANNING AREA PER 100 ACRES OF ROW MAINTENANCE ON BLM LAND

Economic Impacts per 100 acres of ROW Maintenance				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$32,276	$5,654	$5,832	$43,762
Employment	0.259	0.043	0.052	0.354
Labor Income	$13,613	$1,846	$1,724	$17,183
Property Income	$16,179	$2,761	$3,594	$22,534
Tax Revenue	$197	$237	$405	$839
Value Added	$16,179	$2,761	$3,594	$22,534

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

reviews. The BLM and operators would need to develop project-specific PODs and contact appropriate agencies, property owners, and other stakeholders to identify potentially sensitive land uses, issues, and concerns specific to the region. Additional mitigation measures would be applied in the form of stipulations in the right-of-way authorization. The POD would include an analysis of the economic impacts based on the parameters of the proposed project.

There are no permanent wind energy facilities on BLM lands within the Planning Area; however, there is a wind energy test site with a 3-year interim lease. The expected cost of developing a wind energy site on BLM land is approximately $900,000 per MW. These costs include $720,000 per MW for the equipment and $180,000 for site preparation and installation. The annual cost of maintenance of the site would be $33,288 per MW (DOI BLM 2005a).

Any potential development of wind energy in the Planning area is expected to be small relative to total energy consumed in San Diego County and not expected to result in significant economic impacts. Any future proposed permanent wind energy facility would be required to address site-specific and species-specific issues during individual project reviews. The BLM and operators would need to develop project-specific PODs and must contact appropriate agencies, property owners, and other stakeholders to identify potentially sensitive land uses and issues, rules that govern wind energy development locally, and land use concerns specific to the region. Additional mitigation measures would be applied in the form of stipulations in the ROW authorization (DOI BLM 2005a). The POD would include an analysis of the economic impacts based on the parameters of the proposed project.

The baseline economic impacts per MW of wind energy power generation indicate that a wind energy farm of less than 500 MW would not result in significant economic impacts to the economy of eastern San Diego County or the San Diego County region as a whole. In general, wind energy power generation would be beneficial to the Planning Area economy and the region. Using the IMPLAN model for the Planning Area, the resulting economic impact per MW of energy generation capacity are detailed in Tables 4-23 and 4-24.

TABLE 4-23
INITIAL ONE-TIME ECONOMIC IMPACTS PER MEGAWATT FOR SITE PREPARATION AND CONSTRUCTION OF A WIND ENERGY SITE IN THE PLANNING AREA

Economic Impacts per MW of Generating Capacity				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$180,000	$31,531	$32,526	$244,057
Employment	1.440	0.250	0.290	1.980
Labor Income	$75,919	$10,296	$9,612	$95,827
Property Income	$90,228	$15,395	$20,041	$125,664
Tax Revenue	$1,099	$1,321	$2,261	$4,681
Value Added	$90,228	$15,395	$20,041	$125,664

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-24
ANNUAL ECONOMIC IMPACTS PER MEGAWATT FOR WIND ENERGY SITES WITHIN THE PLANNING AREA

Economic Impacts per MW of Generating Capacity				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$33,288	$3,729	$8,266	$45,283
Employment	0.380	0.030	0.070	0.480
Labor Income	$20,650	$1,260	$2,443	$24,353
Property Income	$2,025	$474	$2,076	$4,575
Tax Revenue	$221	$155	$574	$950
Value Added	$22,895	$1,889	$5,093	$29,877

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

4.18.2.2 Social Impacts

Land Tenure

As discussed above, land disposals and acquisitions anticipated by this DRMP are quite small and economically insignificant. While no disposals are proposed under Alternative C, 490 acres are proposed for disposal under Alternative E, 1,080 acres under Alternatives B and D, and 1,715 acres under Alternative A. It is not anticipated that these small land transactions could have any significant social impacts on communities within the Planning Area.

Easements and ROWs allow the government to obtain certain rights on private property that usually involve access or development. Most of these within the Planning Area are access roads. In the Planning Area, these are relatively few and small in area (some 347 acres and 28 linear miles). All proposed alternatives would result in either no change or a very small change in existing situation (Table 4-29) and would not create significant social impacts

Utility Corridors

A utility corridor is defined as a linear parcel of land identified for placement of one or more utilities (powerlines, pipelines, fiberoptic lines, etc.) There is only one joint use utility corridor presently traversing the Planning Area. The corridor runs east/west across approximately 1.5 miles of public land south of Table Mountain near Interstate 8. It varies in width from 2 to 5 miles. The corridor currently contains one 500-kV transmission line and several buried fiberoptic networks and telephone lines.

Alternative A (No Action) continues to utilize the one existing utility corridor. Under Alternatives B, C, D, and E, the utility corridor would be 1.5 miles long with a width of 1 mile, the northern boundary of which would be the southern boundary of the Interstate 8 ROW. As discussed in Section 2.3.18.4, all new major utilities would be located only within the designated corridor.

Public input suggests that social impact issues relating to utility corridors are primarily related to the visual impacts of high voltage power lines. Under all alternatives utility ROWs would be placed within the existing utility corridor or within or adjacent to existing ROWs to the extent practicable. This should minimize new visual impacts to already

impacted areas. Visual impacts of Alternatives B, C, D, and E would be in a narrower existing utility corridor than that of Alternative A, so they would seem to have marginally less adverse social impacts than Alternative A.

Utility corridors have access roads in them, some of which are intensively used by OHV enthusiasts and campers to access backcountry areas. Additional utility lines or pipelines and their attendant ROW access roads may have positive social impacts for the OHV and backcountry camping communities.

Communication Sites

Alternative A has two communication sites. Alternatives B through E would consider and authorize applications for communication sites on a case-by-case basis emphasizing co-location and subleasing of facilities. As discussed above, communication sites under the Lands and Realty Program would not result in any significant economic changes. Only one new communication site, the USBP's Airport Mesa site, is currently proposed and under consideration. Communication sites typically have very small footprints, so social impacts would be focused on the visual pollution aspects. None of the proposed alternatives would result in significant social impacts.

Renewable Energy

Under all alternatives, land use authorizations for renewable energy would be considered on a case-by-case basis. Under Alternatives B, C, and E, solar or wind generating facilities would not be located in VRM Classes I and II. Renewable energy developments are excluded from WAs and WSAs under all Alternatives. ACECs are exclusion areas under Alternatives B and C.

Social impacts of renewable energy relate primarily to visual impacts. Anecdotal evidence suggests that some people view wind or solar power generating facilities as a form of visual pollution. However, the environmental community tends to look upon them as a way of reducing air and water pollution associated with fossil fuel production and use. They tend to look beyond visual effects. However, wind generating facilities are visually prominent and could be controversial from a social impacts point of view. Solar and wind facilities may alter access to some backcountry areas and may adversely impact recreational use of nearby areas as well. Both solar and wind facilities require a number of acres to be withdrawn from other uses, but this is small in comparison to the

Planning Area as a whole. Based on informal comments from the public and anecdotal evidence, this is not a significant concern on the part of other user communities.

As discussed above, there are no solar electric generating facilities, existing or planned, in the Planning Area. Solar potential is likely discounted due to lack of large open flat spaces, topography, vegetative cover, boulders, and/or excluded areas due to critical habitat, and VRM classes. There is a test wind electric generating facility, and there are several potential wind power generation areas under consideration. However, no permanent wind power facilities currently exist on BLM-administered land in the Planning Area. Proposed solar and wind projects will be evaluated on a case-by-case basis in the Planning Area. Renewable energy does not vary by alternative in this DRMP. Overall, social impacts from renewable energy are insignificant.

4.18.3 Impacts on Minerals Program

4.18.3.1 Impacts on Locatable (Metallic and Non-metallic/ Industrial) Minerals

The potential for development of metallic mineral resources where surface disturbance is expected to be greater than 10 acres is limited to the Julian area and areas outside sensitive areas. There are no restrictive prescriptions that would adversely affect access to or availability of developing metallic mineral resources.

One gemstone operation is projected within the next 10 years (mine greater than 10 acres of surface disturbance). The mine is projected within Peninsular Bighorn Sheep Critical Habitat in the Jacumba region of the Planning Area. Operations are expected to employ less than 5 mine personnel with an annual payroll of from $45,000 to $180,000, initial capital purchases less than $100,000, and annual purchases less than $15,000. These values would be lost if the area is withdrawn from mineral development, and activity is not allowed under the plan alternatives.

4.18.3.2 Impacts on Salable (Construction) Materials

The potential for development of construction materials is limited to the Julian area, road improvement/maintenance activity along Interstate 8, and major state highways in the Planning Area. Most of the lands where the potential for development would occur are

privately held. There are no restrictive prescriptions that would adversely affect access to or availability of developing metallic and non-metallic/industrial minerals.

4.18.3.3 Economic Impacts

The market has demonstrated that economically viable development of leasables, salables, or locatables on BLM lands in the Planning Area is not feasible. No significant impacts would result from any of the proposed DRMP alternatives.

Leasables

Leasable resources such as oil, gas, and coal on BLM lands in the Planning Area are non-existent in commercial quantities. Geothermal resources have been identified within the Planning Area. However, three test wells in the Planning Area have indicated minimal heat flow and are not considered economically viable. There are no geothermal leases or applications for leases within the Planning Area. No significant economic impacts from leasables would result from any of the proposed DRMP alternatives for the Planning Area.

Salables

There are no salable resources that are economically viable (e.g., sand and gravel extraction) on BLM lands within the Planning Area. Therefore, no significant economic impacts would result from any of the proposed DRMP alternatives.

Locatables

The existing resource and market conditions for locatables on BLM lands do not yield an economic output. Therefore, no economic baseline exists and the market factors have demonstrated that it is unlikely that significant mining development would ever occur. Therefore, no significant economic impacts would result from any of the proposed DRMP alternatives.

4.18.3.4 Social Impacts

Leasable resources consist primarily of oil, gas, coal, and geothermal. There are no commercial oil, gas, or coal extraction operations on BLM lands in the Planning Area. Three areas have been tested for geothermal potential in the Planning Area with poor results and there are no commercial geothermal operations in the Planning Area. It is unlikely that there would be leasable resource extraction operations in the foreseeable future. Therefore no significant social impacts are anticipated resulting from any of the DRMP alternatives with regard to leasable resources.

Salable mineral resources relate primarily to sand and gravel extraction. There are no commercial sand and gravel extraction operations on BLM lands within the Planning Area; therefore, no significant social impacts would result from any of the proposed alternatives.

Locatable mineral resources include such metals as gold, silver, copper, uranium, and lead; non-metallic minerals such as asbestos, gypsum, borax, and mica; and gemstones such as turquoise, tourmaline, and diamonds. There are no commercial locatable resource extraction operations on BLM lands within the Planning Area, and none are likely. There are no anticipated social impacts from any of the proposed DRMP alternatives.

4.18.4 Impacts on Recreation Program

4.18.4.1 Economic Impacts

Recreational land uses within the Planning Area are an important source of revenues for the local economy. Total estimated visitor spending in the Planning Area (including non-BLM lands) is a minimum of $31.9 million annually and represents more than 10 percent of the total Planning Area economy. However, the total impact of day-use recreational activities and campground use on BLM lands within the Planning Area is only about $2,150,000 per year. This represents only seven percent of the total recreational/tourism spending within the Planning Area economy. As such recreational use of BLM lands within the Planning Area is not a significant portion of the local economy. Total direct visitor spending within the San Diego economy was nearly $7 billion in 2006.

It should be noted that most of the visitor spending (the dollar value of the direct impact) in the Planning Area occurs outside of BLM owned land. Indeed the total sales on BLM

land for the Lark Canyon and Cottonwood campgrounds average a miniscule $5,000 per year. The balance of the direct visitor spending outside of BLM controlled land for meals, beverages, shopping, recreation, fuel, and lodging also generates labor income, property income, and taxes within the Planning Area. The value added in the Planning Area is the sum of labor income, property income, and taxes. The total economic impact of the direct visitor spending is the sum of the direct, indirect, and induced sales within the Planning Area (see Section 3.19.1.1.2 for definition of terms).

Using the IMPLAN economic model for the Planning Area, Tables 4-25 and 4-26 below describe the impacts that would result from a change of 1,000 campground visitor use days or 10,000 dispersed-use visitor days on BLM lands. The resulting annual economic impacts per 1,000 campground use days and per 10,000 dispersed-use days are very small (i.e., about $300,000 in total output each) and are not significant for either the economy within the Planning Area or the San Diego County economy. Therefore, no significant economic impacts would result from any of the proposed DRMP alternatives.

TABLE 4-25
ECONOMIC IMPACTS PER 1,000 CAMPING VISITOR USE-DAYS GENERATED BY BLM CAMPGROUNDS WITHIN THE PLANNING AREA

Economic Impacts per 1,000 Campground Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$22,000	$5,598	$2,840	$30,438
Employment	0.253	0.045	0.026	0.324
Labor Income	$5,729	$1,800	$839	$8,368
Property Income	$3,469	$1,205	$713	$5,387
Tax Revenue	$818	$322	$197	$1,337
Value Added	$10,015	$3,327	$1,750	$15,092

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-26
ECONOMIC IMPACTS PER 10,000 MCCAIN VALLEY
DISPERSED-USE VISITOR DAYS IN THE PLANNING AREA

Economic Impacts per 10,000 Dispersed-Use Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$220,000	$42,494	$33,919	$296,413
Employment	4.505	0.309	0.304	5.118
Labor Income	$77,744	$12,165	$10,024	$99,933
Property Income	$20,221	$7,488	$8,518	$36,227
Tax Revenue	$11,261	$1,877	$2,357	$15,495
Value Added	$109,227	$21,530	$20,899	$151,656

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

The preceding discussion and tables offer some economic impact measurement benchmarks for recreational land use changes within the Planning Area.

In the following paragraphs and tables, each alternative is analyzed for potential economic impacts as a result of the expected increase or decrease in days of recreational use. However, none of the proposed alternatives would result in significant economic impacts for the Planning Area.

Alternative A. No change in recreational land use would occur under Alternative A. The resulting economic impact of Alternative A would be the same as described in the baseline economic condition (refer to Section 3.19.5.1). The following economic impacts would occur as shown in Tables 4-27, 4-28, and 4-29. Table 4-27 lists the impacts for campground user days. Table 4-28 lists the impacts from dispersed-use visitor days (outside of the BLM campgrounds). Table 4-29 lists the combined total of the campground and dispersed-use visitor days for Alternative A.

TABLE 4-27
ECONOMIC IMPACTS FOR ALTERNATIVE A FOR BLM CAMPGROUNDS
VISITOR USE-DAY IMPACTS GENERATED FOR THE PLANNING AREA

Economic Impacts - 8,533 BLM Campground Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 187,726	$ 47,771	$ 24,237	$ 259,734
Employment	2.16	0.38	0.22	2.76
Labor Income	$ 48,884	$ 15,360	$ 7,163	$ 71,407
Property Income	$ 29,597	$ 10,286	$ 6,086	$ 45,970
Tax Revenue	$ 6,980	$ 2,747	$ 1,684	$ 11,411
Value Added	$ 85,461	$ 28,393	$ 14,934	$ 128,788

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

As can be seen in the following Table 4-28. The economic impacts for dispersed visitor use of BLM lands is much larger than economic impacts generated by BLM campground visitor use ($1.9 million v. $260,000). However, visitor use on BLM lands does not generate a significant economic impact.

TABLE 4-28
ECONOMIC IMPACTS OF ALTERNATIVE A FOR BLM DISPERSED-USE VISITOR DAYS

Economic Impacts - 63,793 Dispersed Use Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 1,403,446	$ 271,082	$ 216,382	$ 1,890,910
Employment	28.74	1.97	1.94	32.65
Labor Income	$ 495,953	$ 77,604	$ 63,947	$ 637,504
Property Income	$ 128,996	$ 47,768	$ 54,338	$ 231,103
Tax Revenue	$ 71,840	$ 11,976	$ 15,038	$ 98,854
Value Added	$ 696,789	$ 137,349	$ 133,324	$ 967,461

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Under Alternative C, the annual economic value (direct, indirect, and induced) generated by recreation on BLM lands is about $2.1 million (Table 4-29). This impact is relatively small compared to the overall value of recreation and tourism in the Planning Area ($31.9 million) and for the County (nearly $7 billion). The total employment generated within the Planning Area is about 35.4 jobs and the total value added is about $1.1 million per year.

TABLE 4-29
ECONOMICS OF COMBINED CAMPGROUND AND DISPERSED-USE VISITOR DAYS ON BLM LANDS IN THE PLANNING AREA

Economic Impacts - Combined Campground & Dispersed Day Use				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 1,591,172	$ 318,853	$ 240,619	$ 2,150,644
Employment	30.90	2.35	2.16	35.41
Labor Income	$ 544,837	$ 92,964	$ 71,110	$ 708,910
Property Income	$ 158,594	$ 58,054	$ 60,425	$ 277,073
Tax Revenue	$ 78,819	$ 14,724	$ 16,723	$ 110,266
Value Added	$ 782,250	$ 165,742	$ 148,257	$ 1,096,249

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Alternatives B, D, and E – Economic Impacts. Alternatives B, D, and E would each result in the same estimated economic impacts from recreation management decisions. Alternatives B, D, and E would result in an expected 10 percent increase in campground user days for the Cottonwood Campground (589 user days) and the Lark Canyon Campground (264 user days). In addition, dispersed-use visitor days on BLM land are also expected to increase by 10 percent (6,379 user days) under Alternatives B, D, and E. The resulting change in economic impacts for Alternatives B, D, and E are listed in the following Tables 4-30, 4-31 and 4-32. These are the net changes from the baseline economic conditions listed in Tables 4-30, 4-31, and 4-32. None of the economic impacts are significant for Alternatives B, D, and E.

Alternatives B, D, and E would result in an estimated 10 percent increase in recreational user days on BLM lands within the Planning Area. The total amount of user days would increase from 72,326 to an estimated 79,558. The increase in user days of about 7,200 for Alternatives B, D, and E would result in an insignificant increase in total sales (direct, indirect, and induced) of $215,000 within the Planning Area economy. Furthermore, the increase in employment under Alternatives B, D, and E would be negligible at about 3.5 jobs. Labor income would increase a modest $70,885, and total value added within the Planning Area economy would rise about $110,000. These relatively small changes in economic impacts would be insignificant for the economy in the Planning Area and the San Diego region as a whole.

TABLE 4-30
ECONOMIC IMPACTS OF ALTERNATIVES B, D, AND E—CHANGE IN BLM CAMPGROUND USER DAYS

Economic Impacts of a 10% Increase in Campground User Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$18,766	$4,775	$2,423	$25,964
Employment	0.216	0.038	0.022	0.276
Labor Income	$4,887	$1,535	$716	$7,138
Property Income	$2,959	$1,028	$608	$4,595
Tax Revenue	$698	$275	$168	$1,141
Value Added	$8,543	$2,838	$1,493	$12,874

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-31
ECONOMIC IMPACTS OF ALTERNATIVES B, D, AND E—CHANGE IN BLM DISPERSED-USE VISITOR DAYS

Economic Impacts of a 10% Increase in Dispersed-Use Visitor Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$140,338	$27,107	$21,637	$189,082
Employment	2.874	0.197	0.194	3.265
Labor Income	$49,593	$7,760	$6,394	$63,747
Property Income	$12,899	$4,777	$5,434	$23,110
Tax Revenue	$7,184	$1,198	$1,504	$9,886
Value Added	$69,676	$13,734	$13,332	$96,742

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-32
TOTAL ECONOMIC IMPACTS FOR ALTERNATIVES B, D, AND E—COMBINED CAMPGROUND AND DISPERSED DAY USE

Economic Impacts of a 10% Increase in Recreational Use Days				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$159,104	$31,882	$24,060	$215,046
Employment	3.090	0.235	0.216	3.541
Labor Income	$54,480	$9,295	$7,110	$70,885
Property Income	$15,858	$5,805	$6,042	$27,705
Tax Revenue	$7,882	$1,473	$1,672	$11,027
Value Added	$78,219	$16,572	$14,825	$109,616

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Economic Impacts of Alternatives C. Alternative C would result in a 10 percent increase in Cottonwood Campground user days and a 75 percent decrease in the Lark Canyon Campground user days. The decrease expected for Lark Canyon would result from the closing of the Lark Canyon OHV trail system. The resulting total campground user days would decrease 1,394 days. The concomitant natural growth in dispersed day-use recreational activities would likely more than offset the direct decrease in day-use activities associated with the OHV trail system (exclusive of the loss of Lark Canyon Campground user days). Land use changes for Alternative C would result in an expected overall 1.9 percent decrease in recreational user days in the Planning Area for the Lark Canyon Campground (264 user days).

The resulting economic impacts for Alternative C are listed in the following Tables 4-33, 4-34, and 4-35. None of the economic impacts for Alternative C are significant. The 1.9 percent overall decrease in user days of about 1,400 for Alternative C would result in an insignificant decrease in total sales (direct, indirect, and induced) of $42,400 within the ESDC economy. Furthermore, the decrease in employment under Alternative C would be negligible at about one-half of a job (0.45 of a job). Labor income would decrease a modest $11,666, and total value added within the ESDC economy would decline about $7,511. As previously indicated, these economic impacts would be insignificant for the Planning Area economy.

TABLE 4-33
ECONOMIC IMPACTS OF ALTERNATIVE C—CHANGE IN BLM CAMPGROUND USER DAYS
(10% Increase in Cottonwood / 75% Decrease in Lark Canyon)

	Economic Impacts			
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ (30,670)	$ (7,805)	$ (3,960)	$ (42,435)
Employment	(0.353)	(0.062)	(0.036)	(0.451)
Labor Income	$ (7,987)	$ (2,509)	$ (1,170)	$ (11,666)
Property Income	$ (4,836)	$ (1,681)	$ (994)	$ (7,511)
Tax Revenue	$ (1,140)	$ (449)	$ (275)	$ (1,864)
Value Added	$ (13,962)	$ (4,639)	$ (2,440)	$ (21,041)

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-34
ECONOMIC IMPACTS OF ALTERNATIVE C—
CHANGE IN BLM DISPERSED-USE VISITOR DAYS

Economic Impacts				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	$ 0	$ 0	$ 0	$ 0
Employment	0.000	0.000	0.000	0.000
Labor Income	$ 0	$ 0	$ 0	$ 0
Property Income	$ 0	$ 0	$ 0	$ 0
Tax Revenue	$ 0	$ 0	$ 0	$ 0
Value Added	$ 0	$ 0	$ 0	$ 0

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

TABLE 4-35
TOTAL ECONOMIC IMPACTS FOR ALTERNATIVE C—
COMBINED CAMPGROUND AND DISPERSED DAY USE

Economic Impacts				
Impact Category	**Direct**	**Indirect**	**Induced**	**Total**
Dollar Value	($30,670)	$(7,805)	($3,960)	($42,435)
Employment	(0.353)	(0.062)	(0.036)	(0.451)
Labor Income	($7,987)	($2,509)	($1,170)	($11,666)
Property Income	($4,836)	($1,681)	($994)	($7,511)
Tax Revenue	($1,140)	($449)	($275)	($1,864)
Value Added	($13,962)	($4,639)	($2,440)	($21,041)

Source: MIG IMPLAN/Pro and CIC Research, Inc. (2006)

Cumulatively, total visitor spending within San Diego County is estimated at nearly $7 billion and is at least $31.9 million within the Planning Area. For all planning alternatives (i.e., Alternatives A through E) the resulting economic impacts of visitor spending by recreational users of BLM-administered land in the Planning Area are insignificant. These impacts represent less than one-tenth of a percent of the total recreation economy in San Diego County and less than 0.8 percent of the direct visitor spending in the Planning Area economy.

4.13.4.2 Social Impacts

Recreation

Perhaps the primary use of the Planning Area is recreation, although—as the economic data presented above attest—recreational use on BLM-administered lands in the Planning Area generates a very small amount of revenue within the Planning Area *per se*. Anecdotal evidence suggests that most residents of San Diego and Imperial Counties view the mountains and foothills of eastern San Diego County as a valuable recreational asset. This appears to be true even for people who seldom utilize the area. There are numerous recreational communities of interest who do use the area: equestrians, shooters, hunters, dayhikers, car campers, backpackers, mountain bike riders, road bike riders, birdwatchers, wildlife enthusiasts, rockhounds, OHV enthusiasts, motor tourists (utilizing both cars and motorcycles), and so on. Those recreational communities of interest whose activities do not call for mechanized or motorized transport utilize WAs and WSAs for recreation. Those who do use motor vehicles must stay out of those areas. In terms of social impacts, this distinction between motorized and non-motorized activities is important. Naturally, there are times when these different recreational communities of interest have conflicts in terms of land use. The DRMP attempts to strike a reasonable balance among these communities.

Alternatives D and E call for improving staging areas outside WAs to provide better access to wilderness trailheads. This would be viewed as a positive development for users of WAs. There would appear to be no adverse impacts to motorized recreationalists from these actions. In sum, this would be viewed as having a positive social impact.

Alternative C creates the Sawtooth Undeveloped SRMA, which would be managed to maintain and encourage dispersed and undeveloped recreation opportunities such as hiking and backpacking, hunting, wildflower and wildlife viewing, rock hounding, and equestrian use. Anecdotal evidence suggests that OHV users do not use this rugged area much, so designating it as a non-motorized use SRMA would have few adverse social impacts to the OHV community. Alternative C would have a positive social impact on the non-motorized recreational communities (e.g., equestrians, hikers, hunters, rockhounds).

Alternatives B, D, and E create the Sawtooth Destination SRMA, which would be managed to promote the continued use of the lands for hiking and backpacking, hunting,

wildflower and wildlife viewing, rock hounding, and equestrian use and would also accommodate limited OHV use, camping, and day-use outside of designated WAs and WSAs. These alternatives would have social impacts to both motorized and non-motorized users. For positive recreation experiences to result for the non-motorized users, OHV activities would be limited.

The development of a primitive campground and equestrian area is proposed for the Chariot Canyon RMZ under Alternatives B, C, D, and E. Chariot Canyon is a few miles southeast of Julian. It has a graded dirt road that trends south from Highway 78 at Banner to Oriflamme Canyon. The Pacific Crest NST passes near Oriflamme Canyon, and other trails and dirt roads exist in the area. Opening a primitive campground and equestrian area would provide enhanced recreation opportunities to a wide variety of motorized and non-motorized user communities. Anecdotal evidence suggests that social impacts would probably be positive for all user communities.

Alternatives A, B, D, and E would maintain the same OHV area designations and thus would not result in an effect to OHV use in the region. Informal discussions with the OHV community indicates they are reasonably satisfied with the current amount of area open to motorized recreational activities. These alternatives would probably be seen by the OHV community and non-motorized recreational communities as neutral in terms of social impacts.

Alternative C would increase the acreage of closed areas by approximately 30 percent from 62,296 acres to 88,775 acres of BLM land within the Planning Area. This alternative would result in a loss of OHV areas in the region (unless other land-controlling agencies expanded OHV areas). It would probably be viewed as an adverse impact by the OHV community. In contrast, it may be seen as having a positive social impact among other user communities (e.g., birdwatchers, mountain bike riders, equestrians, hikers).

Transportation and Public Access

Alternatives A and D would also maintain the existing routes of travel classifications and thus would have no social impacts. Alternatives B and E would decrease the miles of designated motorized routes by 15 percent. Alternative C would decrease the amount of designated motorized routes by 31 percent. This would result in a loss of routes designated for motorized use within the Planning Area. However, some routes of travel that would not be designated are redundant; alternatives exist on adjacent Forest

Service lands, state parks lands, and on BLM lands within the Planning Area, as well as other BLM-administered lands immediately adjacent to the Planning Area. Input from the public suggests that the closure of redundant roads does not constitute a social impact to most communities of interest for the Planning Area. However, OHV enthusiasts, car campers, hunters, and others express concerns about access to recreational areas that may be lost to road closures. If access is provided, road closures would not constitute a significant social impact to these user communities.

Motorized transport is not allowed in WAs; within WSAs the use of motor vehicles, motorized equipment, or other forms of mechanical transport would only be allowed on boundary roads and existing ROWs. The Pacific Crest NST is closed to motorized vehicles and mountain bikes. Motorized access within ACECs is limited to existing or designated routes, except as authorized. Outside of these areas, OHV use is limited to existing or designated routes, except as authorized. Except for Alternative C, there is no net change in OHV areas. As previously mentioned, representatives of the OHV community have suggested that they are reasonably satisfied with the current situation, but would object to further reductions. Only Alternative C would be viewed by this community as adverse. Other recreational communities, particularly non-motorized user communities may view this as a positive social impact.

ROWs for renewable energy (i.e., geothermal, wind, solar) could result in closure of areas for public access as a result of public health and safety concerns. These areas are relatively small, and their closure is not thought to cause significant social impacts. Access for authorized uses such as minerals extraction may also restrict access, but as discussed in the minerals section, the Planning Area has very few mineral resources, so this access issue is unlikely to be significant. No social impacts are anticipated as a result.

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4.19 Impacts on Environmental Justice

All Federal agencies and departments are directed to comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Population*, signed on February 11, 1994. The EO and accompanying memorandum focuses Federal attention on the environmental and human health conditions in minority and low-income communities, enhances the provision of nondiscrimination in federal programs affecting human health and the environment, and promotes meaningful opportunities for access to public information, and participation in matters relating to minority and low-income communities and their environment.

Each federal agency is required to, among other things, provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures of projects, program or activities undertaken by them.

4.19.1 Environmental Justice Determination

The population of the communities within the Planning Area could be generally described as older, more educated, and containing a significantly lower proportion of minority populations than the countywide average. The population within the Planning Area also contains a very high proportion of English-only speaking households compared to the countywide average (84% v. 67%).

In general the socioeconomic characteristics of the residents of the Planning Area indicate that there is a very low likelihood of environmental justice impacts resulting from any of the BLM regional management plan program alternatives for the Planning Area.

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CHAPTER 5.0
Consultation and Coordination

5.1 Interrelationships

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.

5.1.1 Other Federal Agencies

As a part of this planning effort and in implementing on-the-ground activities, BLM executes ESA Section 7 consultation with the USFWS. In 2001, BLM and USFWS finalized a consultation agreement to establish an effective and cooperative ESA Section 7 consultation process. The agreement defines the process, products, actions, schedule, and expectations of BLM and USFWS on project consultation. One Biological Assessment will be prepared to determine the effect of the Preferred Alternative on all relevant listed, proposed, and candidate species, and associated critical habitat. The Biological Assessment will expose all expected environmental effects, conservation actions, mitigation, and monitoring including analysis of all direct and indirect effects of plan decisions and any interrelated and interdependent actions. As this plan's decisions are implemented, actions determined through environmental analysis to potentially affect species listed or candidate species for listing under ESA will initiate more site-specific consultation on those actions.

The Sikes Act (16 U.S.C. 670 et seq.) authorizes the DOI in cooperation with state agencies responsible for administering fish and game laws to plan, develop, maintain, and coordinate programs for conserving and rehabilitating wildlife, fish, and game on public lands within its jurisdiction. The plans must conform to overall land use and management plans for the lands involved. The plans could include habitat improvement projects and related activities and adequate protection for species of fish, wildlife, and plants considered endangered or threatened. BLM must also coordinate with suitable state agencies in managing state-listed plant and animal species when the state has formally made such designations.

The BLM coordinates its fire management activities with the actions of related federal and state agencies responsible for fire management. The Federal Wildland Fire Policy is a collaborative effort that includes the BLM, USFS, National Park Service (NPS), USFWS, Bureau of Indian Affairs, the National Biological Service, and state wildlife management organizations. The collaborative effort has formulated and standardized the guiding principals and priorities of wildland fire management. Collaboration of the Federal Wildland Fire Policy on a nationwide scale has provided common priorities and objectives for federal land management agencies including protection of human life, property, and natural/cultural resources as secondary priorities. This policy also provides recognition of wildland fire as a critical natural process that should be safely reintroduced into ecosystems that are wildfire dependent across agency boundaries. The National Fire Plan is a collaborative interagency effort to apply the Federal Wildland Policy to all Federal Land Management Agencies and partners in state forestry or lands departments. Operational collaboration between the BLM, USFS, NPS, and USFWS is included in the Interagency Standards for Fire and Fire Aviation Operations 2003. This federally approved document addresses fire management, wildfire suppression, fuels management and prescribed fire safety, interagency coordination and cooperation, qualifications and training, objectives, performance standards, and fire management program administration.

The BLM or project applicant would coordinate with the U.S. Army Corps of Engineers (USACE) regarding any future activities within or affecting jurisdictional waters or wetlands; invasive plant removal within jurisdictional wetlands may require a permit, if the soil would be disturbed or if heavy equipment is used. EPA and USACE regulate wetland habitats under the CWA.

BLM would coordinate with Department of Defense prior to approval of ROWs for renewable energy, utility, and communication facilities to ensure that these facilities would not interfere with military training routes.

BLM coordinates with Department of Homeland Security and the USBP on border initiatives and the protection of cultural resources.

BLM coordinates with the USFS in the management of that portion of the Pacific Crest NST that crosses BLM-administered lands in the Planning Area.

5.1.2 State, County, and Local Governmental Agencies

The BLM works cooperatively with CDFG. Under California laws, the CDFG is responsible for the preservation and management of fish and wildlife found within the State of California. The BLM is likewise responsible for the management of fish and wildlife habitat on BLM-administered lands. BLM assists CDFG by providing the appropriate agreements or permits for conducting wildlife management activities on BLM lands, as well as assist with the collection of and sharing of data. BLM law enforcement patrols and enforces game violations on BLM lands. Under the Sikes Act, BLM contributed to development of the McCain Valley Wildlife Management Area and Management Plan.

Regional transportation planning and construction of roadways and highways is generally conducted by state or regional agencies, such as California Department of Transportation, county departments of transportation, and city transportation departments. When these agencies plan and develop roadways that cross public lands, BLM will coordinate with the responsible agency to develop design features that minimize the fragmenting effect of the planned roadway. BLM will work with the responsible agency to evaluate and incorporate safe and effective wildlife crossings to ensure species long-term viability and maintaining habitat connectivity. Where planned roadways potentially fragment other resources, such as (but not limited to) recreation routes or trails, grazing allotments, or mining operations, BLM will work with the responsible agency to provide continued connectivity for those purposes as well. BLM will also work with the agency to provide continued safe access to public lands from any developed roadway for recreation and other public land users.

The BLM will coordinate with the County of San Diego's Department of Environmental Health Land Use Program which regulates the design, construction, maintenance, and destruction of water wells throughout San Diego County, and with the DWR for water quality testing of any new wells. BLM coordinates with the California Department of Forestry and Fire Protection (CDFFP) and the U.S. Forest Service on fire suppression under a Cooperative Fire Protection Agreement, and coordinates with the CDF on water use for water tanks used in fire suppression.

The BLM cooperates with the County of San Diego's efforts for data collection and sharing for the East County MSHCP.

BLM would coordinate with local communities, Native American tribes and groups, Cleveland National Forest, California State Historic Preservation Office, San Diego Archaeological Society, San Diego County, CDFG, USFWS, USBP, California State Parks, California Department of Forestry, California State Lands Commission, and local public health and safety organizations, and various NGOs in the administration of the SRMAs. BLM also coordinates with California Department of Conservation for gating mines for bats.

BLM receives grants from the Off-Highway Motorized Vehicle Division of the California Department of Parks and Recreation for maintenance, enhancement, and enforcement of recreational riding areas, including Lark Canyon.

5.1.3 Consultation with Native Americans

To comply with EOs regarding Government-to-Government relations with Native Americans and other federal laws and regulations, formal and informal contacts were made with a number of tribal entities at several points in the planning process. BLM initiated consultation with Native American tribes through letters, which were sent in December 2004. A letter was sent to the chairman of each band or tribe which could have cultural ties to the Planning Area, and a letter was sent to council members, staff, and individuals who might have an interest in the planning area. Each letter explained the need for a new plan, described the planning area, and requested comments on religious or cultural values that could be affected by the plan. In January 2005, BLM, several other federal agencies, and tribes participated in two general coordination meetings and, at these meetings, BLM announced that development of a plan was in process. Also in January and February 2005, BLM contacted via telephone those tribes which had not responded to the request for comments. In September 2006, additional letters were sent out to the tribes informing them that the planning process was still underway and reinviting their participation in the process. These entities will continue to be contacted and comments requested at key milestone points as the planning process. The 20 tribal entities 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
- Kumeyaay Cultural Historic Committee
- Kumeyaay Cultural Repatriation Committee

5.1.4 Consultation with the California State Office of Historic Preservation

The Bureau of Land Management initiated formal consultation with the 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 (1997) and the Protocol Agreement between the California State Director of the Bureau of Land Management and the California SHPO (1998). Consultation regarding historic properties that might be affected by this plan is ongoing.

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5.2 List of Preparers

Though individuals have primary responsibility for preparing sections of the DRMP/EIS, the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. Specialists at the BLM's field office, state, and Washington office levels review the analysis and supply information, as well as provide document preparation oversight. Contributions by individual preparers may be subject to revision by other BLM specialists and by management during internal review.

TABLE 5-1
LIST OF PREPARERS

Name	Job Title	Years of Expertise	Primary Responsibility
BLM-El Centro Field Office			
Beal, Jabe	Park Ranger	2	Recreation; Routes of Travel
Dreyfuss, Erin	Natural Resource Specialist/Acting Environmental Protection Specialist	2	Grazing; Vegetation; NEPA Coordination
Johnson, John	Wilderness Coordinator	1	Wilderness; Special Designations; Visual Resources
Kastoll, Lynda	Realty Specialist	28	Lands and Realty
Meeks, Dallas	Outdoor Recreation Planner	13	Recreation; Routes of Travel
Self, Linda	Realty Specialist	17	Land Tenure
Simmons, Carrie	Field Office Archaeologist	1	Cultural Resources
Steward, Daniel	Wildlife Biologist/Acting Resources Staff Chief	4	Wildlife; Vegetation; GIS Support
Taylor, Gary	NEPA Coordinator	20	NEPA Coordination
Todd III, Walter "Buzz"	Field Office Geologist	20	Mining; Geology
Wood, Vicki	Field Manager	10	Management Oversight
Zale, Tom	Multi-Resource Staff Chief	28	Project Coordination
BLM-California Desert District Office			
LaPre, Larry	District Wildlife Biologist	27	Wildlife
Daulton, John			Planning; Review
Roholt, Chris	Wilderness/NLCS Coordinator		Wilderness; Special Designations
Stein, Alan	Deputy District Manager, Resources	33	Planning; Review

TABLE 5-1
LIST OF PREPARERS

Name	Job Title	Years of Expertise	Primary Responsibility
BLM-California Desert District Office (cont.)			
Waiwood, Robert	District Geologist	33	Minerals
BLM-California State Office			
Ilano, Eliseo	Planning and Environmental Coordinator	8	Planning; Review
Willoughby, John	State Botanist	30	Priority and Special Status Plants; Native American Plant Collection
BLM-South Coast Prescribed Fire Module			
Gannon, James	South Coast Fuels Crew	12	Wildland Fire Management
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Howe, Clayton R.	Fire Mitigation Education Specialist	31	Wildland Fire Management
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Benn, Candie	Client Care Program Manager	20	Client Liaison
Blocker, Eija	Production Specialist	18	Editing, Formatting, and Production of Deliverables
Fromer, Paul	Environmental and Conservation Planner	26	Principal in Charge
Hull, Warren L. "Skip"	Director of Economic Analysis, CIC Research, Inc.	30	Economic Analysis
Johnson, Cheryl	Environmental Planner	5	Writer/Editor; Air, Soil, Water Resources
Loeffler, Wendy	Senior Biologist	13	Project Manager; Writer/Editor; Biological Resources
Morales, Susy	Wildlife Biologist	12	Writer/Editor; Wildlife
Simmons, Gregg	Manager, Simmons Environmental and Natural Resource Consulting, LLC	31	Environmental Planner and Technical Advisor
Taylor, Drew	GIS Analyst	3	GIS and Graphic Support
Underwood, Jackson	Archaeologist	22	Cultural Resources
Woods, Lori Jones	Environmental Planner, Landscape Architect	27	Visual Resources

ACRONYMS

ACEC	Area of Critical Environmental Concern
ADA	Americans with Disabilities Act
AML	Abandoned Mine Lands
AMP	Allotment Management Plan
AMR	Appropriate Management Response
APCD	Air Pollution Control District
APHIS	Animal and Plant Health Inspection Service
ARPA	Archaeological Resource Protection Act
ATV	all-terrain vehicle
AU	Animal Unit
AUM	Animal Unit Month
BAER	Burned area emergency response
BACT	Best Available Control Technology
BLM	Bureau of Land Management
BMP	Best Management Practice
BTU	British Thermal Unit
BO	Biological Opinion
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CALTRANS	California Department of Transportation

CDCA	California Desert Conservation Area
CDD	California Desert District
CDF	California Department of Forestry
CDFFP	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CDPA	California Desert Protection Act
CWPP	Community Wildfire Protection Plans
DPA	Direct Protection Area
CERCLA	Comprehensive Environmental Recovery, Compensation and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHL	California Historic Landmark
CO	carbon monoxide
CO_2	carbon dioxide
CRMP	Cultural Resource Management Plan
CRU	Community Resource Unit
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DHS	Department of Health Services
DM	Departmental Manual
DOA	United States Department of Agriculture
DOI	United States Department of the Interior
DOT	United States Department of Transportation
DPR	Department of Pesticide Regulation

DRMP	Draft Resource Management Plan
DRMP/EIS	Draft Resource Management Plan and Draft Environmental Impact Statement
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECFO	(BLM) El Centro Field Office
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPS	Economic Profiling System
ERMA	Extensive Recreation Management Areas
ESA	Endangered Species Act
ESDC	Eastern San Diego County
FEIS	Final Environmental Impact Statement
FEIR	Final Environmental Impact Report
FERC	Federal Energy Regulatory Commission
FGDC	Federal Geographic Data Committee
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act of 1976
FLREA	Federal Lands Recreation Enhancement Act
FLTFA	Federal Land Transaction and Facilitation Act
FMP	fire management plan
FPEIS	Final Programmatic Environmental Impact Statement

FTHL	flat-tailed horned lizard
GIS	Geographic Information System
IA	Interagency Agreement
IB	(BLM) Information Bulletin
IM	(BLM) Instruction Memorandum
IMP	(BLM) Interim Management Policy
IMPLAN®	Impact Analysis for Planning
I–O	input–output
IPM	Integrated Pest Management
KOP	Key Observation Point
LUP	Land Use Plan
LWCF	Land and Water Conservation Fund
MCL	Maximum Contaminant Level
MFP	Management Framework Plan
MIST	minimum impact suppression tactics
MLA	Mineral Leasing Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPC	Materials Processing Center
Mph	miles per hour
MPO	Mining Plan of Operations
MS	(BLM) Manual Section
MSCP	Multiple Species Conservation Plan
MTP	master title plan

MU	Management Unit
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation act
NEAP	Natural Events Action Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NGO	non-governmental organization
NOI	Notice of Intent
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPS_1	non-point source
NPS_2	National Park Service
NREL	National Renewable Energy Laboratory
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NST	National Scenic Trail
NWR	National Wildlife Refuge
O_3	ozone
OHV	off-highway vehicle
PBHS	Peninsular bighorn sheep
PCE	primary constituent element
PFC	Proper Functioning Condition
PLO	Public Land Order

P.M.	(California Department of Transportation) Post Mile
PM_{10}	particulate matter (less than 10 microns)
$PM_{2.5}$	particulate matter (less than 2.5 microns)
POD	Plan of Development
PRMP	Proposed Resource Management Plan
PV	prospectively valuable see page 3-145
R&PP	Recreation and Public Purposes Act
RAMP	Recreation Area Management Plan
RCRA	Resource Conservation Recovery Act
RFA	Reasonable Foreseeable Management Action Scenario
RFD	Reasonable Foreseeable Development
RAMP	Recreation Area Management Plan
RMIS	Recreation Management Information System
RMP	Resource Management Plan
RMZ	Recreation Management Zone
ROD	Record of Decision
RONA	Record of Non-applicability
ROS	Recreation Opportunity Spectrum
ROW	Right-of-Way
R.S.	Revised Statute
RUP	Recreation Use Permit
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SAD	Special Area Designation

SANDAG	San Diego Association of Governments
SCORP	Statewide Comprehensive Outdoor Recreation Plans
SCP	Special Recreation Permit
SDAB	San Diego Air Basin
SDCWA	San Diego County Water Authority
SHPO	State Historic Preservation Office
SIB	Southern International Boundary
SIP	State Implementation Plan
SOx	Oxides of Sulfur
SMARA	Surface Mining and Reclamation Act
SRMA	Special Recreation Management Areas
SRP	Special Recreation Permit
SSS	Special Status Species
SWFL	Southwestern willow flycatcher
SWRCB	State Water Resources Control Board
T&E	threatened and endangered
TGA	Taylor Grazing Act
TMA	Travel Management Area
TMN	Travel Management Network
TR	Technical Reference
UDI	Undocumented Immigrant
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USBP	United States Border Patrol

U.S.C	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VCR	Visual Contrast Rating
VRM	Visual Resource Management
VOCs	Volatile Organic Compounds
VRM	Visual Resource Management
WA	Wilderness Area
WO	(BLM) Washington Office
WSA	Wilderness Study Area
WUG	Western Utility Group
WUI	Wildland Urban Interface
ZIP	Zoning Improvement Plan

GLOSSARY OF TERMS

A

Adit: See Mine Adit.

Adjacent is defined by ASTM E1527-00 as any real property the border of which is contiguous or partially contiguous with that of the Site or would be contiguous or partially contiguous with that of the Site but for a street, road, or other public throughfare separating them.

Administrative Route: Routes that lead to developments that have an administrative purpose, where the BLM or some permitted user must have access for regular maintenance or operation.

Adverse visual impact: any modification in land forms, water bodies, or vegetation, or any introduction of structures, which negatively interrupts the visual character of the landscape and disrupts the harmony of the basic elements (i.e., form, line, color, and texture).

(A)esthetics: relates to the pleasurable characteristics of a physical environment as perceived through the five senses of sight, sound, smell, taste, and touch.

Allotment Management Plan (AMP): A livestock grazing management plan dealing with a specific unit of rangeland and based on multiple use resource management objectives. The AMP considers livestock grazing in relation to other uses of rangelands and to renewable resources (e.g., watershed, vegetation and wildlife). An AMP establishes the seasons of use, number of livestock to be permitted on rangelands, and the range improvements needed.

Animal Unit (AU): One mature (1,000-pound) cow or the equivalent based upon an average daily forage consumption of 26 pounds of dry matter per day.

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

Archaeological Feature: A non-portable object, not recoverable from its matrix (usually in an archeological site) without destroying its integrity. Examples are rock paintings, hearths, post holes, floors, and walls.

Archaeological district: Area of Critical Environmental Concern (ACEC): A designated area on public lands where special management attention is required: (1) to protect and prevent irreparable damage to fish and wildlife; (2) to protect important historic, cultural, or scenic values, or other natural systems or processes; or (3) to protect life and safety from natural hazards.

B

Back-country Byway: A component of the national scenic byway system which focuses primarily on corridors along back-country roads which have high scenic, historic, archeological, or other public interest values. The road may vary from a single-track bike trail to a low-speed, paved road that traverses back-country areas. (BLM Handbook H-8357-1, B 2)

Basic Elements: The four design elements (form, line, color, and texture), which determine how the character of a landscape is perceived.

C

Casual Use (Mining): Mining that only negligibly disturbs federal lands and resources and does not include the use of mechanized earth moving equipment, explosives, or motorized equipment (greater than 25 horsepower). Casual use generally includes panning, non-motorized sluicing, and collecting mineral specimens using hand tools.

Characteristic: A distinguishing trait, feature, or quality.

Characteristic Landscape: The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Computer Graphics: Visual displays of information produced by an electronic computer. This includes both hard-copy and screen displays.

Contrast: Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast Rating: A method of analyzing the potential visual impacts of proposed management activities.

Cretaceous: In geologic history the third and final period of the Mesozoic era, from 144 million to 65 million years ago, during which extensive marine chalk beds formed.

Cultural Modification: Any man-caused change in the land form, water form, vegetation, or the addition of a structure which creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

Cultural Resource: A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

Cultural Resource Data: Cultural resource information embodied in material remains such as artifacts, features, organic materials, and other remnants of past activities. An important aspect of data is context, a concept that refers to the relationships among these types of materials and the situations in which they are found.

Cultural Resource Data Recovery: The professional application of scientific techniques of controlled observation, collection, excavation, and/or removal of physical remains, including analysis, interpretation, explanation, and preservation of recovered remains and associated records in an appropriate curatorial facility used as a means of protection. Data recovery may sometimes employ professional collection of such data as oral histories, genealogies, folklore, and related information to portray the social significance of the affected resources. Such data recovery is sometimes used as a measure to mitigate the adverse impacts of a ground-disturbing project or activity.

Cultural Resource Integrity: The condition of a cultural property, its capacity to yield scientific data, and its ability to convey its historical significance. Integrity may reflect the authenticity of a property's historic identity, evidenced by the survival or physical characteristics that existed during its historic or prehistoric period, or its expression of the aesthetic or historic sense of a particular period of time.

Cultural Resource Inventory (Survey): A descriptive listing and documentation, including photographs and maps of cultural resources. Included in an inventory are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and on-the-ground surveys of varying intensity.

Class I: A professionally prepared study that compiles, analyzes, and synthesizes all available data on an area's cultural resources. Information sources for this study include published and unpublished documents, BLM inventory records, institutional site files, and state and National Register files. Class I inventories may have prehistoric, historic, and ethnological and sociological elements. These inventories

are periodically updated to include new data from other studies and Class II and III inventories.

Class II: A professionally conducted, statistically based sample survey designed to describe the probable density, diversity, and distribution of cultural properties in a large area. This survey is achieved by projecting the results of an intensive survey carried out over limited parts of the target area. Within individual sample units, survey aims, methods, and intensities are the same as those applied in Class III inventories. To improve statistical reliability, Class II inventories may be conducted in several phases with different sample designs.

Class III: A professionally conducted intensive survey of an entire target area aimed at locating and recording all visible cultural properties. In a Class III survey, trained observers commonly conduct systematic inspections by walking a series of close-interval parallel transects until they have thoroughly examined an area.

Cultural Resource Project Plan: For cultural resource projects, a detailed design plan that defines the procedures, budget, and schedule for such activities as structure stabilization, recordation, interpretive development, and construction of facilities such as trails. These plans include estimates on workforce, equipment, and supply needs.

Cultural Resource Values: The irreplaceable qualities that are embodied in cultural resources, such as scientific information about prehistory and history, cultural significance to Native Americans and other groups, and the potential to enhance public education and enjoyment of the Nation's rich cultural heritage.

Cultural Site: A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic property. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

D

***De minimis* condition:** An environmental condition that does not generally present a material risk of harm to the public health or the environment and that generally would not be subject to an enforcement action if brought to the attention of appropriate government agencies.

Discretionary construction: Any construction activity requiring a permit from BLM.

Distance Zones: A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middleground, background, and seldom seen.

E

Enhancement: A management action designed to improve visual quality.

Ethnoecology: The study of the relationship between a society and its natural environment, including the spatio-temporal organization of human activities and how nature and natural resources are used (i.e. hunting, fishing, collecting, farming, preparing food); the study of how people perceive and manipulate their environments.

Excavation: The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

F

Foreground-middleground Distance Zones: The area visible from a travel route, use area, or other observation point to a distance of 3 to 5 miles. The outer boundary of this zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. Vegetation is apparent only in patterns or outline.

Form: The mass or shape of an object or objects which appear unified, such as a vegetative opening in a forest, a cliff formation, or a water tank.

Free Use Permit (FUP): A permit that that is generally issued to a governmental entity (e.g. state, county, or city) that allows the removal mineral materials from the public lands free of charge.

G

H

Historical Site: A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

I

Igneous Rock: Rock, such as granite and basalt, that has solidified from a molten or partially molten state.

Indian Tribe: Any American Indian group in the United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

Indigenous: Being of native origin (such as indigenous peoples or indigenous cultural features).

Interdisciplinary Team: A group of individuals with different training, representing the physical sciences, social sciences, and environmental design arts, assembled to solve a problem or perform a task. The members of the team proceed to a solution with frequent interaction so that each discipline may provide insights to any stage of the problem and disciplines may combine to provide new solutions.

J

K

Key Observation Point (KOP): one or a series of points on a travel route or at a use area or a potential use area, where the view of a management activity would be most revealing.

L

Landscape Character: The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture. These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.

Landscape Features: The land and water form, vegetation, and structures which compose the characteristic landscape.

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

Line: The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Management Activity: A surface disturbing activity undertaken on the landscape for the purpose of harvesting, traversing, transporting, protecting, changing, replenishing, or otherwise using resources.

Mine Adit: A horizontal opening of a mine.

Mine Shaft: A vertical opening of a mine.

Mineral Material Disposal: The sale of sand, gravel, decorative rock, or other materials defined in 43 CFR 3600.

Mining Claim: A mining claim is a selected parcel of Federal Land, valuable for a specific mineral deposit or deposits, for which a right of possession has been asserted under the General Mining Law. This right is restricted to the development and extraction of a mineral deposit. The rights granted by a mining claim protect against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. The two types of mining claims are lode and placer. In addition, mill sites and tunnel sites may be located to provide support facilities for lode and placer mining.

Mining Notice: The notification a mining operator must submit to BLM of the intention to begin an operation that will disturb 5 acres or less a year within a mining claim or project area. The intent of a Notice is to permit operations with limited geographic disturbance to begin after a quick review for potential resource conflicts and to eliminate the need for federal action. A Notice requires no special forms, but an operator must submit specific information. BLM must complete its review of the Notice within 15 calendar days of its receipt unless more information is needed to determine if the operation would cause unnecessary or undue degradation.

Mining Plan of Operations: A plan for mineral exploration and development that a mining operator must submit to BLM for approval for all mining, milling, and bulk sampling of more than 1,000 tons or more and for exploration disturbing more than 5 acres or on special status lands, including wilderness, areas of critical environmental concern, national monuments, national conservation areas, and lands containing proposed or listed threatened or endangered species or their critical habitat. A plan of operations must document in detail all actions that the operator plans to take from exploration through reclamation.

Mitigation: Mitigation includes: (a) Avoiding the impacts altogether by not taking an action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e)

Compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

N

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

National Scenic Trail: One of the three categories of national trails defined in the National Trails System Act of 1968 that can only be established by act of Congress and are administered by federal agencies, although part or all of their land base may be owned and managed by others. National Scenic Trails are existing regional and local trails recognized by either the Secretary of Agriculture or the Secretary of the Interior upon application.

National Register District: A group of significant archaeological, historical, or architectural sites, within a defined geographic area, that is listed on the National Register of Historic Places. See National Register of Historic Places.

National Register of Historic Places: The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. Also see National Historic Preservation Act.

National Register Eligible Properties: Cultural resource properties that meet the National Register criteria and have been determined eligible for nomination to the National Register of Historic Places because of their local, state, or national significance. Eligible properties generally are older than 50 years and have retained their integrity. They meet one or more of four criteria: (a) associated with events that have made a significant contribution to the broad patterns of our history; (b) associated with the lives of persons significant in our past; (c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master; and (d) have yielded, or may be likely to yield, information important in prehistory or history.

Naturalistic Character: A landscape setting where the basic elements are displayed in a composition that appears unaltered by man.

Non-native Invasive Species: See Invasive Species and Noxious Weed.

Noxious Weed: According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agricultural and commerce of the United States and to the public health.

No Surface Occupancy (NSO): A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface to protect special values of uses. Lessees may explore for or exploit the fluid minerals under leases restricted by this stipulation by using directional drilling from sites outside the no surface occupancy area.

O

Off-Highway Vehicle (OHV): Any vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, deriving motive power from any source other than muscle. OHVs exclude: 1) any non-amphibious registered motorboat; 2), any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; 3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies.

P

Paleontological Resources (Fossils): The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are important for understanding past environments, environmental change, and the evolution of life.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Paleozoic Era: An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Missippian, Pennsylvanian, and Permian periods.

Patayan: A group of North American Indians who lived between perhaps AD 700 and AD 1550 in western Arizona, southeastern California, and Baja California largely along the lower Colorado River and lower Gila River valleys.

Petroglyph: Pictures, symbols, or other art work pecked, carved, or incised on natural rock surfaces.

Physiographic Province: An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin (Fenneman 1946; Sahrhaftig 1975).

Pleistocene (Ice Age): An epoch in the Quarternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

Prehistoric: Refers to the period wherein American Indian cultural activities took place before written records and not yet influenced by contact with nonnative culture(s).

Primitive Road: A linear route used by four-wheel drive or high-clearance vehicles. Primitive Roads do not normally meet any BLM road design standards.

Q

Quarternary Period: The current period of geologic history and second period of the Cenozoic era, which is believed to have covered the last 2 million to 3 million years.

R

Recreation Opportunity Spectrum (ROS): A planning inventory process that provides a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes: primitive, semi-primitive non-motorized, roaded natural, rural, and urban. The setting is measured by the number of people expected, producing different levels of solitude and the evidence of human use as shown by management activities and degree of development. The resulting ROS analysis defines specific geographic areas on the ground, each of which encompasses one of the six classes.

Rehabilitation: A management alternative and/or practice which restores landscapes to a desired scenic quality.

Restoration (Cultural Resource): The process of accurately reestablishing the form and details of a property or portion of a property together with its setting, as it appeared in a particular period of time. Restoration may involve removing later work that is not in itself significant and replacing missing original work. Also see Stabilization (Cultural Resource).

Route: Any motorized, non-motorized, or mechanized transportation corridor. Corridor may either be terrestrial or a waterway. "Roads," "trails," and/or "ways" are considered routes.

RS 2477: Revised Statute 2477 was enacted as part of the Mining Law of 1866, during a time when the federal government's focus was on encouraging settlement and development of the West. Congress passed R.S. 2477 to ensure miners' routes to their claims and cattlemen's trails for their herds by granting rights-of-way over any federal land not otherwise set aside. Although Congress repealed the statute in 1976 with the Federal Land Policy and Management Act, it did not terminate rights-of-way in existence at that time. As part of the new law in 1976, Congress recognized all valid existing claims to these rights-of-way as of that date.

S

Saleable Minerals: Common variety minerals on the public lands, such as sand and gravel, which are used mainly for construction and are disposed by sales or special permits to local governments. See also Mineral Materials.

Scale: The proportionate size relationship between an object and the surroundings in which the object is placed.

Scenery: The aggregate of features that give character to a landscape.

Scenic Area: An area whose landscape character exhibits a high degree of variety and harmony among the basic elements which results in a pleasant landscape to view.

Scenic Quality: The relative worth of a landscape from a visual perception point of view.

Scenic Quality Evaluation Key Factors: The seven factors (land form, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications) used to evaluate the scenic quality of a landscape.

Scenic Quality Ratings: The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating.

Scenic Values: (refer to scenic quality and scenic quality ratings).

Sedimentary Rocks: Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments deposited in water.

Sensitivity Levels: Measures (e.g., high, medium, and low) of public concern for the maintenance of scenic quality.

Shaft: See Mine Shaft.

Simulation: A realistic visual portrayal which demonstrates the perceivable changes in landscape features caused by a proposed management activity. This is done through the use of photography, artwork, computer graphics, and other such techniques.

Split-estate: Land whose surface rights and mineral rights are owned by different entities.

Startle effect: Any sudden noise that results in disturbance to wildlife.

State Historic Preservation Officer (SHPO): The official within and authorized by each state at the request of the Secretary of the Interior to act as liaison for the National Historic Preservation Act. Also see National Historic Preservation Act.

Stopover: A location used by migratory birds to temporarily rest and/or forage during migration.

Subsurface: Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

Surface Occupancy: See No Surface Occupancy.

T

Texture: The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

U

Uncommon Variety Minerals: Stone, gravel, pumice, and cinder deposits that have distinct and special properties making them commercially valuable in a manufacturing, industrial, or processing operation. Such minerals are locatable under the Mining Law of 1872, as amended. In determining a deposit's commercial value, the following factors may be considered: quality and quantity of the deposit, geographic location, accessibility to transportation, and proximity to market or point of use.

Use Volume: The total volume of visitor use each segment of a travel route or use area receives.

V

Vandalism (Cultural Resource): Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. Section 6 of the Archaeological Resources Protection Act states that "no person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands...unless such activity is pursuant to a permit issued under section 4 of this Act."

Variables: Factors influencing visual perception including distance, angle of observation, time, size or scale, season of the year, light, and atmospheric conditions.

Variety: The state or quality of being varied and having the absence of monotony or sameness.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor. Protection, rehabilitation, or enhancement is desirable and possible.

Visual Contrast: See Contrast.

Visual Quality: See Scenic Quality.

Visual Resources: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features).

Visual Resource Management Classes: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

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

Visual Values: See Scenic Quality.

W

Z

Zanja: An aqueduct or irrigation system.

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APPENDICES

APPENDIX A

RESULTS OF SCOPING

Introduction

The Eastern San Diego County Planning Unit spans a portion of the eastern escarpment of Southern California's Peninsular Ranges. It is a land of remarkable diversity, encompassing a range of environments from pine forests and flowing streams to palm oases overlooking shimmering desert basins. As early Spanish, Mexican, and American pioneers and settlers traversed the region on their way to developing coastal population centers, they encountered small bands of Kumeyaay and Mountain Cahuilla Indians. Except for cattlemen who established isolated ranches in order to graze their stock in the grassy valleys and shrub-covered hills, few of the newcomers settled here. Today, much of the region remains wild and uncrowded in spite of the steady growth of the urban society only a short distance to the west.

Scattered in a north-south band along the mountain front are 98,902 acres of public land under the administration of the Bureau of Land Management. Most of the higher land 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 the National Forest lands. The Riverside County and Mexican Border mark the northern and southern boundaries of the unit.

Scoping process

A. Notice of Intent

A Notice of Intent (NOI) to prepare an RMP 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 public scoping lasted from July 14, 2004 through October 12, 2004.

B. Public Scoping Meetings

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 discussing their concerns with a subject matter expert from the El Centro Field Office. The next meeting segment was a comment time where the public was encouraged to state their preferences for the

ESDCRMP/EIS to a panel from the field office. At the end of the meeting information was passed out on how to make additional comments.

The panel consisted of: Greg Thomsen – Field Manager, Lynnette Elser – Resource Supervisor, Gary Taylor – NEPA Coordinator, Bob Haggerty – Law Enforcement, Dallas Meeks - Outdoor Recreation Planner, Chris Knauf – Project Manager, and John Johnson – Wilderness Coordinator. The facilitator was David Frink, and the transcripts were taken by Gillespie Reporting and Document Management Inc..

In addition to the two formal public scoping meetings, in 2005 ECFO staff met with Anza Borrego Desert State Park, the County of San Diego, California State Parks, U.S. Forest Service, and two water districts to gather information for the RMP/EIS process. In June 2006, a Social and Economic Workshop was also conducted in the Planning Area.

BLM contacted 15 federally recognized tribes to solicit information on their cultural issues for Eastern San Diego County Resource Management Plan.

During the initial 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. Public comments, issues, and management concerns are summarized in the following three issues:

Issue Summary

A. Summary of Public Comments, Concerns, and Opportunities

- **Issue #1** How will the Natural Resources Values of Eastern San Diego County public lands be managed?

  The public comments indicated the desire to maintain the Wilderness Study Areas, turn them into Wilderness areas, or give them to California State Parks. Also, there were several comments to prohibit grazing in peninsular range bighorn sheep habitat and ensure that the threatened and endangered (T&E) species were protected. It was also commented that BLM should stop all activities that damage the land or destroys the wilderness characteristics. It was stated that OHVs should only travel on authorized routes and do not develop any new routes. One commenter stated that grazing should be maintained as a cultural and historic component of the area. Another commenter recommended the development of an area for target shooting to keep the government lands safe. Lastly there were comments to research the ecosystem plants, consider conservation strategies, and manage invasive plants and weeds. One respondent wanted extensive plant monitoring in the ESDCRMP area.

The scope of monitoring requested would require us to increase our Full Time Equivalencies (FTE) by 2 to 3 personnel.

- **Issue #2** How will human activities and uses be managed?

  The public comments expressed the public's wish maintain recreation, hunting, OHV, target shooting and camping. Others wanted more control of the OHV riding to maintain biological health of the area. Commenters wanted various routes limited to street legal vehicles only and monitoring of the OHV area. Additional comments indicated that the OHV riding continue, while more solitude areas for lower impact users and wildlife would be conserved. One commenter urged not to open east McCain Valley to OHVs. Another recommended to camouflage illegal routes. One commenter wanted the banning of target shooting in ACECs and greater law enforcementpresence, while another wanted to maintain the area's biodiversity.

- **Issue #3** How will the RMP be integrated with other agency and community plans?

  This issue centers around the desire to integrate the management plan with other government agencies and to ensure that this issue centers around a desire to ensure that government-to-government consultation has occurred regarding the RMP and EIS.

The data displayed below represents the numbers of comments for each issue and sub-issue.

Issue #1: How will the Natural Resources Values of Eastern San Diego County Public Lands be managed?

- **A** Vegetation Management 18
- **B** Livestock Grazing Management 10
- **C** Riparian and Water Resources 0
- **D** Cultural Resources Protection and Management 10
- **E** Areas of Critical Environmental Concern (ACEC) 3
- **F** Wilderness Areas 19
- **G** Fire and Fuels Management 2

Issue #2 How will human activities and uses be managed?

- **A** Recreation use 14

- **B** Transportation and Public Access 2
- **C** OHV Management 8
- **D** Hunting 5
- **E** Shooting 7
- **F** Electronic sites, Utility Corridors, Right-of-way, Wind Power Generation Sites, and Withdrawals…. 4
- **G** Land Tenure Adjustments 1
- **H** Law Enforcement 3

Issue #3 How will the RMP be integrated with other agency and community plans?..

- **A** Emergency Services 1
- **B** Tourism Management
- **C** T&E 3
- **D** Government to Government 1

B. Issues and Decisions to be Made

The pre-plan prepared by Bureau of Land Management in 2001 anticipated that three major issues would have to be addressed in the course of developing an RMP. These issues are framed as the following questions.

1. How will the natural resource values of the Eastern San Diego County public lands be managed?

   Eastern San Diego County public lands support multiple-use opportunities. They support economic activities, offer natural, cultural, scenic, wilderness, and recreational resources. Management of human activities is an integral part of the total public land resource management.

2. How will human activities and uses be managed?

The Planning Area provides a variety of landscapes for many activities and land uses. Management of human activities is essential to preserve present and future resource uses and employment.

3. How will BLM management be integrated with other agency and community plans?

The BLM is committed to work with other agencies and communities in managing the Planning Area. Coordination with federal and state agencies is essential for the effective management of the Planning Area.

Based on the direction provided by BLM management and on comments received during the scoping process BLM has determined that the following issues will be addressed by the management plan.

- Eastern San Diego County public lands support multiple-use opportunities. They support economic activities and offer natural, cultural, scenic, wilderness, and recreational resources. Management of human activities is an integral part of the total public land resource management. To fully protect these resources, BLM will develop policies and plan elements to address the need to protect the natural resources, while managing the human activities.

- The Planning Area provides a variety of landscapes for many activities and land uses. Recreation is a major use of these lands including hunting, backpacking, horseback riding, mountain bike use, sight-seeing pleasure driving, target shooting, and off-highway vehicle use by motorcycles, all-terrain vehicles, and full size four-wheel-drive vehicles. Policy and plan elements will be developed for the RMP to address current recreational activities and develop a balance of recreation and conservation. Public scoping questions and comments regarding access, indirect effects, and recreation will be addressed through this issue.

- The BLM is committed to work with other agencies and communities in the managing the Planning Area. Coordination with federal and state agencies, which have jurisdiction over resources within or related to the Planning Area, such as California States Parks Department, California Department of Fish and Game, and the Cleveland National Forest, is essential for the effective management of the Planning Area. Existing agreements with these agencies will be evaluated and modified as appropriate to ensure that BLM's new management objectives are incorporated in them. New agreements with other agencies and local governments will be also likely developed to address specific issues.

C. Issues Raised that will not be Addressed

These issues are outside the decision maker's authority and the scope of this project. Issues were raised that involved Congressional action or regulating activities on private land.

- One respondent stated that Wilderness Study Areas (WSA) should be made into wilderness areas. Only Congress can release or make a WSA into a Wilderness Area. BLM can only recommend an action when asked by Congress.

- Another respondent stated that wind energy development should be regulated on private land. BLM has no authority to do this.

APPENDIX B

LAWS, REGULATIONS, AND EXECUTIVE ORDERS

BLM must comply with the mandate and intent of the following Federal laws (and any applicable regulations) and EOs that apply to BLM-administered lands and resources in the Planning Area.

Air

Clean Air Act 42 U.S.C. 7401 et seq.

The primary objective of the CAA is to establish federal standards for various pollutants from both stationary and mobile sources and to provide for the regulation of polluting emissions via state implementation plans. In addition, the amendments are designed to prevent significant deterioration in certain areas where air quality exceeds national standards and to provide for improved air quality in areas which do not meet federal standards ("non-attainment" areas).

Federal facilities are required to comply with air quality standards to the same extent as non-governmental entities. Part C of the 1977 amendments stipulates requirements to prevent significant deterioration of air quality and, in particular, to preserve air quality in national parks, national wilderness areas, national monuments, and national seashores.

The amendments establish Class I, II, and III areas, where emissions of particulate matter and sulfur dioxide are to be restricted. The restrictions are most severe in Class I areas and are progressively more lenient in Class II and III areas.

Mandatory Class I federal lands include all national wilderness areas exceeding 500 acres. Federal land managers are charged with direct responsibility to protect the air quality and related values (including visibility) of Class I lands and to consider, in consultation with EPA, whether proposed facilities will have an adverse impact on these values.

American Indians

A. American Indian Religious Freedom Act — 42 U.S.C. 1996

This act recognizes that freedom of religion for all people is an inherent right and that traditional American Indian religions are an indispensable and irreplaceable part of Indian life. Establishing federal policy to protect and preserve the inherent right of religions freedom for Native Americans, this act requires federal agencies evaluate their actions and policies to determine, if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. Such evaluations are made in consultation with native traditional religious leaders.

B. Native American Graves Protection & Repatriation Act — 25 U.S.C. 3001-13

This act establishes requirements for the treatment of Native American human remains and sacred or cultural objects found on federal land.

In any case where such items can be associated with specific tribes or groups of tribes, the agency is required to provide notice of the item in question to the tribe or tribes. Upon request, each agency is required to return any such item to any lineal descendant or specific tribe with whom such item is associated. There are various additional requirements imposed upon the Secretary.

C. Indian Sacred Sites — EO 13007, May 24, 1996

In managing federal lands, agencies shall, to the extent practicable, permitted by law, and not inconsistent with agency functions, accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites. Agencies are to avoid adversely affecting the physical integrity of these sites, maintaining the confidentiality of such sites, and informing tribes of any proposed actions that could restrict access to, ceremonial use of, or adversely affect the physical integrity of, sacred sites.

D. Consultation & Coordination with Indian Tribal Governments — EO 13175, November 6, 2000

In formulating or implementing policies that have tribal implications, agencies shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments.

Antiquities/Archaeological

A. Antiquities Act

16 U.S.C. §§431-433

This act authorizes the President to designate as National Monuments objects or areas of historic or scientific interest on lands owned or controlled by the United States. The act required that a permit be obtained for examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of the Interior, Agriculture, and Army, and provided penalties for violations.

B. Historic Sites, Buildings and Antiquities Act

16 U.S.C. 461-462, 464-467

This act declared it a national policy to preserve historic sites and objects of national significance. It provided procedures for designation, acquisition, administration, and protection of such sites. Among other things, National Historic and Natural Landmarks are designated under authority of this act.

C. Archaeological Resources Protection Act

16 U.S.C. 470aa - 470ll

This act largely supplanted the resource protection provisions of the Antiquities Act for archaeological items. It established detailed requirements for issuance of permits for any excavation for or removal of archaeological resources from federal or Indian lands. It also established civil and criminal penalties for the unauthorized excavation, removal, or damage of any such resources; for any trafficking in such resources removed from federal or Indian land in violation of any provision of federal law; and for interstate and foreign commerce in such resources acquired, transported or received in violation of any state or local law.

D. Archeological and Historic Preservation Act

16 U.S.C. 469-469c

This law was enacted to carry out the policy established by the Historic Sites Act, directed federal agencies to notify the Secretary of the Interior whenever they find a federal or federally assisted, licensed or permitted project may cause loss or destruction of significant scientific, prehistoric, or archaeological data. The act authorized use of

appropriated, donated, and/or transferred funds for the recovery, protection, and preservation of such data.

E. National Historic Preservation Act — 16 U.S.C. 470 et seq.

This act provided for preservation of significant historical features (buildings, objects, and sites) through a grant-in-aid program to the states. It established a NRHP and a program of matching grants under the existing National Trust for Historic Preservation. The act established an Advisory Council on Historic Preservation, which was made a permanent independent agency in1976. Federal agencies are directed to take into account the effects of their actions on items or sites listed or eligible for listing in the NRHP.

F. Protection & Enhancement of Cultural Environment — EO 11593, May 13, 1971

Federal agencies are to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Agencies are to locate and evaluate all federal sites under their jurisdiction or control which may qualify for listing on the NRHP. For sites that qualify, agencies are to initiate procedures to maintain such federally owned sites. The Advisory Council on Historic Preservation must be allowed to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined in consultation with the SHPO.

G. Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations — EO 12898, February 11, 1994

Agencies shall make achieving environmental justice part of their mission by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations.

H. Preserve America — EO 13287, March 3, 2003

Agencies shall provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the federal government.

Each agency is to provide and maintain an assessment of the status of its inventory of historic properties and their ability to contribute to community economic development initiatives.

Where consistent with its mission and governing authorities, and where appropriate, agencies shall

- seek partnerships with state and local governments, Indian tribes, and the private sector to promote the unique cultural heritage of communities and of the nation and to realize the economic benefit that these properties can provide; and
- cooperate with communities to increase opportunities for public benefit from, and access to, federally owned historic properties.

Environment—Generally

A. National Environmental Policy Act 42 U.S.C. 4321 et seq.

NEPA encourages productive and enjoyable harmony between man and his environment; promotes efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; and enriches the understanding of the ecological systems and natural resources important to the nation

NEPA requires that for recommendations or reports on proposals for legislation and other major actions significantly affecting the quality of the human environment that federal agencies through a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment include a detailed statement by the responsible official on -

- the environmental impact of the proposed action;
- any adverse environmental effects which cannot be avoided should the proposal be implemented;
- alternatives to the Proposed Action;

- the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
- any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented.

B. Protection & Enhancement of Environmental Quality

EO 11514, Mar 5, 1970

Federal agencies shall initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals of protecting and enhancing the quality of the nation's environment to sustain and enrich human life.

Agencies should monitor, evaluate, and control on a continuing basis their agencies' activities so as to protect and enhance the quality of the environment. Such activities shall include those directed to controlling pollution and enhancing the environment and those designed to accomplish other program objectives which may affect the quality of the environment.

Agencies shall ensure the fullest practicable provision of timely public information and understanding of federal plans and programs with environmental impact in order to obtain the views of interested parties. This will include, whenever appropriate, provision for public hearings and shall provide the public with relevant information, including information on alternative courses of action.

C. Environmental Quality Improvement Act 42 U.S.C. 4371 et seq.

Ensures that each federal agency conducting or supporting public works activities affecting the environment implements policies established under existing law principally by establishing the Office of Environmental Quality to provide assistance to, and oversight of, federal agencies.

D. Federal Land Policy and Management Act

43 U.S.C. 1701 et seq.

The "Organic Act" for the BLM, this act provides for the inventory and planning of the public lands to ensure that these lands are managed in accordance with the intent of Congress under the principles of multiple use and sustained yield. The lands are to be managed in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values that,

where appropriate, will preserve and protect certain public lands in their natural conditions, provide food and habitat for fish and wildlife and domestic animals, and provide for outdoor recreation and human occupancy and use by encouraging collaboration and public participation throughout the planning process.

In addition, the public lands must be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber from the public lands.

Many old laws were repealed, but rights obtained under those laws are protected.

New authority for the disposal of appropriate public lands through sale or exchange is provided.

Right-of-way granting procedures are provided for both the BLM and the USFS.

The regulations contained in 43 CFR Part 1600 govern the BLM planning process.

Fire

Timber Protection Act 16 U.S.C. 594

This act authorizes the Secretary of the Interior to protect timber on lands under the DOI's jurisdiction from fire, disease, and insects

Fish & Wildlife

A. Animal Damage Control Act 7 U.S.C. 426-426c

This act, as amended, gives the Secretary of Agriculture broad authority for investigation, demonstrations, and control of mammalian predators, rodents, and birds.

B. Bald Eagle Protection Act 16 U.S.C. 668-668d

This law provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds.

C. Endangered Species Act 16 U.S.C. 1532 et seq.

This act provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, both through federal action and by encouraging the establishment of state programs. The act:

- authorizes the determination and listing of species as endangered and threatened;
- prohibits unauthorized taking, possession, sale, and transport of endangered species;
- provides authority to acquire land for the conservation of listed species, using land and water conservation funds;
- authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for endangered and threatened wildlife and plants;
- authorizes the assessment of civil and criminal penalties for violating the act or regulations; and
- authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the act or any regulation issued thereunder.

Section 7 of the Endangered Species Act requires federal agencies to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

D. Neotropical Migratory Bird Conservation Act P.L. 106-247

This act provides grants to countries in Latin America and the Caribbean, and the United States for the conservation of neotropical migratory birds that winter south of the border and summer in North America. The law encourages habitat protection, education, researching, monitoring, and capacity building to provide for the long-term protection of neotropical migratory birds.

E. Conservation of Migratory Birds EO 13186, January 10, 2001

Under the principals of a MOU with the USFWS, each agency shall, to the extent permitted by law, subject to the availability of appropriations, within administration budgetary limits, and in harmony with agency missions, among others:

- support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance the habitat of migratory birds, as practicable;
- prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable;
- design migratory bird habitat and population conservation principles, measures, and practices into agency plans and planning processes as practicable;
- within established authorities and in conjunction with the adoption, amendment, or revision of agency management plans and guidance, ensure that agency plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts; and
- ensure that environmental analyses of actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds.

F. Recreational Fisheries EO 12962, June 7, 1995

Agencies shall improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by such activities as:

- developing and encouraging partnerships between governments and the private sector to advance aquatic resource conservation and enhance recreational fishing opportunities;
- identifying recreational fishing opportunities that are limited by water quality and habitat degradation and promoting restoration to support viable, healthy, and, where feasible, self-sustaining recreational fisheries;
- fostering sound aquatic conservation and restoration endeavors to benefit recreational fisheries;
- supporting outreach programs designed to stimulate angler participation in the conservation and restoration of aquatic systems, and implementing laws under their

purview in a manner that will conserve, restore, and enhance aquatic systems that support recreational fisheries.

G. Exotic Organisms

EO 11987, May 24, 1977

Agencies, to the extent permitted by law, are to:

- restrict the introduction of exotic species into the natural ecosystems on lands and waters owned or leased by the United States;
- encourage states, local governments, and private citizens to prevent the introduction of exotic species into natural ecosystems of the U.S.;
- restrict the importation and introduction of exotic species into any natural U.S. ecosystems as a result of activities they undertake, fund, or authorize; and
- restrict the use of federal funds, programs, or authorities to export native species for introduction into ecosystems outside the U.S. where they do not occur naturally.

Forests

A. Forest Service Authorities

Some of the laws governing the operations and activities of the USFS are

- The National Forest Management Act of 1976, which extensively amended the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1600 et seq.), and which constitutes the "organic act" for the USFS.
- The Multiple Use Sustained Yield Act of 1960 (16 U.S.C. 528 et seq.) established purposes for the Forest System, including outdoor recreation, range, timber, watershed and fish and wildlife.
- The Cooperative Forestry Assistance Act (16 U.S.C. 2100 et seq.), authorizes the Secretary of Agriculture to cooperate on forest management issues with non-federal forest lands.

Various other laws and authorities for the USFS are codified at 16 U.S.C. Sections 471 through 573.

B. *Materials Sales Act* 30 U.S.C. 601

Authorizes the sale or free use of vegetative materials and mineral material (so-called common varieties) not otherwise authorized by other law.

C. *Timber Protection Act* 16 U.S.C. 594

This act authorizes the Secretary of the Interior to protect timber on lands under the Department of the Interior's jurisdiction from fire, disease, and insects

Land

A. *Desert Land Act* 43 U.S.C. 321 et seq.

Allows entry of up to 320 acres of desert land of which the entryman intends to reclaim the land for agricultural purposes within 3 years. Lands must be determined to be available and classified pursuant to 43 U.S.C. 315f before such an entry can be allowed.

B. *Sales of Public Lands* 43 U.S.C. 1713

Allows the sale of public lands found suitable for use other than grazing or the production of forage crops that also

- is difficult and uneconomic to manage; or
- the tract was acquired for a purpose for which the tract is no longer necessary, or
- disposal of the tract will serve important public objectives

C. *Exchanges of Public Land for Non-federal Land* 43 U.S.C. 1716

Allows the exchange of Public Land, or interests therein, for non-federal lands where it is determined (the Secretary finds) that the public interest will be well served by making the exchange. Values of the disposed and acquired lands must be equal in value.

D. Federal Land Exchange Facilitation Act — 43 U.S.C. 1716, August 20, 1988

Basically amends the exchange provisions of FLPMA to streamline and facilitate land exchange procedures and to expedite exchanges.

E. Federal Land Transaction Facilitation Act — PL 106-248, July 25, 2000

Provides a more expeditious process for disposal and acquisition of land to facilitate a more effective configuration of land ownership patterns.

Funds from the sale of specified land is deposited in a special fund available to acquire land and to process additional land sales.

Rights-of-Way

With the passage of FLPMA in 1976, BLM was left with existing ROWs (Pre-FLPMA Rights-of-Way) and three basic authorities under which Public Lands may be used or dedicated to various types of ROWs.

A. Pre-FLPMA ROWs — 43 U.S.C. 1701 Savings Provision

Various laws provided for ROWs ranging from ditches and canals through communications to railroads. Some are indefinite in term and will remain under the pre-FLPMA authority until abandoned. Others have definite terms and will come under current authorities if amended or renewed.

B. Oil and Gas Pipeline ROWs — 30 U.S.C. 185

The Mineral Leasing Act of 1920, as amended, contains provisions for the issuance of ROWs for the transportation of natural gas and oil or products derived therefrom. The term of the ROW is limited to 30 years but is renewable. Where an application involves land administered by two or more federal agencies, the Secretary of the Interior has delegated the decision making to the BLM. Federal agencies are not eligible under this authority.

C. FLPMA ROWs — 43 U.S.C. 1761 et seq.

Title V of FLPMA gives the BLM authority to authorize most any type of ROW use, other than oil and gas ROWs, on the public lands. The term of the ROW is determined by need and conditions; it may be indefinite but usually is around 30 years. ROWs are renewable.

D. Federal Aid Highways — 23 U.S.C. 317

Where Federal Aid Highways are involved, the Secretary of Transportation may appropriate federal land for such highway projects. Applications or requests are usually filed by the State Department of Transportation through the local office of the FHWA. If BLM does not disapprove such a request within 120 days, the appropriation is automatic. When BLM issues a letter "consenting" to the appropriation, reasonable terms and conditions may be included.

E. Energy Supply, Distribution, or Use — EO 13211, May 18, 2001

This order requires an impact and alternative analysis for any proposed rule that would have an adverse impact on energy supply, distribution, or use.

F. Action to Expedite Energy-Related Projects — EO 13212, May 18, 2001

For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate.

G. Environmental Stewardship and Transportation Infrastructure Project Reviews — EO 13274, September 18, 2002

Agencies shall take appropriate actions, to the extent consistent with applicable law and available resources, to promote environmental stewardship in the nation's transportation system and expedite environmental reviews of high-priority transportation infrastructure projects.

For transportation infrastructure projects, agencies shall, in support of the Department of Transportation, formulate and implement administrative, policy, and procedural

mechanisms that enable each agency required by law to conduct environmental reviews with respect to such projects to ensure completion of such reviews in a timely and environmentally responsible manner.

H. Off-Road Vehicles

EO 11644, February 8, 1972
EO 11989, May 24, 1977

These orders require public land managers "to establish policies and procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands."

Mining & Mineral Leasing

A. General Mining Law

30 U.S.C. 21 et seq.

This authority sets forth rules and procedures for the exploration, location, and patenting of lode, placer, and mill site mining claims. Claimants must file notice of the original claim with the BLM as well as annual notice of intention to hold, affidavit of assessment work, or similar notice.

B. Mining and Mineral Policy Act

30 U.S.C. 21a

This act expressed the national policy to foster and encourage private enterprise in

- the development of economically sound and stable domestic mining, mineral, metal, and mineral reclamation industries,
- the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs,
- mining, mineral, and metallurgical research, including the use and recycling of scrap to promote the wise and efficient use of our natural and reclaimable mineral resources, and
- the study and development of methods for the disposal, control, and reclamation of mineral waste products, and the reclamation of mined land, so as to lessen any adverse impact of mineral extraction and processing upon the physical environment that may result from mining or mineral activities.

C. Stock Raising Homestead Act — 43 U.S.C. 291-299

Patents issued under this authority reserved minerals to the United States as well as the right to prospect for, mine, and remove said minerals. Certain conditions exist to protect the patentee's improvements.

D. Mineral Leasing Act — 30 U.S.C. 181 et seq.

This act authorizes and governs leasing of public lands for development of deposits of coal, oil, gas and other hydrocarbons, sulphur, phosphate, potassium, and sodium.

E. Federal Coal Leasing Amendments Act — 30 U.S.C. §201

This act made major changes in the way coal leases tracts are established, economic and environmental considerations, sale/leasing procedures, and penalties for violations.

F. Surface Mining Control and Reclamation Act — 30 U.S.C. 1201 et seq.

This act establishes a program for the regulation of surface mining activities and the reclamation of coal-mined lands, under the administration of the Office of Surface Mining, Reclamation and Enforcement, in the DOI.

The law sets forth minimum uniform requirements for all coal surface mining on federal and state lands, including exploration activities and the surface effects of underground mining. Mine operators are required to minimize disturbances and adverse impact on fish, wildlife, and related environmental values and achieve enhancement of such resources where practicable. Restoration of land and water resources is ranked as a priority in reclamation planning.

G. Geothermal Steam Act — 30 U.S.C. 1001 et seq.

This act authorizes and governs the lease of geothermal steam and related resources on public lands

H. Mineral Leasing Act for Acquired Lands — 30 U.S.C. 351 et seq.

This act authorizes and governs mineral leasing on acquired lands.

I. Materials Sales Act 30 U.S.C. 601

Authorizes the sale or free use of vegetative materials and mineral material (so-called common varieties) not otherwise authorized by other law.

Pollution—Generally

A. Resource Conservation and Recovery Act 42 U.S.C. 6901 et seq.

This act regulates the treatment, transportation, storage, and disposal of solid and hazardous wastes. The Service is required to comply with standards for wastes generated at its facilities. The key provisions include:

Identification and listing of hazardous waste and standards applicable to hazardous waste—requires reporting of hazardous waste, permitting for storage, transport, and disposal, and it includes provisions for oil recycling and federal hazardous waste facilities inventories.

- Management for solid waste, including landfills.
- Applicability of federal, state, and local laws to federal agencies.
- Management, replacement, and monitoring of underground storage tanks.

B. Comprehensive Environmental Response Compensation and Liability Act (Superfund) 42 U.S.C. 9601 et seq.

The "Superfund" statute was enacted in 1980; major amendments were enacted in 1983 and in 1986. The 1980 statute authorized, through 1985, the collection of taxes on crude oil and petroleum products, certain chemicals, and hazardous wastes. It also established liability to the U.S. Government for damage to natural resources over which the U.S. has sovereign rights and requires the President to designate federal officials to act as trustees for natural resources. Use of Superfund monies to conduct natural resource damage assessments was provided.

The 1983 amendments established a comprehensive system to react to releases of hazardous substances and to determine liability and compensation for those affected.

The President is authorized to notify federal and state natural resource trustees of potential damages to natural resources and to coordinate related assessments.

Amendments enacted in 1986 (known as the Superfund Amendment and Reauthorization Act, or SARA), among others, 1) added effects on natural resources as a criterion for determining facilities to be placed on the National Priorities List; 2) mandated the designation of federal officials to act as trustees for natural resources and to assess damages and injury to, as well as destruction of, or loss of, natural resources; 3) stipulated that Superfund monies may only be used for natural resource damage claims if all administrative and judicial remedies to recover costs from liable parties have been exhausted; 4) clarified that federal facilities are subject to the same cleanup requirements and liability standards as non-governmental entities, and 5) eliminated the authorization for use of Superfund monies to conduct damage assessments.

C. *Federal Environmental Pesticide Control Act* 7 U.S.C. §136

This act, in simple terms, provided for a program for controlling the sale, distribution, and application of pesticides through an administrative registration process and for classifying pesticides for "general" or "restricted" use. "Restricted" pesticides may only be applied by or under the direct supervision of a certified applicator

D. *Toxic Substances Control Act* 15 U.S.C. 2601 et seq.

This act authorized the EPA to obtain data from industry on health and environmental effects of chemical substances and mixtures. If unreasonable risk or injury may occur, EPA may regulate, limit, or prohibit the manufacture, processing, commercial distribution, use, and disposal of such chemicals and mixtures.

E. *Pollution Prevention Act* 42 U.S.C. 13101 et seq.

This act encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control.

F. *Federal Compliance with Right to Know Laws and Pollution Prevention Requirements* EO 12856, August 3, 1993

Requires agencies to comply with the provisions of the Pollution Prevention Act and to assure all necessary actions are taken to prevent pollution. The Council on

Environmental Quality provided guidance on pollution prevention in the Federal Register of January 29, 1993.

G. *Solid Waste Disposal Act* 42 U.S.C. 6901 et seq.

Establishes a national policy that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment. It directs the EPA to provide guidelines for the treatment, handling, and storage of such wastes.

Rangelands

A. *Taylor Grazing Act* 43 U.S.C. 215 et seq.

The TGA was the federal government's first effort to regulate grazing on federal lands. Under the act grazing districts were established of vacant, unreserved, public domain lands which were chiefly valuable for grazing and raising forage crops. Grazing is regulated through leases or licenses for which a fee is paid. Grazing Administration Regulations (43 CFR 4100) provide for the development of state Standards for Rangeland Health and Guideline for Grazing Management. Such standards and guidelines are approved through the BLM's planning and NEPA processes.

The TGA also eliminated settlement on the public domain and provided for the classification and disposal of public lands more valuable for uses other than grazing or the production of forage crops.

B. *Public Rangelands Improvement Act* 43 U.S.C. 1901 et seq.

This act was instituted to improve public rangeland conditions in the 16 contiguous western states on which there is, or which are capable of, domestic livestock grazing. Rangeland quality is determined by soil quality, forage values, wildlife habitat, watershed and plant communities, the current state of vegetation in a site in relation to its potential, and the relative degree to which the kinds, proportions, and amounts of vegetation in a plant community resemble the desired plant community.

C. Noxious Plant Control Act — 43 U.S.C. §§1241-43

Authorizes agencies to allow and pay for state authorities to enter federal land for the control/destruction of noxious plants.

D. Federal Noxious Weed Act — 7 U.S.C. 2801 et seq.

This act provides the Secretary of Agriculture authority to designate plants as noxious weeds by regulation and prohibits the movement of all such weeds in interstate or foreign commerce except under permit. The Secretary of Agriculture also has authority to inspect, seize, and destroy products and to quarantine areas, if necessary, to prevent the spread of such weeds. The Secretary of Agriculture is also authorized to cooperate with other federal, state, and local agencies, farmers associations, and private individuals in measures to control, eradicate, or prevent or retard the spread of such weeds.

Each federal land-managing agency is to designate an office or person adequately trained in managing undesirable plant species to develop and coordinate a program to control such plants on the agency's land.

E. Invasive Species — EO 13112, February 3, 1999

The purpose is to prevent the introduction of invasive species and provide for their control, as well as to minimize the economic, ecological, and human health impacts that invasive species cause.

Agencies whose actions may affect the status of invasive species shall: (1) identify such actions; (2) use relevant programs and authorities to prevent, control, monitor, and research such species; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere

F. Wild Horses and Burros Act — 16 U.S.C. 1331-1340

This act provides for protection of wild, free-roaming horses and burros. It directs the BLM of the DOI and USFS of the Department of Agriculture to manage such animals on public lands under their jurisdiction.

Recreation

Recreation and Public Purposes Act 43 U.S.C. 869 et seq.

This act provides for the lease or disposal of public lands and certain withdrawn or reserved lands to state and local governments, and qualified non-profit organizations to be used for recreational or public purposes. Prices charged for the use or acquisition are normally less than market value of the specific lands. Conditions are imposed in patents, and title may revert to the United States for cause.

Rivers and Streams

A. Wild & Scenic Rivers Act 16 U.S.C. 1271 et seq.

This act establishes a National Wild and Scenic Rivers System and prescribes the methods and standards through which additional rivers may be identified and added to the system.

B. American Heritage Rivers EO 13061, September 11, 1997

This EO has three objectives: natural resource and environmental protection, economic revitalization, and historic and cultural preservation. Agencies, to the extent permitted by law and consistent with their missions and resources, shall coordinate federal plans, functions, programs, and resources to preserve, protect, and restore rivers and their associated resources important to our history, culture, and natural heritage.

Trails

National Trails System Act 16 U.S.C. 1241-1249

This act provides for establishment of National Recreation, National Scenic, and National Historic Trails.

National Recreation Trails may be established by the Secretary of the Interior or Agriculture on land wholly or partly within their jurisdiction with the consent of the involved state(s) and other land managing agencies, if any. National Scenic and National Historic Trails may only be designated by an Act of Congress.

Water—Generally

A. Water Resources Planning Act 42 U.S.C. 1962a - 1962(a)(4)(e)

This act established a Water Resources Council to be composed of Cabinet representatives, including the Secretary of the Interior. It also established River Basin Commissions and stipulated their duties and authorities.

The council was empowered to maintain a continuing assessment of the adequacy of water supplies in each region of the U.S. In addition, the council was mandated to establish principles and standards for federal participants in the preparation of river basin plans and in evaluating federal water projects. Upon receipt of a river basin plan, the council was required to review the plan with respect to agricultural, urban, energy, industrial, recreational, and fish and wildlife needs.

B. Water Rights 43 U.S.C. 666

This act waives the sovereign immunity of the United States where there is a suit designed to establish the rights to a river or other source of water, or the administration of such rights, and the United States appears to own or be in the process of acquiring rights to any such water. (The effect is to permit state courts to adjudicate federal water rights claims under state law.)

C. Federal Water Pollution Control Act 33 U.S.C. 1251 et seq.

The original 1948 statute, the Water Pollution Control Act, authorized the Surgeon General of the Public Health Service in cooperation with other federal, state, and local entities to prepare comprehensive programs for eliminating or reducing the pollution of interstate waters and tributaries and improving the sanitary condition of surface and underground waters. During the development of such plans, due regard was to be given to improvements necessary to conserve waters for public water supplies, propagation of fish and aquatic life, recreational purposes, and agricultural and industrial uses. The original statute also authorized the Federal Works Administrator to assist states, municipalities, and interstate agencies in constructing treatment plants to prevent discharges of inadequately treated sewage and other wastes into interstate waters or tributaries.

Since 1948, the original statute has been amended extensively either to authorize additional water quality programs, standards, and procedures to govern allowable discharges, funding for construction grants, or general program funding. Amendments in

other years provided for continued authority to conduct program activities or administrative changes to related activities.

D. Clean Water Act

PL 95-217

The CWA extensively amended the Federal Water Pollution Act. Of particular significance were the following provisions:

- Development of a BMP Program as part of the state areawide planning program
- Authority for the USACE to issue general permits on a state, regional, or national basis for any category of activities which are similar in nature will cause only minimal environmental effects when performed separately and will have only minimal cumulative adverse impact on the environment
- Exemption of various activities from the dredge and fill prohibition including normal farming, silviculture, and ranching activities (33 U.S.C. 1344(f))
- Procedures for state assumption of the regulatory program.

The CWA requires the EPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by EPA or the appropriate state, if it has assumed responsibility. Section 404 of the CWA establishes a federal program to regulate the discharge of dredged and fill material into waters of the United States. Section 404 permits are issued by the USACE.

E. Safe Drinking Water Act

42 U.S.C. §300h

This act establishes a program to monitor and increase the safety of all commercially and publically supplied drinking water. Amended in 1986 to require the EPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Control Technolocy (BACT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants, and turbidity. Current federal MCLs, MCLGs, and BACTs in public drinking water supplies were set in 1996.

F. Water Quality Act — PL 100-4

This act provided the most recent series of amendments to the Federal Water Pollution Act. Provisions included:

- Requirement that states develop strategies for toxics cleanup in waters where the application of BACT discharge standards is not sufficient to meet state water quality standards and support public health;
- Increase in the penalties for violations of Section 404 permits; and
- Requirement that EPA study and monitor the water quality effects attributable to the impoundment of water by dams.

G. Flood Control Act — 16 U.S.C. 460d and other

This act, as amended and supplemented by other flood control acts and river and harbor acts, authorizes various USACE water development projects. This statute expressed congressional intent to limit the authorization and construction of navigation, flood control, and other water projects to those having significant benefits for navigation and which could be operated consistently with other river uses. The authority to construct, operate, and maintain public park and recreational facilities in reservoir areas was also provided.

H. Oil Pollution Act — 33 U.S.C. 2701 et seq.

This act established new requirements and extensively amended the Federal Water Pollution Control Act to provide enhanced capabilities for oil spill response and natural resource damage assessment

Among other provisions are that federal trustees shall assess natural resource damages for natural resources under their trusteeship. Federal trustees may, upon request from an Indian tribe or state, assess damages to natural resources for them as well. Trustees shall develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of natural resources under their trusteeship.

I. Floodplain Management — EO 11988, May 24, 1977

The purpose of this EO is to prevent agencies from contributing to the "adverse impacts associated with the occupancy and modification of floodplains" and the "direct or indirect support of floodplain development."

In the course of fulfilling their respective authorities, agencies "shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Before proposing, conducting, supporting or allowing an action in a floodplain, each agency is to determine if planned activities will affect the floodplain and evaluate the potential effects of the intended actions on its functions. Agencies shall avoid siting development in a floodplain "to avoid adverse effects and incompatible development in the floodplains,"

J. Protection of Wetlands — EO 11990, May 24, 1977

Similar to Floodplain Management, agencies are directed to consider alternatives to avoid adverse effects and incompatible developments in areas of wetlands. New construction is to be avoided if possible.

K. Colorado River Storage Project Act — 43 U.S.C. 620

This act authorized the Secretary of the Interior to construct a variety of dams, power plants, reservoirs, and related works. The act also authorized and directed the Secretary of the Interior, in connection with the development of the Colorado River Storage Project and participating projects, to investigate, plan, construct, and operate facilities to mitigate losses of and improve conditions for fish and wildlife and public recreational facilities. The act provided authority to acquire lands and to lease or convey lands and facilities to state and other agencies.

L. Colorado River Basin Project Act — 43 U.S.C. 1501-1556

This act provided a program for the comprehensive development of the water resources of the Colorado River Basin, and directed the Secretary of the Interior to develop, after consultation with affected states and appropriate federal agencies, a regional water plan to serve as the framework under which projects in the Colorado River Basin may be coordinated and constructed.

M. Colorado River Floodway Protection Act — 100 Stat. 1129

This act established a Colorado River Floodway Area, within which are prohibited 1) all new federal funding or financial assistance for any purpose (except for listed exceptions), 2) federal flood insurance for new construction or substantial improvements begun six months after enactment on existing structures, and 3) the granting of new federal leases (unless the Secretary of the Interior determines that the purpose is consistent with the act).

N. Colorado River Basin Salinity Control Act — 43 U.S.C. §§1571-1599

This act authorized the construction of facilities necessary to meet the terms of the 1973 Salinity Agreement with Mexico.

Wilderness

A. Wilderness Act — 16 U.S.C. 1131 et seq.

This act established a National Wilderness System of areas to be designated by Congress. It directed the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within National Wildlife Refuge and National Park Systems and to recommend to the President the suitability of each such area or island for inclusion in the National Wilderness Preservation System, with final decisions made by Congress. The Secretary of Agriculture was directed to study and recommend suitable areas in the National Forest System.

The act provides criteria for determining suitability and establishes restrictions on activities that can be undertaken on a designated area. Criteria set by Congress within this act states that wilderness areas have the following characteristics: (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and confined types of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. The Wilderness Act also set the accepted uses of designated WAs and what uses are prohibited. The act sets special provisions for an

agency's continuing management of existing or grandfathered rights such as mining and grazing and other agency mission related activities.

B. The California Desert Protection Act P.L. 103-433

This act designated lands in the California Desert as wilderness, established Death Valley and Joshua Tree National Parks, and established the Mojave National Preserve. Each WA designated would be administered by BLM in accordance with the provisions of the Wilderness Act, except that any reference to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this title.

Other

A. Base Closure and Realignment Act Title II of P.L. 100-526

The act establishes a preference for the sale of land made surplus as a result of base closures or reductions, with the funds to be utilized for the costs of the closures, or for transfer of the land to a local redevelopment authority. It does not require such sales, however, nor does it repeal the provisions of law permitting the no- or reduced-cost transfer of such land to federal agencies or the states for conservation purposes.

B. Cave Resources Protection Act 16 U.S.C. 4301 et seq.

This act established requirements for the management and protection of caves and their resources on federal lands, including allowing the land managing agencies to withhold the location of caves from the public and requiring permits for any removal or collecting activities in caves on federal lands.

C. Federal Power Act 16 U.S.C. §§791-828c

Established what is now the Federal Energy Regulatory Commission (FERC) studies water-related power development possibilities. Licenses and oversees the development of water power project on federal and non-federal lands. On federal land coordinates with agencies and for some agencies they may dictate conditions to be included in licenses.

The FERC also regulates interstate electric transmission lines and interstate oil and gas pipelines, and issues 'certificates of public convenience' for these interstate facilities.

D. Land and Water Conservation Fund 16 U.S.C. 460l - 460l-11

The fund is derived from various types of revenue (primarily Outer Continental Shelf oil monies) and appropriations from the fund may be used for 1) matching grants to states for outdoor recreation projects and 2) land acquisition for various federal agencies.

E. Federalism EO 13132, August 4, 1999

In formulating and implementing policies that have federalism implications, agencies shall be guided by the following principles:

- Federalism is rooted in the belief that issues that are not national in scope or significance are most appropriately addressed by the level of government closest to the people.
- The people of the states created the national government and delegated to it enumerated governmental powers. All other sovereign powers, save those expressly prohibited the states by the Constitution, are reserved to the states or to the people.
- The framers of the Constitution recognized that the states possess unique authorities, qualities, and abilities to meet the needs of the people and should function as laboratories of democracy.
- The nature of our constitutional system encourages a healthy diversity in the public policies adopted by the people of the several states according to their own conditions, needs, and desires. One-size-fits-all approaches to public policy problems can inhibit the creation of effective solutions to those problems.
- Policies of the national government should recognize the responsibility of—and should encourage opportunities for—individuals, families, neighborhoods, local governments, and private associations to achieve their personal, social, and economic objectives through cooperative effort.
- The national government should be deferential to the states when taking action that affects the policymaking discretion of the states and should act only with the greatest caution where state or local governments have identified uncertainties regarding the constitutional or statutory authority of the national government.

F. Takings

EO 12630, March 15, 1988

The Fifth Amendment of the United States Constitution provides that private property shall not be taken for public use without just compensation. Government historically has used the formal exercise of the power of eminent domain, which provides orderly processes for paying just compensation to acquire private property for public use. Recent Supreme Court decisions, however, in reaffirming the fundamental protection of private property rights provided by the Fifth Amendment and in assessing the nature of governmental actions that have an impact on constitutionally protected property rights, have also reaffirmed that governmental actions that do not formally invoke the condemnation power, including regulations, may result in a taking for which just compensation is required.

Agencies shall evaluate carefully the effect of their actions on constitutionally protected property rights to prevent unnecessary takings and should account in decision making for those takings that are necessitated by statutory mandate.

G. Regulatory Impact Analysis

EO 12866, September 30, 1993

Requires agencies to analyze the economic impact of proposed rules.

APPENDIX C

Federal Noxious Weed List (as of January 6, 2006)

Aquatic/Wetland

Azolla pinnata R. Brown (mosquito fern, water velvet)
Caulerpa taxifolia (Vahl) C. Agardh, Mediterranean strain (killer algae)
Eichornia azurea (Swartz) Kunth (anchored waterhyacinth, rooted waterhyacinth)
Hydrilla verticillata (Linnaeus f.) Royle (hydrilla)
Hygrophila polysperma T. Anderson (Miramar weed)
Ipomoea aquatica Forsskal (water-spinach, swamp morning-glory)
Lagarosiphon major (Ridley) Moss
Limnophila sessiliflora (Vahl) Blume (ambulia)
Melaleuca quinquenervia (Cav.) Blake (broadleaf paper bark tree).
Monochoria hastata (Linnaeus) Solms-Laubach
Monochoria vaginalis (Burman f.) C. Presl
Ottelia alismoides (L.) Pers.
Sagittaria sagittifolia Linnaeus (arrowhead)
Salvinia auriculata Aublet (giant salvinia)
Salvinia biloba Raddi (giant salvinia)
Salvinia herzogii de la Sota (giant salvinia)
Salvinia molesta D.S. Mitchell (giant salvinia)
Solanum tampicense Dunal (wetland nightshade)
Sparganium erectum Linnaeus (exotic bur-reed)

Parasitic

Aeginetia spp.
Alectra spp.
Cuscuta spp. (dodders), other than following species:
Cuscuta americana Linnaeus
Cuscuta applanata Engelmann
Cuscuta approximata Babington
Cuscuta attenuata Waterfall
Cuscuta boldinghii Urban
Cuscuta brachycalyx (Yuncker) Yuncker
Cuscuta californica Hooker & Arnott
Cuscuta campestris Yuncker
Cuscuta cassytoides Nees ex Engelmann
Cuscuta ceanothii Behr
Cuscuta cephalanthii Engelmann
Cuscuta compacta Jussieu
Cuscuta corylii Engelmann
Cuscuta cuspidata Engelmann
Cuscuta decipiens Yuncker
Cuscuta dentatasquamata Yuncker
Cuscuta denticulata Engelmann

Cuscuta epilinum Weihe
Cuscuta epithymum (Linnaeus) Linnaeus
Cuscuta erosa Yuncker
Cuscuta europaea Linnaeus
Cuscuta exalta Engelmann
Cuscuta fasciculata Yuncker
Cuscuta glabrior (Engelmann) Yuncker
Cuscuta globulosa Bentham
Cuscuta glomerata Choisy
Cuscuta gronovii Willdenow
Cuscuta harperi Small
Cuscuta howelliana Rubtzoff
Cuscuta indecora Choisy
Cuscuta jepsonii Yuncker
Cuscuta leptantha Engelmann
Cuscuta mitriformis Engelmann
Cuscuta nevadensis I. M. Johnston
Cuscuta obtusiflora Humboldt, Bonpland, & Kunth
Cuscuta occidentalis Millspaugh ex Mill & Nuttall
Cuscuta odontolepis Engelmann
Cuscuta pentagona Engelmann
Cuscuta planiflora Tenore
Cuscuta plattensis A. Nelson
Cuscuta polygonorum Engelmann
Cuscuta rostrata Shuttleworth ex Engelmann
Cuscuta runyonii Yuncker
Cuscuta salina Engelmann
Cuscuta sandwichiana Choisy
Cuscuta squamata Engelmann
Cuscuta suaveolens Seringe
Cuscuta suksdorfii Yuncker
Cuscuta tuberculata Brandegee
Cuscuta umbellata Humboldt, Bonpland, & Kunth
Cuscuta umbrosa Beyrich ex Hooker
Cuscuta vetchii Brandegee
Cuscuta warneri Yuncker
Orobanche spp. (broomrapes), other than the following species:
Orobanche bulbosa (Gray) G. Beck
Orobanche californica Schlechtendal & Chamisso
Orobanche cooperi (Gray) Heller
Orobanche corymbosa (Rydberg) Ferris
Orobanche dugesii (S. Watson) Munz
Orobanche fasciculata Nuttall
Orobanche ludoviciana Nuttall
Orobanche multicaulis Brandegee
Orobanche parishii (Jepson) Heckard

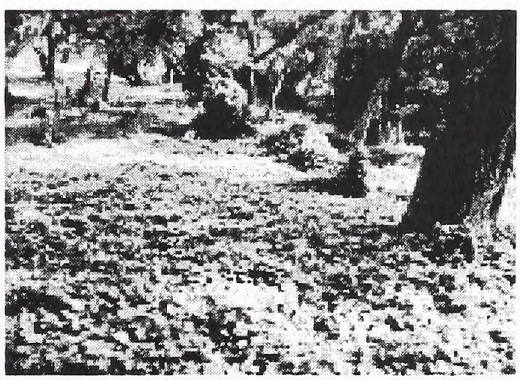
Orobanche pinorum Geyer ex Hooker
Orobanche uniflora Linnaeus
Orobanche valida Jepson
Orobanche vallicola (Jepson) Heckard
Striga spp. (witchweeds)

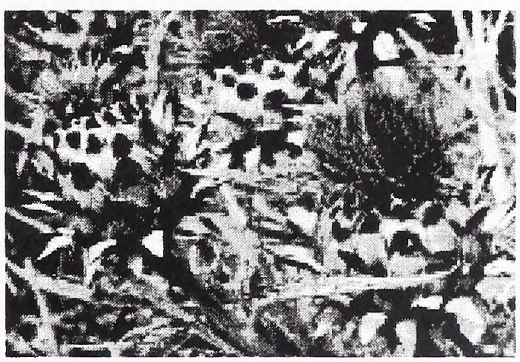
Terrestrial

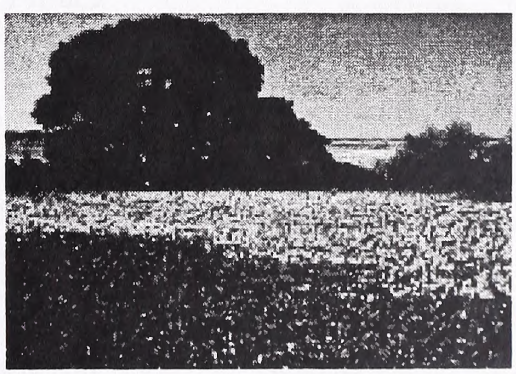
Ageratina adenophora (Sprengel) King & Robinson (crofton weed)
Alternanthera sessilis (Linnaeus) R. Brown ex de Candolle (sessile joyweed)
Asphodelus fistulosus Linnaeus (onionweed)
Avena sterilis Linnaeus (including Avena ludoviciana Durieu) (animated oat, wild oat)
Carthamus oxyacantha M. Bieberstein (wild safflower)
Chrysopogon aciculatus (Retzius) Trinius (pilipiliula)
Commelina benghalensis Linnaeus (Benghal dayflower)
Crupina vulgaris Cassini (common crupina)
Digitaria scalarum (Schweinfurth) Chiovenda (African couchgrass, fingergrass)
Digitaria velutina (Forsskal) Palisot de Beauvois (velvet fingergrass, annual conchgrass)
Drymaria arenarioides Humboldt & Bonpland ex Roemer & Schultes (lightning weed)
Emex australis Steinheil (three-cornered jack)
Emex spinosa (Linnaeus) Campdera (devil's thorn)
Galega officinalis Linnaeus (goatsrue)
Heracleum mantegazzianum Sommier & Levier (giant hogweed)
Homeria spp.
Imperata brasiliensis Trinius (Brazilian satintail)
Imperata cylindrica (Linnaeus) Raeuschel (cogongrass)
Ischaemum rugosum Salisbury (murainograss)
Leptochloa chinensis (Linnaeus) Nees (Asian sprangletop)
Lycium ferocissimum Miers (African boxthorn)
Melastoma malabathricum Linnaeus
Mikania cordata (Burman f.) B. L. Robinson (mile-a-minute)
Mikania micrantha Humboldt, Bonpland, & Kunth
Mimosa invisa Martius (giant sensitive plant)
Mimosa pigra Linneaus var. pigra (catclaw mimosa)
Nassella trichotoma (Nees) Hackel ex Arechavaleta (serrated tussock)
Opuntia aurantiaca Lindley (jointed prickly pear)
Oryza longistaminata A. Chevalier & Roehrich (red rice)
Oryza punctata Kotschy ex Steudel (red rice)
Oryza rufipogon Griffith (red rice)
Paspalum scrobiculatum Linnaeus (Kodo-millet)
Pennisetum clandestinum Hochstetter ex Chiovenda (kikuyugrass)
Pennisetum macrourum Trinius (African feathergrass)
Pennisetum pedicellatum Trinius (kyasumagrass)
Pennisetum polystachion (Linnaeus) Schultes (missiongrass, thin napiergrass)
Prosopis alpataco R. A. Philippi
Prosopis argentina Burkart

Prosopis articulata S. Watson
Prosopis burkartii Munoz
Prosopis caldenia Burkart
Prosopis calingastana Burkart
Prosopis campestris Griseback
Prosopis castellanosii Burkart
Prosopis denudans Bentham
Prosopis elata (Burkart) Burkart
Prosopis farcta (Solander ex Russell) Macbride
Prosopis ferox Grisebach
Prosopis fiebrigii Harms
Prosopis hassleri Harms
Prosopis humilis Gillies ex Hooker & Arnott
Prosopis kuntzei Harms
Prosopis pallida (Humboldt & Bonpland ex Willdenow) Humboldt, Bonpland, & Kunth
Prosopis palmeri S. Watson
Prosopis reptans Bentham var. reptans
Prosopis rojasiana Burkart
Prosopis ruizlealii Burkart
Prosopis ruscifolia Grisebach
Prosopis sericantha Gillies ex Hooker & Arnott
Prosopis strombulifera (Lamarck) Bentham
Prosopis torquata (Cavanilles ex Lagasca y Segura) de Candolle
Rottboellia cochinchinensis (Lour.) W. Clayton
Rubus fruticosus Linnaeus (complex) (wild blackberry)
Rubus moluccanus Linnaeus (wild raspberry)
Saccharum spontaneum Linnaeus (wild sugarcane)
Salsola vermiculata Linnaeus (wormleaf salsola)
Setaria pallide-fusca (Schumacher) Stapf & Hubbard (cattail grass)
Solanum torvum Swartz (turkeyberry)
Solanum viarum Dunal (tropical soda apple)
Spermacoce alata (Aublet) de Candolle
Tridax procumbens Linnaeus (coat buttons)
Urochloa panicoides Beauvois (liverseed grass)

CALIFORNIA Invasive Plant INVENTORY







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Cal-IPC

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Cal-IPC

The California Invasive Plant Council (Cal-IPC) formed as a non-profit organization in 1992 to address the growing ecological and economic impacts caused by invasive plants in California's wildlands. We promote research, restoration, and education in pursuit of this goal. Formerly known as the California Exotic Pest Plant Council, Cal-IPC is a member-driven organization with land managers, researchers, policy makers, and concerned citizens working together to protect the state's natural areas from invasive plants. For more information, visit our website at www.cal-ipc.org.

PROVIDING INPUT FOR FUTURE REVISIONS

If you have additional information to add to a plant assessment, please submit it to info@cal-ipc.org. The Inventory Review Committee will meet periodically to consider additions and modifications to the Inventory.

ACKNOWLEDGMENTS

We gratefully acknowledge the effort of all those who volunteered their time to write plant assessment forms, provide comments on assessments, or add observations to fill gaps in information. Too many people contributed information for us to list them individually, but each assessment contains the name of its author and those who provided information on that species. In particular, we thank those who helped develop the criteria, including John Hall of The Nature Conservancy in Arizona, Ann Howald of Garcia and Associates, and Maria Ryan of University of Nevada Cooperative Extension. We also wish to thank Kristin Dzurella of UC Davis and John Knapp of the Catalina Island Conservancy for their contributions of time and data.

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UC IPM

CENTER FOR INVASIVE PLANT MANAGEMENT

Designed by Melanie Haage

Contents

Introduction

Invasive plants damage ecosystems around the world. They displace native species, change plant community structure, and reduce the value of habitat for wildlife.[1] Invasive plants may disrupt physical ecosystem processes, such as fire regimes, sedimentation and erosion, light availability, and nutrient cycling. In aquatic ecosystems, invasive plants clog lakes, streams, and waterways, reducing oxygen levels for fish and degrading habitat for waterbirds. The impact is especially severe in California, with its rich diversity of natural resources.

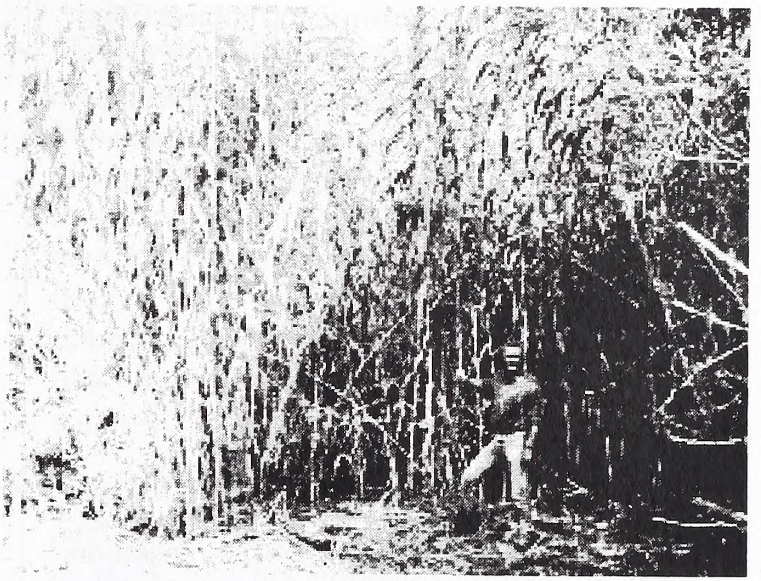
The California Invasive Plant Inventory categorizes non-native invasive plants that threaten the state's wildlands. Categorization is based on an assessment of the ecological impacts of each plant. The Inventory represents the best available knowledge of invasive plant experts in the state. However, it has no regulatory authority, and should be used with full understanding of the limitations described later in this Introduction.

California is home to 4,200 native plant species, and is recognized internationally as a "biodiversity hotspot." Approximately 1,800 non-native plants also grow in the wild in the state. A small number of these, approximately 200, are the ones that this Inventory considers invasive. Improved understanding of their impacts will help those working to project California's treasured biodiversity.

The Inventory

The Inventory categorizes plants as High, Moderate, or Limited, reflecting the level of each species' negative ecological impact in California. Other factors, such as economic impact or difficulty of management, are not included in this assessment.

It is important to note that every species listed in Table 1 is invasive, regardless of its overall rating, and should be of concern to land managers. Although the impact of each plant varies regionally, its rating represents cumulative impacts statewide. Therefore, a plant whose statewide impacts are categorized as Limited may have more severe impacts in a particular region. Conversely, a plant categorized as having a High cumulative impact across California may have very little impact in some regions.



In the past 15 years, approximately $15 million has been spent statewide to control Arundo donax *(giant reed) in California. (Photo by David Chang, Santa Barbara County Agricultural Commissioner's office)*

Members of the Inventory Review Committee, Cal-IPC staff, and volunteers drafted assessments for each plant based on the formal criteria system described below. The committee solicited information from land managers across the state to complement the available literature. Assessments were released for public review before the committee finalized them. All plant assessments that form the basis for this summary document are available at www.cal-ipc.org. The final list includes 39 High species, 65 Moderate species, and 89 Limited species. Additional information, including updated observations, will be added to the Cal-IPC website periodically, with revisions tracked and dated.

Definitions

The Inventory categorizes "invasive non-native plants that threaten wildlands" according to the definitions below. Plants were evaluated only if they invade

Figure 1. The Criteria System

Section 1. Ecological Impact

1.1 Impact on abiotic ecosystem processes (e.g. hydrology, fire, nutrient cycling)
1.2 Impact on native plant community composition, structure, and interactions
1.3 Impact on higher trophic levels, including vertebrates and invertebrates
1.4 Impact on genetic integrity of native species (i.e. potential for hybridization)

Section 2. Invasive Potential

2.1 Ability to establish without anthropogenic or natural disturbance
2.2 Local rate of spread with no management
2.3 Recent trend in total area infested within state
2.4 Innate reproductive potential (based on multiple characteristics)
2.5 Potential for human-caused dispersal
2.6 Potential for natural long-distance (>1 km) dispersal
2.7 Other regions invaded worldwide that are similar to California

Section 3. Distribution

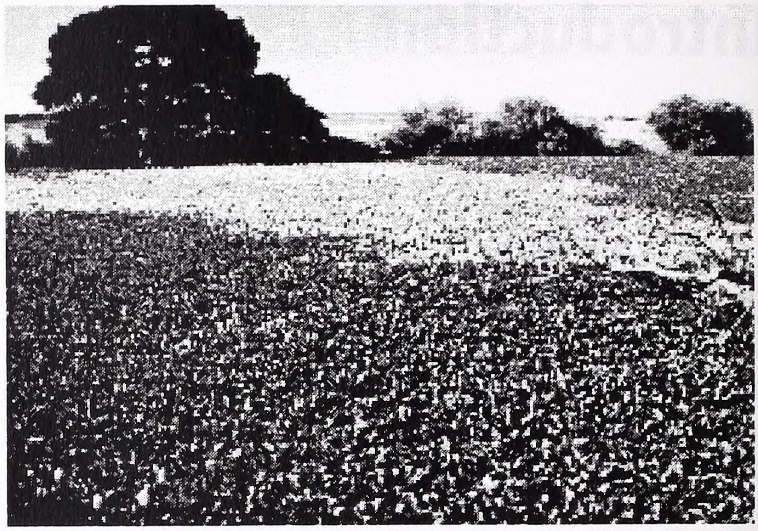
3.1 Ecological amplitude (ecological types invaded in California)
3.2 Ecological intensity (highest extent of infestation in any one ecological type)

Documentation Levels

Assessed as highest level of documentation for each criterion.

4 = Reviewed scientific publications
3 = Other published material (reports or other non-peer-reviewed documents)
2 = Observational (unpublished information confirmed by a professional in the field)
1 = Anecdotal (unconfirmed information)
0 = No information

Complete description of criteria system and detailed plant assessments available at www.cal-ipc.org.



Dense mats formed by aquatic plants such as water hyacinth (Eichhornia crassipes) *reduce habitat for waterfowl and fish. (Photo by Bob Case, California Native Plant Society)*

California wildlands with native habitat values. The Inventory does not include plants found solely in areas of human-caused disturbance such as roadsides and cultivated agricultural fields.

- **Wildlands** are public and private lands that support native ecosystems, including some working landscapes such as grazed rangeland and active timberland.
- **Non-native** plants are species introduced to California after European contact and as a direct or indirect result of human activity.
- **Invasive non-native plants that threaten wildlands** are plants that 1) are not native to, yet can spread into, wildland ecosystems, and that also 2) displace native species, hybridize with native species, alter biological communities, or alter ecosystem processes.

Criteria for Listing

The California Invasive Plant Inventory updates the 1999 "Exotic Pest Plants of Greatest Ecological Concern in California."[2] Cal-IPC's Inventory Review Committee met regularly between 2002 and 2005 to review 238 non-native species with known or suspected impacts in California wildlands. These assessments are based on the "Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands"[3] which were developed in collaboration with the Southwestern Vegetation Management Association in Arizona (www.swvma.org) and the University of Nevada Cooperative Extension (www.unce.unr.

edu) so that ratings could be applied across political boundaries and adjusted for regional variation. The goals of the criteria system and the Inventory are to:

- Provide a uniform methodology for categorizing non-native invasive plants that threaten wildlands;
- Provide a clear explanation of the process used to evaluate and categorize plants;
- Provide flexibility so the criteria can be adapted to the particular needs of different regions and states;
- Encourage contributions of data and documentation on evaluated species;
- Educate policy makers, land managers, and the public about the biology, ecological impacts, and distribution of invasive non-native plants.

The criteria system generates a plant's overall rating based on an evaluation of 13 criteria, which are divided into three sections assessing Ecological Impacts, Invasive Potential, and Ecological Distribution (Fig. 1). Evaluators assign a score of A (severe) to D (no impact) for each criterion, with U indicating unknown. The scoring scheme is arranged in a tiered format, with individual criteria contributing to section scores that in turn generate an overall rating for the plant.

Detailed plant assessment forms list the rationale and applicable references used to arrive at each criterion's score. The level of documentation for each question is also rated, and translated into a numerical score for averaging (Fig. 1). The documentation score presented in the tables is a numeric average of the documentation levels for all 13 criteria.

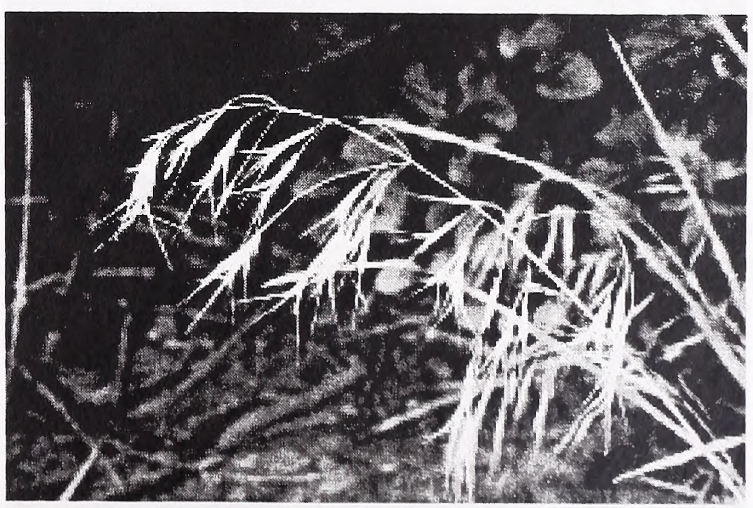
Inventory Categories

Each plant in Table 1 has received an overall rating of High, Moderate or Limited based on evaluation using the criteria system. The meaning of these overall ratings is described below. In addition to the overall ratings, specific combinations of section scores that indicate significant potential for invading new ecosystems triggers an Alert designation so that land managers may watch for range expansions. Table 3 lists plants categorized as Evaluated But Not Listed because either we lack sufficient information to assign a rating or the available information indicates that the species does not have significant impacts at the present time.

- **High** – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- **Moderate** – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- **Limited** – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

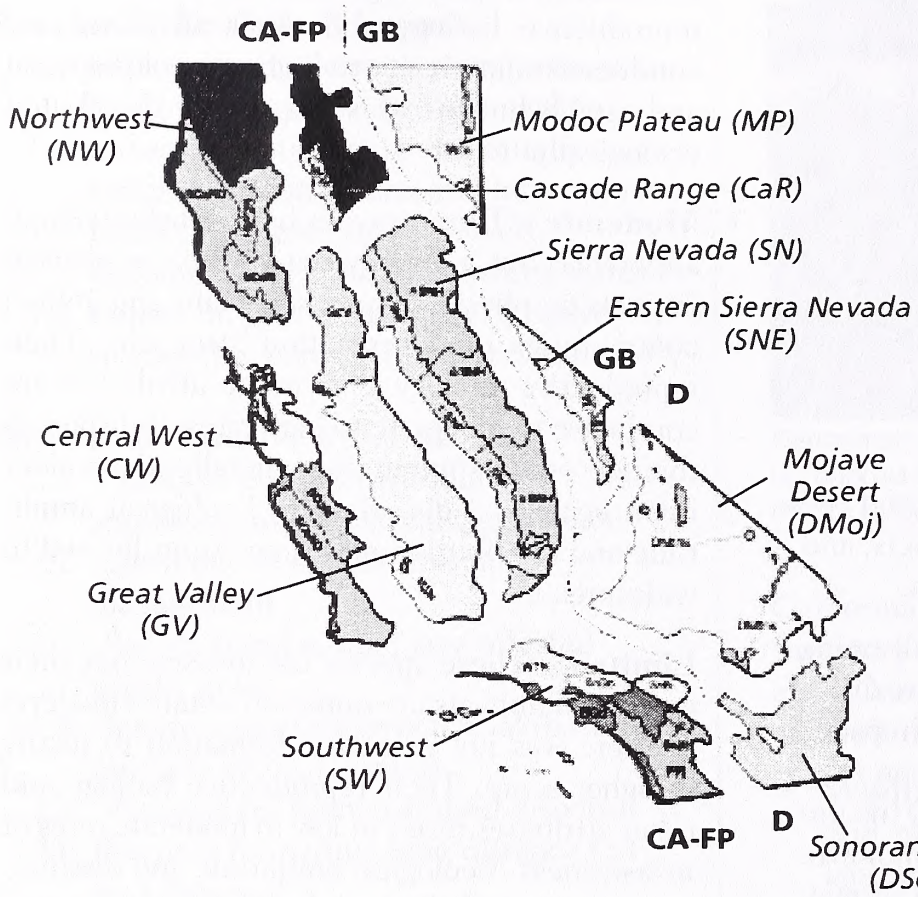
Reading the Tables

The core of the Inventory is Table 1, which lists those plants we have categorized as invasive plants that threaten California wildlands.. The types of information contained in Table 1 is described below.



When Bromus tectorum *(downy brome or cheatgrass) replaces native perennial grasses, the frequency of wildfires shortens from 60-100 years to 3-5 years. (Photo by Joe DiTomaso, UC Davis)*

Figure 2. Jepson Geographic Regions



CA = *all of California*

CA-FP = *California Floristic Province (NW, CaR, SN, GV, CW, SW)*

GB = *Great Basin Province (MP, SNE)*

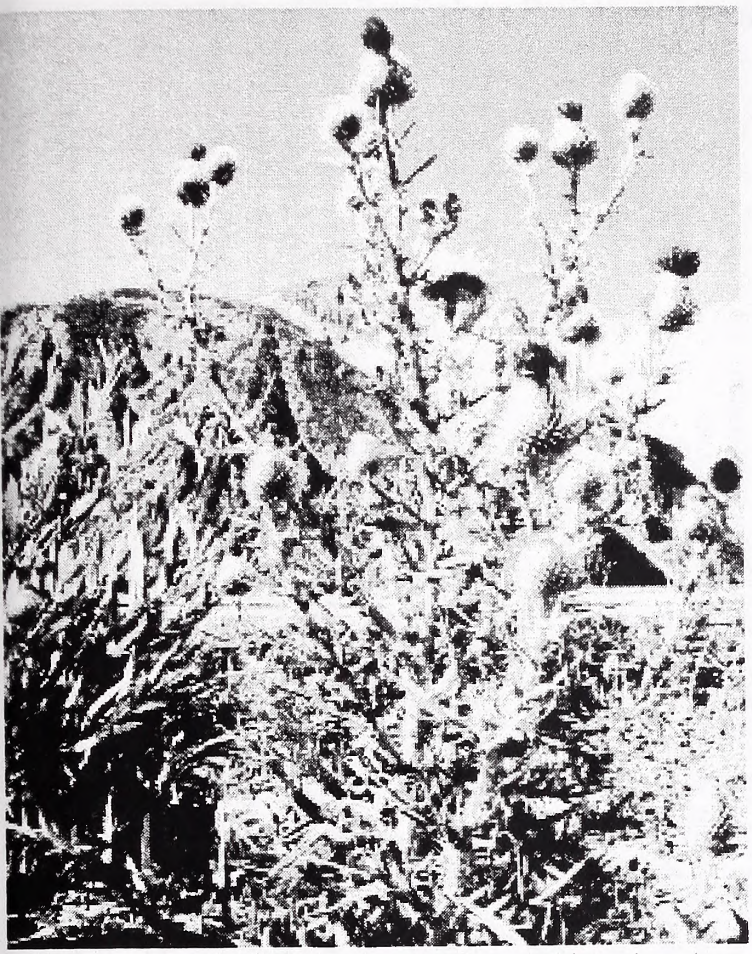
D = *Desert Province (DMoj, DSon)*

Reprinted from The Jepson Manual, *J. Hickman, Ed., 1993, with permission from the Jepson Herbarium. © Regents of the University of California.*

Table 2 contains four plants that are native to specific regions of California but have become invasive in other regions of the state to which humans have moved them. Table 3 lists those plant species that were evaluated but did not meet the threshold for listing. Finally, Table 4 contains plants that were nominated for review but dismissed without a formal assessment because either they do not invade wildlands (except for isolated instances) or the Inventory Review Committee lacked adequate information to answer the criteria questions.

Table 1 summarizes rating information for all plant species categorized as invasive by this Inventory. The columns contain the following information:

- A diamond (◆) in the first column designates an Alert status for that species.
- Scientific nomenclature for most species follows *The Jepson Manual*.[4]
- For each species, the first common name is based on the Weed Science Society of America,[5] followed by other names commonly used in California. (Appendix 4 provides an index of common names.)
- The overall rating for the plant (High, Moderate, or Limited) is listed next. (Because Table 1 is organized alphabetically, we have included a listing organized by rating level in Appendix 1.)
- Section scores are shown for Ecological Impact, Invasive Potential, and Distribution. These can typically be interpreted as A=high, B=moderate, C=limited, D=none, U=unknown.
- Documentation Level presents the average level of the references used to evaluate that species, from 0 (no information) to 4 (all information based on peer-reviewed scientific publications).
- Ecological Types Invaded and Other Comments provides additional information of interest. The classification of ecological types is adapted from a system developed by the California Department of Fish and Game.[6] (Appendix 3 provides detailed examples of ecological types.)
- Regions Invaded are based on floristic regions described in *The Jepson Manual*[4] (Fig. 2) and indicate heavily impacted areas. This information is incomplete for many species, so regions listed in this column should be considered the minimum area invaded.



Cirsium vulgare *(bull thistle) is spreading at high elevations, such as in Yosemite National Park. (Photo by Bob Case, California Native Plant Society)*

inventory does not attempt to suggest management needs for specific sites or regions. The criteria system was designed to be adapted at multiple scales, and local groups are encouraged to use the criteria for rating plants in their particular area.

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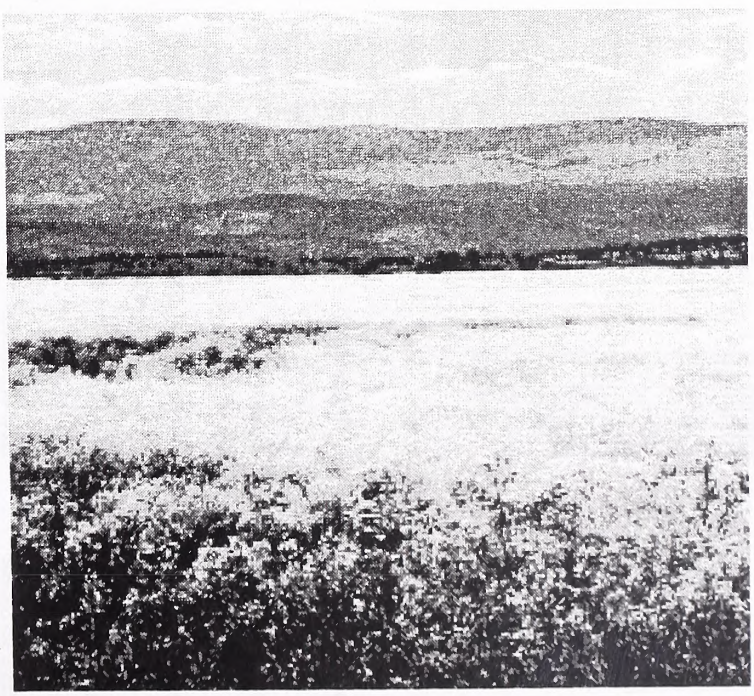
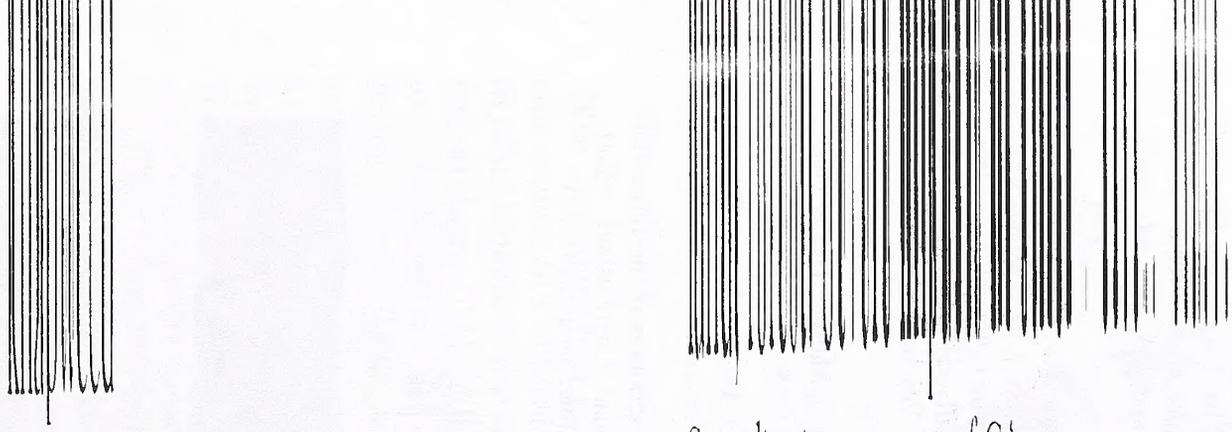
Uses and Limitations

The California Invasive Plant Inventory serves as a scientific and educational report. It is designed to prioritize plants for control, to provide information to those working on habitat restoration, to show areas where research is needed, to aid those who prepare or comment on environmental planning documents, and to educate public policy makers. Plants that lack published information may be good starting points for student research projects.

The Inventory cannot address, and is not intended to address, the range of geographic variation in California, nor the inherently regional nature of invasive species impacts. While we have noted where each plant is invasive, only the cumulative statewide impacts of the species have been considered in the evaluation. The impact of these plants in specific geographic regions or habitats within California may be greater or lesser than their statewide rating indicates. Management actions for a species should be considered on a local and site-specific basis, as the



Lepidium latifolium *(perennial pepperweed or tall whitetop) concentrates salt in marsh soils, threatening several rare plant species. (Photo by Bob Case)*



Spreading in many areas of CA.

	Aegilops triuncialis	barb goatgrass	High	A	A	B	3.6	Grassland, oak woodland. Spreading in NW and Central Valley.	CaR, CW, SN, GV
	Ageratina adenophora	croftonweed, eupatorium	Moderate	B	B	B	2.8	Coastal canyons, scrub, slopes. Very invasive in Australia, limited information and distribution in CA.	CW, SW
	Agrostis avenacea	Pacific bentgrass	Limited	C	C	C	2.4	Vernal pools, coastal prairie, meadows, grasslands. Impacts are low in most areas.	NW, SN, GV, CW, SW
	Agrostis stolonifera	creeping bentgrass	Limited	C	B	C	1.9	Wetlands, riparian; grown for domestic forage. Limited distribution and impacts unknown.	NW, SN, GV, CW, SW
	Ailanthus altissima	tree-of-heaven	Moderate	B	B	B	3.0	Riparian areas, grasslands, oak woodland. Impacts highest in riparian areas.	CA-FP
	Alhagi maurorum (=*A. pseudalhagi*)	camelthorn	Moderate	B	B	B	3.2	Grassland, meadows, riparian and desert scrub, Sonoran thorn woodland. Very invasive in southwestern states. Limited distribution in CA.	GV, D, SNE
◆	*Alternanthera philoxeroides*	alligatorweed	High	A	B	C	2.9	Freshwater aquatic systems, including marshes	GV, SW
	Ammophila arenaria	European beachgrass	High	A	B	B	3.2	Coastal dunes	NW, CW, SW
	Anthoxanthum odoratum	sweet vernalgrass	Moderate	B	B	B	2.7	Coastal prairie, coniferous forest. Little information available on impacts and limited ecological range.	NW, SN, CW
◆	*Arctotheca calendula* (fertile strains)	fertile capeweed	Moderate	B	B	C	3.6	Coastal prairie. Can produce seed. Important agricultural weed in Australia, but limited distribution in CA.	NW, CW
	Arctotheca calendula (sterile strains)	sterile capeweed	Moderate	B	B	B	2.8	Coastal prairie. Only propagates vegetatively. More competitive than fertile form, but limited distribution.	NW, CW
	Arundo donax	giant reed	High	A	B	A	2.8	Riparian areas. Commercially grown for musical instrument reeds, structural material, etc.	CW, SN, GV, SW

Scientific names based on *The Jepson Manual*. For each species, the first common name is based on the Weed Science Society of America's "Composite List of Weeds" (www.wssa.net), followed by other names used in California. Scores: A = Severe, B = Moderate, C = Limited, D = None, U = Unknown. Documentation level averaged. Regions invaded based on Jepson geographic regions. Plant assessment forms, literature citations, and full rating criteria available at www.cal-ipc.org.

Cirsium vulgare *(bull thistle) is spreading at high elevations, such as in Yosemite National Park. (Photo by Bob Case, California Native Plant Society)*

Uses and Limitations

The California Invasive Plant Inventory serves as a scientific and educational report. It is designed to prioritize plants for control, to provide information to those working on habitat restoration, to show areas where research is needed, to aid those who prepare or comment on environmental planning documents, and to educate public policy makers. Plants that lack published information may be good starting points for student research projects.

The Inventory cannot address, and is not intended to address, the range of geographic variation in California, nor the inherently regional nature of invasive species impacts. While we have noted where each plant is invasive, only the cumulative statewide impacts of the species have been considered in the evaluation. The impact of these plants in specific geographic regions or habitats within California may be greater or lesser than their statewide rating indicates. Management actions for a species should be considered on a local and site-specific basis, as the inventory does not attempt to suggest management needs for specific sites or regions. The criteria system was designed to be adapted at multiple scales, and local groups are encouraged to use the criteria for rating plants in their particular area.

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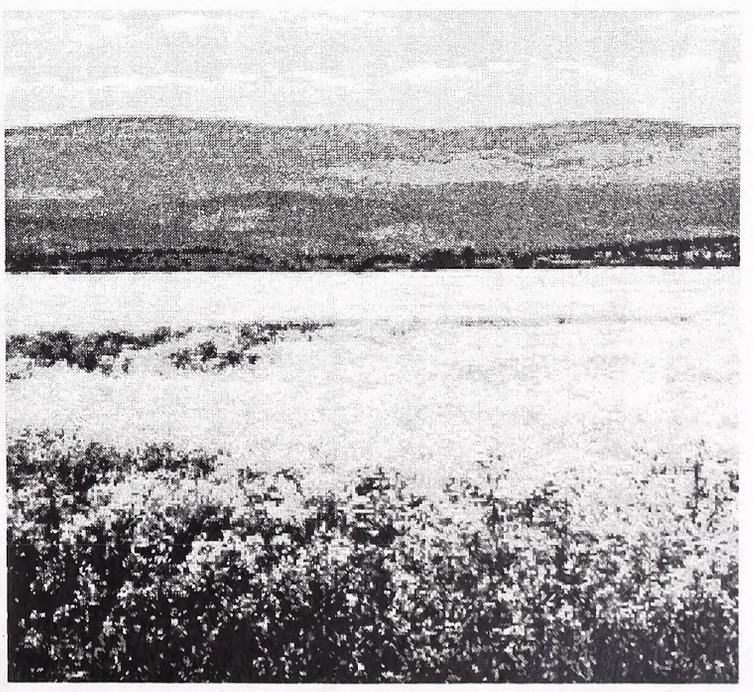

Lepidium latifolium *(perennial pepperweed or tall whitetop) concentrates salt in marsh soils, threatening several rare plant species. (Photo by Bob Case)*

TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Acacia melanoxylon	black acacia, blackwood acacia	Limited	C	C	B	2.7	Coniferous forest, chaparral, woodland, riparian. Impacts low in most areas.	NW, CW, SW
	Acroptilon repens	Russian knapweed	Moderate	B	B	B	3.2	Scrub, grasslands, riparian, pinyon-juniper woodland, forest. Severe impacts in other western states. Spreading in many areas of CA.	CA-FP, GB
	Aegilops triuncialis	barb goatgrass	High	A	A	B	3.6	Grassland, oak woodland. Spreading in NW and Central Valley.	CaR, CW, SN, GV
	Ageratina adenophora	croftonweed, eupatorium	Moderate	B	B	B	2.8	Coastal canyons, scrub, slopes. Very invasive in Australia, limited information and distribution in CA.	CW, SW
	Agrostis avenacea	Pacific bentgrass	Limited	C	C	C	2.4	Vernal pools, coastal prairie, meadows, grasslands. Impacts are low in most areas.	NW, SN, GV, CW, SW
	Agrostis stolonifera	creeping bentgrass	Limited	C	B	C	1.9	Wetlands, riparian; grown for domestic forage. Limited distribution and impacts unknown.	NW, SN, GV, CW, SW
	Ailanthus altissima	tree-of-heaven	Moderate	B	B	B	3.0	Riparian areas, grasslands, oak woodland. Impacts highest in riparian areas.	CA-FP
	Alhagi maurorum (=*A. pseudalhagi*)	camelthorn	Moderate	B	B	B	3.2	Grassland, meadows, riparian and desert scrub, Sonoran thorn woodland. Very invasive in southwestern states. Limited distribution in CA.	GV, D, SNE
◆	*Alternanthera philoxeroides*	alligatorweed	High	A	B	C	2.9	Freshwater aquatic systems, including marshes	GV, SW
	Ammophila arenaria	European beachgrass	High	A	B	B	3.2	Coastal dunes	NW, CW, SW
	Anthoxanthum odoratum	sweet vernalgrass	Moderate	B	B	B	2.7	Coastal prairie, coniferous forest. Little information available on impacts and limited ecological range.	NW, SN, CW
◆	*Arctotheca calendula* (fertile strains)	fertile capeweed	Moderate	B	B	C	3.6	Coastal prairie. Can produce seed. Important agricultural weed in Australia, but limited distribution in CA.	NW, CW
	Arctotheca calendula (sterile strains)	sterile capeweed	Moderate	B	B	B	2.8	Coastal prairie. Only propagates vegetatively. More competitive than fertile form, but limited distribution.	NW, CW
	Arundo donax	giant reed	High	A	B	A	2.8	Riparian areas. Commercially grown for musical instrument reeds, structural material, etc.	CW, SN, GV, SW

Scientific names based on *The Jepson Manual*. For each species, the first common name is based on the Weed Science Society of America's "Composite List of Weeds" (www.wssa.net), followed by other names used in California. Scores: A = Severe, B = Moderate, C = Limited, D = None, U = Unknown. Documentation level averaged. Regions invaded based on Jepson geographic regions. Plant assessment forms, literature citations, and full rating criteria available at www.cal-ipc.org.

TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
◆	*Asparagus asparagoides*	bridal creeper	Moderate	B	B	D	2.6	Riparian woodland	CW, SW
◆	*Asphodelus fistulosus*	onionweed	Moderate	B	A	C	2.9	Coastal dunes, prairie, grasslands. Invasive in Australia. High invasiveness but limited distribution in CA.	GV, SW
	Atriplex semibaccata	Australian saltbush	Moderate	B	B	B	2.9	Coastal grasslands, scrub, upper salt marsh. Limited distribution, but can be very invasive regionally.	CA except CaR and SN
	Avena barbata	slender wild oat	Moderate	B	B	A	3.5	Coastal scrub, grasslands, oak woodland, forest. Very widespread, but impacts more severe in desert regions.	CA-FP, MP, DMoj
	Avena fatua	wild oat	Moderate	B	B	A	3.2	Coastal scrub, chaparral, grasslands, woodland, forest. Very widespread, but impacts more severe in desert regions.	CA-FP, MP, DMoj
	Bassia hyssopifolia	fivehook bassia	Limited	C	C	B	2.7	Alkaline habitats. Weed of agriculture or disturbed sites. Impacts minor in wildlands.	CA except NW
	Bellardia trixago	bellardia	Limited	C	C	C	1.9	Grasslands, including serpentine. Impacts and invasiveness appear to be minor.	NW, CW
◆	*Brachypodium sylvaticum*	perennial false-brome	Moderate	B	A	D	2.5	Redwoods and mixed evergreen forest in Santa Cruz Mtns. Expanding range rapidly in OR, potentially very invasive.	CW
	Brassica nigra	black mustard	Moderate	B	B	A	2.0	Widespread. Primarily a weed of disturbed sites, but can be locally a more significant problem in wildlands.	CA-FP
	Brassica rapa	birdsrape mustard, field mustard	Limited	C	B	B	1.8	Coastal scrub, grasslands meadows, riparian. Primarily in disturbed areas. Impacts appear to be minor or unknown in wildlands.	CA-FP
	Brassica tournefortii	Saharan mustard, African mustard	High	A	A	B	2.3	Desert dunes, desert and coastal scrub	SW, D
	Briza maxima	big quakinggrass, rattlesnakegrass	Limited	B	C	B	2.3	Grasslands. Widespread in coast range. Impacts generally minor, but locally can be higher.	NW, SN, CW, SW
	Bromus diandrus	ripgut brome	Moderate	B	B	A	3.3	Dunes, scrub, grassland, woodland, forest. Very widespread, but monotypic stands uncommon.	CA

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Bromus hordeaceus	soft brome	Limited	B	C	A	2.8	Grasslands, sagebrush, serpentine soils, many other habitats. Very widespread, but primarily in converted annual grasslands.	CA
	Bromus madritensis ssp. *rubens* (=*B. rubens*)	red brome	High	A	B	A	3.0	Scrub, grassland, desert washes, woodlands. Impacts most significant in desert areas.	CA
	Bromus tectorum	downy brome, cheatgrass	High	A	B	A	3.1	Interior scrub, woodlands, grasslands. Most widely distributed invasive plant in the US.	SN, GB, D
	Cakile maritima	European sea-rocket	Limited	C	B	B	3.6	Coastal dunes. Widespread, but impacts appear to be minor.	NW, CW, SW
◆	*Cardaria chalepensis* (=*C. draba* ssp. *chalepensis*)	lens-podded whitetop	Moderate	B	B	C	3.2	Central Valley wetlands. Limited distribution in CA. May not be as invasive as *C. draba*.	CA-FP, GB
	Cardaria draba	hoary cress	Moderate	B	B	B	2.6	Riparian areas, marshes of central coast. More severe invasive in northern CA.	CW, SW
	Cardaria pubescens	hairy whitetop	Limited	C	B	C	2.5	Grasslands and meadows. Impacts unknown but may be significant in meadows of Cascade Range.	GV, SW
	Carduus acanthoides	plumeless thistle	Limited	B	C	C	3.0	Valley and foothill grasslands. Limited distribution in CA, impacts higher locally.	NW, SN, CW
	Carduus nutans	musk thistle	Moderate	B	B	B	3.1	Grasslands. More invasive in other western states. Limited distribution in CA.	NW, CaR, SN
	Carduus pycnocephalus	Italian thistle	Moderate	B	B	A	2.9	Forest, scrub, grasslands, woodland. Very widespread. Impacts may be variable regionally.	NW, SN, CW, SW
	Carduus tenuiflorus	slenderflower thistle	Limited	C	C	B	2.8	Valley and foothill grasslands. Limited distribution. Impacts appear to be minor.	NW, SN, CW, SW
	Carpobrotus chilensis (and *C. edulis* x *chilensis* hybrids)	sea-fig, iceplant	Moderate	B	B	A	1.8	Coastal dunes, scrub, prairie. Little information on species, most inferred from *C. edulis*.	NW, CW, SW
	Carpobrotus edulis	Hottentot-fig, iceplant	High	A	B	A	3.3	Coastal habitats, especially dunes	NW, CW, SW
◆	*Carthamus lanatus*	woolly distaff thistle	Moderate	A	B	C	2.8	Grasslands. Expanding in coast ranges, may become more severe. Current distribution limited.	NW, SN, CW

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Centaurea calcitrapa	purple starthistle	Moderate	B	B	B	2.7	Grasslands. Impacts regionally variable. Relatively limited distribution.	NW, SN, GV, CW, SW
◆	*Centaurea debeauxii* (=*C. jacea* x *C. nigra*, *C.* x *pratensis*)	meadow knapweed	Moderate	B	B	C	2.7	Grasslands. Spreading rapidly in NW CA, but limited distribution elsewhere. Little known of impacts.	NW, CW
	Centaurea diffusa	diffuse knapweed	Moderate	B	B	B	3.3	Great Basin scrub, coastal prairie. Severe impacts in other western states. Limited distribution in CA with impacts higher in some locations.	Ca-R, CW, NW, SN
	Centaurea maculosa (=*C. biebersteinii*)	spotted knapweed	High	A	B	B	3.4	Riparian, grasslands, wet meadows, forests. More widely distributed in other western states.	CA-FP, GB
	Centaurea melitensis	Malta starthistle, tocalote	Moderate	B	B	B	2.6	Grasslands, oak woodland. Sometimes misidentified as *C. solstitialis*. Impacts vary regionally.	CW, SW, D
	Centaurea solstitialis	yellow starthistle	High	A	B	A	3.0	Grasslands, woodlands, occasionally riparian	CA-FP
	Centaurea virgata var. *squarrosa* (=*C. squarrosa*)	squarrose knapweed	Moderate	B	B	B	2.8	Scrub, grassland, pinyon-juniper woodland. Highly invasive in Utah and other western states. Limited distribution in CA.	NW, CaR, MP
	Chondrilla juncea	rush skeletonweed	Moderate	B	B	B	3.1	Grasslands. Very invasive in other western states, but currently limited distribution in CA.	NW, CaR, SN, GV, CW,
	Chrysanthemum coronarium	crown daisy	Moderate	B	B	B	2.0	Coastal prairie, dunes, and scrub. Impacts generally low to moderate, but can vary regionally.	CW, SW
	Cirsium arvense	Canada thistle	Moderate	B	B	B	2.8	Grasslands, riparian areas, forests. Severe impacts in other western states. Limited distribution in CA.	CA-FP, DMoj
	Cirsium vulgare	bull thistle	Moderate	B	B	B	3.3	Riparian areas, marshes, meadows. Widespread, can be very problematic regionally.	CA-FP, GB
	Conicosia pugioniformis	narrowleaf iceplant	Limited	C	B	C	2.1	Coastal dunes, scrub, grassland. Limited distribution. Impacts generally minor but can be higher locally.	CW
	Conium maculatum	poison-hemlock	Moderate	B	B	B	2.8	Riparian woodland, grassland. Widespread in disturbed areas. Abiotic impacts unknown. Impacts can vary locally.	CA-FP

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Cynosurus echinatus	hedgehog dogtailgrass	Moderate	B	B	A	2.5	Oak woodland, grassland. Widespread, impacts vary regionally, but typically not in monotypic stands.	NW, SN, GV, CW, SW
	Cytisus scoparius	Scotch broom	High	A	B	A	3.2	Coastal scrub, oak woodland, horticultural varieties may also be invasive.	CA-FP
	Cytisus striatus	Portuguese broom	Moderate	B	B	B	2.7	Coastal scrub, grasslands. Often confused with *C. scoparius*. Limited distribution.	NW, CW, SW
	Dactylis glomerata	orchardgrass	Limited	C	B	B	2.9	Grasslands, broadleaved forest, woodlands. Common forage species. Impacts appear to be minor.	CA-FP
	Delairea odorata (=*Senecio mikanioides*)	Cape-ivy, German-ivy	High	A	A	B	3.1	Coastal, occasionally other riparian areas.	CW, SW
	Descurainia sophia	flixweed, tansy mustard	Limited	C	B	B	1.9	Scrub, grassland, woodland. Impacts appear to be minor, but locally more invasive in NE CA.	CA
	Digitalis purpurea	foxglove	Limited	C	B	B	2.4	Forest, woodland. Widely escaped ornamental. Impacts largely unknown or appear to be minor.	NW, SN, CW
	Dipsacus fullonum	common teasel	Moderate	B	B	B	3.8	Grasslands, seep, riparian scrub. Impacts regionally variable, forms dense stands on occasion.	NW, CW, SN
	Dipsacus sativus	fuller's teasel	Moderate	B	B	B	3.8	Grasslands, seep, bogs. Impacts regionally variable, forms dense stands on occasion.	NW, CW, SW
◆	*Dittrichia graveolens*	stinkwort	Moderate	B	A	C	3.0	Grasslands, riparian scrub. Spreading rapidly, impacts may become more important in future.	NW, SN, CW, GV, SW
	Echium candicans	pride-of-Madeira	Limited	C	B	B	1.5	Two escaped populations near Big Sur and San Elijo Lagoon. Little information on impacts.	CW, NW, SW
	Egeria densa	Brazilian egeria	High	A	A	B	3.1	Streams, ponds, sloughs, lakes, Sacramento-San Joaquin Delta	SN, GV, SW
	Ehrharta calycina	purple veldtgrass	High	A	A	B	3.4	Sandy soils, especially dunes. Rapidly spreading on central coast.	CW, SW
	Ehrharta erecta	erect veldtgrass	Moderate	B	B	B	2.2	Scrub, grasslands, woodland, forest. Spreading rapidly. Impacts may become more important in future.	CW, SW

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
◆	*Ehrharta longiflora*	long-flowered veldtgrass	Moderate	B	B	C	2.8	Coastal scrub. Limited distribution, but spreading rapidly in southern CA. Impacts largely unknown.	SW
◆	*Eichhornia crassipes*	water hyacinth	High	A	A	C	3.2	Aquatic systems in Sacramento-San Joaquin Delta	GV, CW, SW
	Elaeagnus angustifolia	Russian-olive	Moderate	B	A	B	3.3	Interior riparian. Impacts more severe in other western states. Current distribution limited in CA.	GV, CW, DMoj
◆	*Emex spinosa*	spiny emex, devil's-thorn	Moderate	B	B	D	1.6	Edges of beaches, other coastal habitats. Invasive in other states and countries. Spreading rapidly in southern CA. Impacts not well known.	SW
	Erechtites glomerata, E. minima	Australian fireweed, Australian burnweed	Moderate	C	B	A	3.2	Coastal woodland, scrub, forests. Widespread on coast, but impacts low overall. May vary locally.	NW, CW
	Erodium cicutarium	redstem filaree	Limited	C	C	A	3.1	Many habitats. Widespread. Impacts minor in wildlands. High-density populations are transient.	CA
	Eucalyptus camaldulensis	red gum	Limited	C	C	C	2.2	Mainly southern CA urban areas. Impacts, invasiveness and distribution all minor.	NW, GV, CW, SW
	Eucalyptus globulus	Tasmanian blue gum	Moderate	B	B	B	2.8	Riparian areas, coastal grasslands, scrub. Impacts can be much higher in coastal areas.	NW, GV, CW, SW
◆	*Euphorbia esula*	leafy spurge	High	A	A	C	3.5	Forests, woodlands, juniper forest. More widespread invasive in northern states.	NW, CaR, MP
	Euphorbia oblongata	oblong spurge	Limited	C	C	B	2.0	Meadows, woodlands. Limited distribution. Impacts unknown. Locally in dense stands.	GV, CW
◆	*Euphorbia terracina*	carnation spurge	Moderate	B	B	C	1.7	Coastal scrub. Limited distribution. Spreading in southern CA. Impacts unknown.	SW
	Festuca arundinacea	tall fescue	Moderate	B	B	A	2.9	Coastal scrub, grasslands; common forage grass. Widespread, abiotic impacts unknown.	CA-FP
	Ficus carica	edible fig	Moderate	B	A	B	2.6	Riparian woodland. Can spread rapidly. Abiotic impacts unknown. Can be locally very problematic.	CW, SW, GV
	Foeniculum vulgare	fennel	High	A	B	A	3.0	Grasslands, scrub.	CA-FP

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Genista monspessulana	French broom	High	A	A	B	3.2	Coastal scrub, oak woodland, grasslands. Horticultural selections may also be invasive.	NW, CW, SW
	Geranium dissectum	cutleaf geranium	Limited	C	B	A	1.7	Numerous habitats but impacts appear minor.	CA-FP
	Glyceria declinata	waxy mannagrass	Moderate	B	B	B	1.9	Vernal pools, moist grasslands. Often confused with native *Glyceria*. Impacts largely unknown, but may be significant in vernal pools.	GV
	Halogeton glomeratus	halogeton	Moderate	B	A	B	3.0	Scrub, grasslands, pinyon-juniper woodland. Larger problem in NV. Monotypic stands are rare.	CaR, DMoj, GB
	Hedera helix, H. canariensis	English ivy, Algerian ivy	High	A	A	A	2.7	Coastal forests, riparian areas. Species combined due to genetics questions.	CA-FP
	Helichrysum petiolare	licoriceplant	Limited	C	B	C	2.0	North coastal scrub. Limited distribution. Impacts unknown, but can form dense stands.	NW, CW
	Hirschfeldia incana	shortpod mustard, summer mustard	Moderate	B	B	A	1.9	Scrub, grasslands, riparian areas. Impacts not well understood, but appear to be greater in southern CA.	CW, GV, NW, SN, SW
	Holcus lanatus	common velvet-grass	Moderate	B	B	A	2.9	Coastal grasslands, wetlands. Impacts can be more severe locally, especially in wetland areas.	CA-FP, DMoj, GB
	Hordeum marinum, H. murinum	Mediterranean barley, hare barley, wall barley	Moderate	B	B	A	2.8	Grasslands. *H. marinum* invades drier habitats, while *H. murinum* invades wetlands. Widespread, but generally do not form dominant stands.	CA
◆	*Hydrilla verticillata*	hydrilla	High	A	B	C	3.2	Freshwater aquatic systems. The most important submerged aquatic invasive in southern states.	NW, SN, GV, SW, D
◆	*Hypericum canariense*	Canary Island hypericum	Moderate	B	B	C	1.2	Coastal scrub, prairie. Impacts unknown. Limited distribution. Spreading rapidly on central coast.	SW, CW
	Hypericum perforatum	common St. Johnswort, klamathweed	Moderate	B	B	B	3.7	Many northern CA habitats. Abiotic impacts low. Biological control agents have reduced overall impact.	SN, CW, GV, NW, SW
	Hypochaeris glabra	smooth catsear	Limited	C	B	B	3.1	Scrub and woodlands. Widespread. Impacts appear to be minor. Some local variability.	CA-FP
	Hypochaeris radicata	rough catsear, hairy dandelion	Moderate	C	B	A	2.2	Coastal dunes, scrub, and prairie, woodland, forest. Widespread. Impacts unknown or appear to be minor.	CA-FP

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
◆	*Ilex aquifolium*	English holly	Moderate	B	B	C	2.7	North coast forests. Expanding range south from Oregon.	CW, NW
	Iris pseudacorus	yellowflag iris	Limited	C	B	C	2.3	Riparian, wetland areas, especially southern CA. Limited distribution. Abiotic impacts unknown.	SN, GV, CW, SW
	Isatis tinctoria	dyer's woad	Moderate	B	B	A	3.0	Great Basin scrub and grasslands, coniferous forest. More severe impacts in other western states, but can be locally very invasive in northern CA.	CaR, NW, SN, MP
	Kochia scoparia	kochia	Limited	B	C	B	3.2	Scrub, chaparral, grasslands. Primarily a weed of disturbed sites.	CW, GV, D, GB
	Lepidium latifolium	perennial pepperweed, tall whitetop	High	A	A	A	3.1	Coastal and inland marshes, riparian areas, wetlands, grasslands. Has potential to invade montane wetlands.	CA-FP, GB
	Leucanthemum vulgare	oxeye daisy	Moderate	B	B	B	2.5	Montane meadows, coastal grasslands, coastal scrub. Expanding range, invasiveness varies locally.	CW, NW, SN, SW
	Linaria genistifolia ssp. *dalmatica* (=*L. dalmatica*)	Dalmation toadflax	Moderate	B	B	B	2.8	Grasslands, forest clearings. Limited distribution. More severe impacts in other western states.	CA-FP
	Lobularia maritima	sweet alyssum	Limited	C	B	B	2.4	Coastal dune, coastal scrub, coastal prairie, riparian.	NW, CW, SW
	Lolium multiflorum	Italian ryegrass	Moderate	B	B	A	2.6	Grasslands, oak woodland, pinyon-juniper woodland; widely used for post-fire erosion control. Widespread. Impacts can vary with region.	CA-FP
	Ludwigia peploides ssp. *montevidensis*	creeping water-primrose	High	A	B	B	2.5	Freshwater aquatic systems. Clarification needed on taxonomic identification.	NW, SN, GV, CW, SW, DMoj
◆	*Ludwigia hexapetala* (= *L. uruguayensis*)	Uruguay water-primrose	High	A	B	C	2.6	Freshwater aquatic systems. Clarification needed on taxonomic identification.	NW, CW, SW
	Lythrum hyssopifolium	hyssop loosestrife	Limited	C	B	B	3.0	Grasslands, wetlands, vernal pools. Widespread. Impacts unknown, but appear to be minor.	CA-FP
	Lythrum salicaria	purple loosestrife	High	A	A	B	3.8	Wetlands, marshes, riparian areas	NW, GV, MP
	Marrubium vulgare	white horehound	Limited	C	C	B	2.8	Grasslands scrub, riparian areas. Widespread. Rarely in dense stands. Impacts relatively minor.	CA-FP, DMoj

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Medicago polymorpha	California burclover	Limited	C	C	A	2.8	Grasslands. Widespread weed of agriculture and disturbed areas. Impacts in wildlands minor.	CA-FP
	Mentha pulegium	pennyroyal	Moderate	C	A	A	2.7	Vernal pools, wetlands. Poisonous to livestock. Spreading rapidly. Impacts largely unknown.	CW, GV, NW, SW
◆	*Mesembryanthemum crystallinum*	crystalline iceplant	Moderate	B	B	C	3.7	Coastal bluffs, dunes, scrubs, grasslands. Limited distribution. Locally problematic, especially in southern CA.	CW, NW, SW
	Myoporum laetum	myoporum	Moderate	B	B	B	2.6	Coastal habitats, riparian areas. Mostly along the southern coast. Abiotic impacts unknown.	CW, SW
	Myosotis latifolia	common forget-me-not	Limited	C	B	B	2.2	Coniferous forest, riparian. Little information on impacts.	CA-FP
◆	*Myriophyllum aquaticum*	parrotfeather	High	A	B	C	2.8	Freshwater aquatic systems	NW, CaR, CW, SW
	Myriophyllum spicatum	Eurasian watermilfoil	High	A	A	B	2.8	Freshwater aquatic systems	SN, GV, CW
	Nicotiana glauca	tree tobacco	Moderate	B	B	B	2.5	Coastal scrub, grasslands, riparian woodland. Abiotic impacts unknown. Impacts vary locally. Rarely in dense stands.	NW, SN, GV, SW, D
	Olea europaea	olive	Limited	C	B	B	2.5	A problem in Australia. Rarely escapes in CA but is a concern due to the possibility of spread from planted groves.	CW, GV, NW, SW
	Ononis alopecuroides	foxtail restharrow	Limited	C	B	C	2.2	Grasslands, oak woodland. Highly invasive but impacts unknown. Nearly eradicated.	CW
	Onopordum acanthium	Scotch thistle	High	A	B	B	2.9	Wet meadows, sage brush, riparian areas	CA-FP, MP
	Oxalis pes-caprae	buttercup oxalis, Bermuda buttercup, yellow oxalis	Moderate	B	B	B	2.9	Coastal dunes, scrub, oak woodland. Impacts in coastal areas may prove more severe in time.	CW, NW, SW
	Parentucellia viscosa	yellow glandweed, sticky parentucellia	Limited	C	B	B	2.5	Coastal prairie, grassland, and dunes. Impacts unknown, but can be locally significant.	NW, CaR, SN, CW, SW
	Pennisetum clandestinum	kikuyugrass	Limited	C	C	B	2.3	Present at low levels in numerous wildland habitats. Impacts unknown. Common turf weed.	NW, CW, SW

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Pennisetum setaceum	crimson fountaingrass	Moderate	B	B	B	2.9	Coastal dunes and scrub, chaparral, grasslands. Some horticultural cultivars sterile. Very invasive in Hawaii.	CW, NW, SN, SW
	Phalaris aquatica	hardinggrass	Moderate	B	B	B	2.6	Coastal sites, especially moist soils. Limited distribution. Can be highly invasive locally.	CW, NW, SN, SW
	Phoenix canariensis	Canary Island date palm	Limited	C	B	D	2.3	Desert washes; agricultural crop plant. Limited distribution in southern CA. Impacts can be higher locally.	CW, SW
	Picris echioides	bristly oxtongue	Limited	C	B	B	2.4	Coastal prairie, scrub, riparian woodland. Widespread locally. Abiotic impacts unknown.	CA-FP
	Piptatherum miliaceum	smilograss	Limited	C	B	B	2.4	Coastal dunes, scrub, riparian, grassland. Expanding range. Impacts largely unknown.	GV, CW, SW
	Plantago lanceolata	buckhorn plantain, English plantain	Limited	C	C	B	2.1	Many habitats. Turf weed primarily. Low density and impact in wildlands.	CA-FP
	Poa pratensis	Kentucky bluegrass	Limited	C	B	B	2.7	Grasslands scrub, riparian areas. Widespread turf plant. Abiotic impacts unknown.	CA
◆	*Polygonum cuspidatum (=Fallopia japonica)*	Japanese knotweed	Moderate	B	B	D	2.7	Riparian areas, wetlands, forest edges. More severe impacts in NW wetlands. Distribution limited in CA.	NW, CaR, SN, GV, CW
◆	*Polygonum sachalinense*	Sakhalin knotweed	Moderate	B	A	D	2.5	Riparian areas. More severe impacts in NW wetlands. Distribution limited in CA.	NW, CaR, SN, GV, CW
	Polypogon monspeliensis and subspp.	rabbitfoot polypogon, rabbitgoot grass	Limited	C	C	B	2.3	Margins of ponds and streams, seasonally wet places, edge of coastal dunes. Widespread. Impacts appear to be minor.	CA
	Potamogeton crispus	curlyleaf pondweed	Moderate	B	B	B	3.2	Freshwater aquatic systems. Can be very invasive locally.	NW, GV, CW, SW, DMoj
	Prunus cerasifera	cherry plum, wild plum	Limited	C	B	B	1.8	Riparian habitats, chaparral, woodland. Limited distribution. Abiotic impacts unknown.	NW, CW
	Pyracantha angustifolia, P. crenulata, P. coccinea	pyracantha, firethorn	Limited	C	B	B	2.8	Coastal scrub and prairie, riparian areas. Horticultural escape. Impacts unknown or minor.	NW, CW, SW
	Ranunculus repens	creeping buttercup	Limited	C	C	B	2.9	Riparian areas, coniferous forest. Impacts appear to be minor to negligible in most areas.	NW, CaR, SN, CW, SW
	Raphanus sativus	radish	Limited	C	C	B	2.5	Present at low levels in numerous habitats. Widespread in disturbed sites.	CA-FP

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
◆	*Retama monosperma*	bridal broom	Moderate	B	B	C	1.8	Coastal scrub. Can spread rapidly but largely if uncontrolled. Limited distribution in CA.	SW
	Ricinus communis	castorbean	Limited	C	B	B	2.5	Coastal scrub and prairie, riparian areas. Widespread in southern CA. Impacts locally variable.	GV, CW, SW
	Robinia pseudoacacia	black locust	Limited	C	B	B	2.8	Riparian areas, canyons. Severe impacts in southern states. Impacts minor in CA.	CA-FP, GB
	Rubus armeniacus (= *R. discolor*)	Himalaya blackberry	High	A	A	A	3.0	Riparian areas, marshes, oak woodlands	CA-FP
	Rumex acetosella	red sorrel, sheep sorrel	Moderate	B	B	A	2.3	Many habitats, riparian areas, forest, wetlands. Widespread. Abiotic impacts unknown. Impacts can vary locally.	CA-FP
	Rumex crispus	curly dock	Limited	C	C	A	2.7	Grasslands, vernal pool, meadows, riparian. Widespread. Impacts appear to be minor.	CA
	Salsola paulsenii	barbwire Russian-thistle	Limited	C	C	C	2.9	Desert and Great Basin scrub. Limited distribution. Impacts in desert appear to be minor.	SW, SNE, DMoj
	Salsola tragus (=*S. kali*)	Russian-thistle	Limited	C	B	B	2.8	Desert dunes and scrub, alkali playa. Widespread. Impacts minor in wildlands.	CA
	Salvia aethiopis	Mediterranean sage	Limited	C	B	B	2.5	Sagebrush, juniper, bunchgrass. Limited distribution. Impacts minor but can be locally higher.	MP
◆	*Salvinia molesta*	giant salvinia	High	A	A	C	2.9	Freshwater aquatic systems	CW, DSon
◆	*Sapium sebiferum* (=*Triadica sebifera*)	Chinese tallowtree	Moderate	B	B	C	3.2	Riparian areas. Impacts severe in southeast US. Limited distribution, but spreading rapidly regionally.	GV
	Saponaria officinalis	bouncingbet	Limited	C	B	C	2.5	Riparian scrub and woodland. Impacts unknown or minor, but appear to be locally variable.	NW, GV, CW, SW, GB
	Schinus molle	Peruvian peppertree	Limited	C	B	B	2.5	Riparian. Limited distribution. Impacts largely unknown in CA.	GV, SN, CW, SW
	Schinus terebinthifolius	Brazilian peppertree	Limited	C	B	C	2.6	Riparian. Very invasive in tropics. Abiotic impacts unknown, but appear significant locally.	SW

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Schismus arabicus, S. barbatus	mediterranean-grass	Limited	B	C	A	2.3	Scrub, thorn woodland. Widespread in deserts. Impacts can be more important locally.	GV, CW, SW, D
	Senecio jacobaea	tansy ragwort	Limited	C	B	B	2.8	Grasslands, riparian. Impacts generally minor. Can be locally important in NW CA.	CA-FP
◆	*Sesbania punicea*	red sesbania, scarlet wisteria	High	A	B	C	3.2	Riparian areas	GV
	Silybum marianum	blessed milkthistle	Limited	C	C	A	3.5	Grasslands, riparian. Widespread, primarily in disturbed areas. Impacts can be higher locally	NW, GV, CW, SW
	Sinapis arvensis	wild mustard, charlock	Limited	C	C	C	2.9	Grasslands. Primarily in disturbed sites. Impacts minor or unknown in wildlands.	CA-FP
	Sisymbrium irio	London rocket	Moderate	B	B	A	1.9	Scrub, grasslands. Widespread. Primarily in disturbed sites. Impacts vary locally.	GV, SW
◆	*Spartina alterniflora* (and *S. alterniflora* x *foliosa* hybrids)	smooth cordgrass & hybrids, Atlantic cordgrass	High	A	A	C	3.5	San Francisco Bay salt marshes and mudflats. Hybridizes with native *S. foliosa*.	CW
◆	*Spartina anglica*	common cordgrass	Moderate	B	B	D	3.4	San Francisco Bay salt marshes. Very severe impact in other countries. Limited distribution in CA.	CW
◆	*Spartina densiflora*	dense-flowered cordgrass	High	A	B	C	3.3	San Francisco and Humboldt Bay salt marshes	NW, CW
	Spartina patens	saltmeadow cordgrass	Limited	C	C	D	2.9	San Francisco Bay salt marshes. Very limited distribution. Impacts currently minor in CA, but high in other countries.	CW
	Spartium junceum	Spanish broom	High	A	B	B	3.2	Coastal scrub, grasslands, wetlands, oak woodland, forests	NW, CW, SW
◆	*Stipa capensis*	Mediterranean steppegrass, twisted-awned speargrass	Moderate	B	B	D	1.9	Desert scrub. First recorded in CA 1995. Limited distribution, but spreading rapidly in CA deserts.	DSon
	Taeniatherum caput-medusae	medusahead	High	A	A	A	3.4	Grasslands, scrub, woodland	CaR, NW, SN, GV, SW

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TABLE 1: Invasive Non-Native Plants that Threaten Wildlands in California (continued)

Alert ◆	Scientific Name	Common Name	Rating	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Regions Invaded
	Tamarix aphylla	athel tamarisk	Limited	C	B	B	3.5	Desert washes, riparian areas. Limited distribution. Impacts minor, but can be locally higher.	GV, SW, D
	Tamarix parviflora	smallflower tamarisk	High	A	A	B	3.1	Riparian areas, desert washes, coastal scrub	NW, GV, CW, Dmoj
	Tamarix ramosissima	saltcedar, tamarisk	High	A	A	A	3.3	Desert washes, riparian areas, seeps and springs	SN, GV, CW, SW, D, SNE
	Tanacetum vulgare	common tansy	Moderate	B	B	B	2.3	Riparian areas, forest. Limited distribution. Severe problem in other western states.	NW, CaR,
	Torilis arvensis	hedgeparsley	Moderate	C	B	A	2.3	Expanding range. Appears to have only moderate ecological impacts.	CA-FP, especially CW, NW
	Trifolium hirtum	rose clover	Moderate	C	B	B	2.8	Grasslands, oak woodland. Widely planted in CA. Impacts relatively minor in most areas.	CA-FP
	Ulex europaeus	gorse	High	A	B	B	2.9	Scrub, woodland, forest, coastal grassland	NW, CaR, SN, CW
	Undaria pinnatifida	wakame	Limited	C	B	C	3.3	Algae of estuaries. First recorded in CA in 2000. Impacts unknown, but do not appear to be significant	CW, SW
	Verbascum thapsus	common mullein, woolly mullein	Limited	C	B	B	3.8	Meadows, riparian, sagebrush, pinyon-juniper woodlands. Widespread. Impacts minor.	NW, CaR, SN
	Vinca major	big periwinkle	Moderate	B	B	B	2.8	Riparian, oak woodlands, coastal scrub. Distribution currently limited but spreading in riparian areas. Impacts can be higher locally.	CaR, SW, SN, GV
	Vulpia myuros	rattail fescue	Moderate	B	B	A	3.0	Coastal sage scrub, chaparral. Widespread. Rarely forms monotypic stands, but locally problematic.	CA-FP, D
◆	*Washingtonia robusta*	Mexican fan palm	Moderate	B	B	C	2.7	Desert washes. Limited distribution but spreading in southern CA. Impacts can be higher locally.	SW
	Watsonia meriana	bulbil watsonia	Limited	C	B	C	2.3	Coastal prairie, coniferous forest. Abiotic impacts unknown, but may be locally dense.	NW
	Zantesdeschia aethiopica	calla lily	Limited	C	B	C	2.1	Coastal prairie, wetlands. Impacts high in other countries and local impacts may be high in CA.	NW, CW, SW

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TABLE 2: Species Native to Part of California, but Invasive in Other Parts of the State

A few native species have become invasive in regions outside their natural range. This table lists those species that cause negative impacts in their introduced range. No overall rating is provided, since impacts are not statewide, but the section scores for each of the three plants assessed would result in Moderate ratings for the areas in which they are invasive.

Scientific Name	Common Name	Impacts	Invasiveness	Distribution	Doc. Level	Ecological Types Invaded and Other Comments	Native Range	Invasive Range
Cupressus macrocarpa	Monterey cypress	B	B	B	2.3	Native to Monterey area. Invades coastal prairie, desert scrub, riparian areas.	CW	NW
Lupinus arboreus	yellow bush lupine	B	B	B	3.5	Native south of Point Reyes. Invasive in north coast dunes.	SW, CW Bay Area	NW
Phragmites australis	common reed	Unable to score.				Genetic issues make it unclear which strains are native to CA.	Uncertain	
Pinus radiata cultivars	Monterey pine	B	B	B	2.6	Five populations native to CA. Invades coastal scrub, prairie, and chaparral.	CW	NW

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TABLE 3: Species Evaluated But Not Listed

In general, this designation is for species for which information is currently inadequate to respond with certainty to the minimum number of criteria questions (i.e., too many "U" responses), or for which the sum effects of Ecological Impacts, Invasive Potential, and Ecological Amplitude and Distribution fall below the threshold for ranking (i.e. the overall score falls below Limited). Many such species are widespread but are not known to have substantial ecological impacts (though such evidence may appear in the future). All species receiving a D score for Ecological Impacts, regardless of other section scores, are by default placed into this category.

Scientific Name	Common Name	Impacts	Invasiveness	Distribution	Doc. Level	Comments
Acacia paradoxa	kangaroothorn	D	C	C	2.5	Does not spread in wildlands.
Aeschynomene rudis	rough jointvetch	D	C	D	3.2	Serious agricultural weed, but not known to have impacts in wildlands.
Aira caryophyllea	silver hairgrass	D	C	A	2.6	Widespread in grasslands, but impacts appear negligible.
Aira praecox	European hairgrass	D	C	C	2.8	Appears to be spreading locally, but impacts unknown.
Albizia lophantha	plume acacia	U	B	C	1.5	Present in Golden Gate National Recreation Area. Need more information
Allium triquetrum	three-cornered leak	U	C	C	1.6	Impacts unknown.
Anthemis cotula	mayweed chamomile, dog fennel	D	B	B	2.4	Abiotic and wildife impacts unknown
Bellis perennis	English daisy	D	C	C	2.8	Present along trails, not known to spread into undisturbed areas.
Berberis darwinii	Darwin barberry	U	B	D	2.1	Impacts unknown.
Buddleja davidii	butterflybush	D	B	D	2.5	Not known to be invasive in CA, although it is a problem in Oregon.
Cestrum parqui	willow jessamine	U	B	C	2.0	Impacts unknown.
Chorispora tenella	blue mustard	U	C	C	1.5	Impacts unknown.
Cistus ladanifer	gum rockrose	D	C	C	3.3	Negligible known impacts in wildlands.
Convolvulus arvensis	field bindweed	D	B	B	3.5	Only known as agricultural weed.
Daucus carota	wild carrot, Queen Anne's lace	D	C	B	2.7	Very widespread, but primarily in disturbed sites, particularly roadsides.
Dimorphotheca sinuata	African daisy	D	C	B	1.8	Impacts to abiotic processes and plant communities unknown.
Erigeron karvinskianus	Mexican daisy	U	B	C	1.9	Impacts unknown, but appears to be expanding. May become more problematic in future.
Erodium botrys	broadleaf filaree	D	C	A	2.8	Present in wildlands but known impacts are negligible. Often transient.
Erodium brachycarpum	short-fruited filaree	D	C	A	2.6	Present in wildlands but known impacts are negligible. Often transient.
Erodium moschatum	whitestem filaree	D	C	A	2.7	Primarily an agricultural weed, little impact in wildlands.
Euphorbia lathyris	caper spurge	D	C	B	2.2	Abiotic impacts unknown.
Fumaria officinalis	fumitory	D	C	D	2.3	Abiotic impacts unknown.
Geranium molle	dovefoot geranium	D	B	A	1.7	Present in wildlands, but known impacts are negligible.

TABLE 3: Species Evaluated But Not Listed (continued)

Scientific Name	Common Name	Impacts	Invasiveness	Distribution	Doc. Level	Comments
Geranium retrorsum	New Zealand geranium	D	B	B	1.9	Present in wildlands, but known impacts are negligible.
Geranium robertianum	herb-robert, Robert geranium	D	B	C	2.8	Present in wildlands, but known impacts are negligible.
Gleditsia triacanthos	honey locust	D	B	C	3.3	Very limited distribution.
Lactuca serriola	prickly lettuce	D	C	B	3.1	Primarily an agricultural and roadside weed.
Leptospermum laevigatum	Australian tea tree	D	C	D	2.2	Very limited distribution.
Ligustrum lucidum	glossy privet	D	B	C	3.1	May prove problematic in riparian areas.
Lotus corniculatus	birdsfoot trefoil	D	B	B	2.8	Primarily a turf or agricultural weed in CA.
Malephora crocea	coppery mesembryanthemum	D	C	C	2.0	A problem on southern CA islands, but statewide impacts are limited.
Maytenus boaria	mayten	D	C	D	2.4	Infestation on Angel Island, San Francisco Bay.
Melilotus officinalis	yellow sweetclover	D	C	C	3.3	Present in human-disturbed habitats only.
Nerium oleander	oleander	D	B	D	2.6	Not known to be invasive, although reported from riparian areas in Central Valley and San Bernardino Mtns.
Nothoscordum gracile	false garlic	D	B	D	2.1	Mainly an urban garden weed.
Nymphaea odorata	fragrant waterlily	D	B	C	2.3	Present only at one site.
Oxalis corniculata	creeping woodsorrel	D	C	C	2.2	Primarily a turf weed in CA.
Parkinsonia aculeata	Mexican palo-verde	D	B	D	2.2	Has not escaped into wildlands enough to cause impacts.
Pistachia chinensis	Chinese pistache	U	C	D	0.9	Impacts unknown.
Pittosporum undulatum	Victorian box	D	C	D	2.7	Infestations in CA are small. More problematic on north coast.
Plantago coronopus	cutleaf plaintain	U	C	B	1.7	Impacts unknown. Common on north coast.
Solanum elaeagnifolium	silverleaf nightshade	D	B	B	2.8	Primarily an agricultural weed, but escaping to wildlands in other countries. May prove to be more important in future.
Sonchus asper	spiny sowthistle	D	B	B	3.1	Primarily an agricultural weed.
Taraxacum officinale	common dandelion	D	B	B	2.8	Primarily a turf weed in CA.
Tragopogon dubius	yellow salsify	D	C	B	3.2	Generally a minor component of disturbed areas.
Tropaeolum majus	garden nasturtium	D	C	C	1.4	Impacts on abiotic processes and native plants unknown.
Ulmus pumila	Siberian elm	D	B	B	2.5	Impacts unknown.
Verbena bonariensis, V. litoralis	tall vervain, seashore vervain	D	B	C	2.1	Often in disturbed areas of irrigation canals.
Vicia villosa	hairy vetch	D	C	B	2.8	Primarily an agricultural weed. Widespread but impacts minor in wildlands.
Vulpia bromoides	squirreltail fescue	D	C	B	2.9	Less common than *V. myuros*.

TABLE 4: Species Nominated but Not Reviewed

The following species were nominated for review, but not evaluated because either they are not known to escape into wildlands or we lacked sufficient information to complete an assessment.

Scientific Name	Common Name	Comments
Aptenia cordifolia	baby sun rose, heartleaf iceplant	Occasional ornamental escape.
Araujia sericifera	bladderflower	Need more information.
Brassica oleracea	cabbage	Disturbed areas along north and central coast.
Catalpa bignonioides	southern catalpa	Reported from Sacramento/San Joaquin Valley riparian corridors. Need more information.
Chrysanthemum segetum	corn daisy	Disturbed areas only.
Coprosma repens	creeping mirrorplant	1999 Cal-EPPC list indicated no evidence of wildland threat.
Crepis capillaris	smooth hawksbeard	Primarily in pastures and roadsides in coastal areas of northwest CA.
Erica lusitanica	Spanish heath	Reported from Humboldt and Del Norte Cos. Need more information.
Eriogonum fasciculatum	California buckwheat	Invades along roadsides and other areas of human disturbance. Not known to threaten wildlands.
Gazania linearis	gazania	Reported to invade in San Francisco Bay Area. Need more information.
Grindelia squarrosa	curlycup gumweed, gumplant	Mainly along roadsides. More a problem in Nevada.
Kniphofia uvaria	redhot poker	Primarily along roadsides.
Lathyrus latifolius	perennial sweetpea	Reported from the north coast. Need more information.
Lathyrus tingitanus	Tangier pea	Along roadsides. Need more information.
Limonium ramosissimum ssp. *provinciale*	sea-lavender	Present in salt marshes. Need more information.
Melilotus indicus	Indian sweetclover	Reported from disturbed sites. Need more information.
Mesembryanthemum nodiflorum	slenderleaf iceplant	Common in San Diego area along coast. Need more information on impacts.
Osteospermum fruticosum	shrubby daisybush	Occasional ornamental escape in southern CA. Does not appear to be invasive.
Passiflora caerulea	blue passionflower	Not known to invade wildlands.
Phalaris arundinacea	reed canarygrass	*Jepson Manual* lists it as native in CA. Acts like a native in most areas of the state. A problem in NW states.
Phoenix dactylifera	date palm	Reported from southern CA deserts. Need more information.
Phytolacca americana	pokeweed	Reported invading riparian areas in northern Sacramento Valley. Need more information.
Salsola soda	glasswort	Reported from San Francisco Bay shorelines and creek mouths. Need more information.
Ulmus parvifolia	Chinese elm	Present in disturbed areas or old homesites only.
Watsonia borbonica	watsonia	May be confused with *W. meriana*, which is invasive in Mendocino Co.
Zoysia spp.	zoysiagrass	Does not appear to have escaped from turf.

APPENDIX 1. Species Listed by Category

◆ = Alert

High

Aegilops triuncialis (barb goatgrass)

◆ *Alternanthera philoxeroides* (alligatorweed)

Ammophila arenaria (European beachgrass)

Arundo donax (giant reed)

Brassica tournefortii (Saharan mustard, African mustard)

Bromus madritensis ssp. *rubens* (=*B. rubens*) (red brome)

Bromus tectorum (downy brome, cheatgrass)

Carpobrotus edulis (Hottentot-fig, iceplant)

Centaurea maculosa (=*C. biebersteinii*) (spotted knapweed)

Centaurea solstitialis (yellow starthistle)

Cortaderia jubata (jubatagrass)

Cortaderia selloana (pampasgrass)

Cytisus scoparius (Scotch broom)

Delairea odorata (=*Senecio mikanioides*) (Cape-ivy, German-ivy)

Egeria densa (Brazilian egeria)

Ehrharta calycina (purple veldtgrass)

◆ *Eichhornia crassipes* (water hyacinth)

◆ *Euphorbia esula* (leafy spurge)

Foeniculum vulgare (fennel)

Genista monspessulana (French broom)

Hedera helix, H. canariensis (English ivy, Algerian ivy)

◆ *Hydrilla verticillata* (hydrilla)

Lepidium latifolium (perennial pepperweed, tall whitetop)

◆ *Ludwigia hexapetala* (=*L. uruguayensis*) (Uruguay water-primrose)

Ludwigia peploides ssp. *montevidensis* (creeping water-primrose)

Lythrum salicaria (purple loosestrife)

◆ *Myriophyllum aquaticum* (parrotfeather)

Myriophyllum spicatum (Eurasian watermilfoil)

Onopordum acanthium (Scotch thistle)

Rubus armeniacus (=*R. discolor*) (Himalaya blackberry, Armenian blackberry)

◆ *Salvinia molesta* (giant salvinia)

◆ *Sesbania punicea* (red sesbania, scarlet wisteria)

◆ *Spartina alterniflora* hybrids (smooth cordgrass, Atlantic cordgrass)

◆ *Spartina densiflora* (dense-flowered cordgrass)

Spartium junceum (Spanish broom)

Taeniatherum caput-medusae (medusahead)

Tamarix parviflora (smallflower tamarisk)

Tamarix ramosissima (saltcedar, tamarisk)

Ulex europaeus (gorse)

Moderate

Ageratina adenophora (croftonweed, eupatorium)

Ailanthus altissima (tree-of-heaven)

Alhagi maurorum (=*A. pseudalhagi*) (camelthorn)

Anthoxanthum odoratum (sweet vernalgrass)

◆ *Arctotheca calendula* (fertile) (fertile capeweed)

Arctotheca calendula (sterile) (sterile capeweed)

◆ *Asparagus asparagoides* (bridal creeper, smilax asparagus)

◆ *Asphodelus fistulosus* (onionweed)

Atriplex semibaccata (Australian saltbush)

Avena barbata (slender wild oat)

Avena fatua (wild oat)

◆ *Brachypodium sylvaticum* (perennial false-brome)

Brassica nigra (black mustard)

Bromus diandrus (ripgut brome)

◆ *Cardaria chalepensis* (=*C. draba* ssp. *chalepensis*) (lens-podded whitetop)

Cardaria draba (hoary cress)

Carduus nutans (musk thistle)

Carduus pycnocephalus (Italian thistle)

Carpobrotus chilensis (sea-fig, iceplant)

◆ *Carthamus lanatus* (woolly distaff thistle)

Moderate *(continued)*

Centaurea calcitrapa (purple starthistle)

◆ *Centaurea debeauxii* (=*C.* x *pratensis*) (meadow knapweed)

Centaurea melitensis (Malta starthistle, tocalote)

Centaurea virgata ssp. *squarrosa* (=*C. squarrosa*) (squarrose knapweed)

Chondrilla juncea (rush skeletonweed)

Chrysanthemum coronarium (crown daisy)

Cirsium arvense (Canada thistle)

Cirsium vulgare (bull thistle)

Conium maculatum (poison-hemlock)

Cotoneaster franchetii (orange cotoneaster)

Cotoneaster lacteus (Parney's cotoneaster)

Cotoneaster pannosus (silverleaf cotoneaster)

Cynara cardunculus (artichoke thistle)

Cynodon dactylon (bermudagrass)

Cynoglossum officinale (houndstongue)

Cynosurus echinatus (hedgehog dogtailgrass)

Cytisus striatus (Portuguese broom, striated broom)

Dipsacus fullonum (wild teasel)

Dipsacus sativus (fuller's teasel)

◆ *Dittrichia graveolens* (stinkwort)

Ehrharta erecta (erect veldtgrass)

◆ *Ehrharta longiflora* (long-flowered veldtgrass)

Elaeagnus angustifolia (Russian-olive)

◆ *Emex spinosa* (spiny emex, devil's thorn)

Erechtites glomerata, E. minima (Australian fireweed, Australian burnweed)

Eucalyptus globulus (Tasmanian blue gum)

◆ *Euphorbia terracina* (carnation spurge)

Festuca arundinacea (tall fescue)

Ficus carica (edible fig)

Geranium dissectum (cutleaf geranium)

Glyceria declinata (waxy mannagrass)

Halogeton glomeratus (halogeton)

Hirschfeldia incana (shortpod mustard, summer mustard)

Holcus lanatus (common velvetgrass)

Hordeum marinum, H. murinum (Mediterranean barley, hare barley, wall barley)

◆ *Hypericum canariense* (Canary Island hypericum)

Hypericum perforatum (common St. Johnswort, klamathweed)

Hypochaeris radicata (rough catsear, hairy dandelion)

◆ *Ilex aquifolium* (English holly)

Isatis tinctoria (dyer's woad)

Kochia scoparia (kochia)

Leucanthemum vulgare (oxeye daisy)

Linaria genistifolia ssp. *dalmatica* (=*L. dalmatica*) (Dalmation toadflax)

Lolium multiflorum (Italian ryegrass)

Lythrum hyssopifolium (hyssop loosestrife)

Mentha pulegium (pennyroyal)

◆ *Mesembryanthemum crystallinum* (crystalline iceplant)

Myoporum laetum (myoporum)

Nicotiana glauca (tree tobacco)

Oxalis pes-caprae (buttercup oxalis, yellow oxalis, Bermuda buttercup)

Pennisetum setaceum (crimson fountaingrass)

Phalaris aquatica (hardinggrass)

◆ *Polygonum cuspidatum* (=*Fallopia japonica*) (Japanese knotweed)

◆ *Polygonum sachalinense* (Sakhalin knotweed, giant knotweed)

Potamogeton crispus (curlyleaf pondweed)

◆ *Retama monosperma* (bridal broom)

Rumex acetosella (red sorrel, sheep sorrel)

◆ *Sapium sebiferum* (Chinese tallowtree)

Sisymbrium irio (London rocket)

◆ *Spartina anglica* (common cordgrass)

◆ *Stipa capensis* (Mediterranean steppegrass, twisted-awned speargrass)

Tanacetum vulgare (common tansy)

Torilis arvensis (hedgeparsley)

Trifolium hirtum (rose clover)

Vinca major (big periwinkle)

Vulpia myuros (rattail fescue)

◆ *Washingtonia robusta* (Mexican fan palm, Washington palm)

APPENDIX 1: Species Listed by Category (continued)

Limited

Acacia melanoxylon (black acacia, blackwood acacia)

Agrostis avenacea (Pacific bentgrass)

Agrostis stolonifera (creeping bentgrass)

Bassia hyssopifolia (fivehook bassia)

Bellardia trixago (bellardia)

Brassica rapa (birdsrape mustard, field mustard)

Briza maxima (big quackinggrass, rattlesnakegrass)

Bromus hordeaceus (soft brome)

Cakile maritima (European sea-rocket)

Cardaria pubescens (hairy whitetop)

Carduus acanthoides (plumeless thistle)

Carduus tenuifolius (slenderflower thistle)

Conicosia pugioniformis (narrowleaf iceplant)

Cordyline australis (giant dracaena, New Zealand-cabbage tree)

Cotula coronopifolia (brassbuttons)

Crataegus monogyna (English hawthorn)

Crocosmia x *crocosmiiflora* (montbretia)

Crupina vulgaris (common crupina, bearded creeper)

Dactylis glomerata (orchardgrass)

Descurainia sophia (flixweed, tansy mustard)

Digitalis purpurea (foxglove)

Echium candicans (pride-of-Madeira)

Erodium cicutarium (redstem filaree)

Eucalyptus camaldulensis (red gum)

Euphorbia oblongata (oblong spurge)

Helichrysum petiolare (licoriceplant)

Hypochaeris glabra (smooth catsear)

Iris pseudacorus (yellowflag iris)

Lobularia maritima (sweet alyssum)

Marrubium vulgare (white horehound)

Medicago polymorpha (California burclover)

Myosotis latifolia (common forget-me-not)

Olea europaea (olive)

Ononis alopecuroides (foxtail restharrow)

Parentucellia viscosa (yellow glandweed, sticky parentucellia)

Pennisetum clandestinum (kikuyugrass)

Phoenix canariensis (Canary Island date palm)

Picris echioides (bristly oxtongue)

Piptatherum miliaceum (smilograss)

Plantago lanceolata (buckhorn plantain, English plantain)

Poa pratensis (Kentucky bluegrass)

Polypogon monspeliensis and subspp. (rabbitfoot polypogon, annual beardgrass, rabbitfoot grass)

Prunus cerasifera (cherry plum, wild plum)

Pyracantha angustifolia, P. crenulata, P. coccinea, etc. (pyracantha, firethorn)

Ranunculus repens (creeping buttercup)

Raphanus sativus (radish)

Ricinus communis (castorbean)

Robinia pseudoacacia (black locust)

Rumex crispus (curly dock)

Salsola paulsenii (barbwire Russian-thistle)

Salsola tragus (Russian-thistle)

Salvia aethiopis (Mediterranean sage)

Saponaria officinalis (bouncingbet)

Schinus molle (Peruvian peppertree)

Schinus terebinthifolius (Brazilian peppertree)

Schismus arabicus, S. barbatus (mediterraneangrass)

Senecio jacobaea (tansy ragwort)

Silybum marianum (blessed milkthistle)

Sinapis arvensis (wild mustard, charlock)

Spartina patens (saltmeadow cordgrass)

Tamarix aphylla (athel tamarisk)

Undaria pinnatifida (wakame)

Verbascum thapsus (common mullein, woolly mullein)

Watsonia meriana (bulbil watsonia)

Zantedeschia aethiopica (calla lily)

APPENDIX 2. Cal-IPC Species Listed by Other Ratings Systems

This table is provided so that those familiar with other commonly-used ratings systems may compare those lists to the 2006 Cal-IPC ratings. See the cited websites for explanations of rating systems. Species not included in this appendix do not appear on any of these lists.

CAL-EPPC 1999 – Cal-EPPC. 1999. The Cal-EPPC List: Exotic Pest Plants of Greatest Ecological Concern in California. California Exotic Pest Plant Council: San Juan Capistrano, CA. Available: www.cal-ipc.org.

CDFA – CDFA. 2005. EncycloWeedia: Notes on Identification, Biology, and Management of Plants Defined as Noxious Weeds by California Law. California Department of Food and Agriculture: Sacramento, CA. Available: www.cdfa.ca.gov/weedhome.

USDA – Plant Protection and Quarantine. 2002. Federal Noxious Weed List. USDA Animal and Plant Health Inspection Service. US Department of Agriculture: Washington, D.C. Available: plants.usda.gov.

AZ – Arizona Invasive Plant Working Group. 2005. Invasive Non-native Plants that Threaten Wildlands in Arizona. Southwest Vegetation Management Association. Available: www.swvma.org.

NATURESERVE – NatureServe. 2005. Invasive Species Impact Ranks for the United States: Summary of Results as of January 10, 2005. NatureServe: Arlington, VA. Available: www.natureserve.org.

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Acacia melanoxylon	Need More Info				Medium/Insignificant
Acacia paradoxa		B			
Acroptilon repens		B		High	High/Medium
Aegilops triuncialis	Annual Grasses	B			
Aeschynomene rudis	Need More Info	A			
Ageratina adenophora	B		✔		
Agrostis avenacea	Need More Info				
Ailanthus altissima	A-2	*			Medium/Low
Aira caryophyllea					Medium/Insignificant
Albizia lophantha	Considered, not listed				
Alhagi maurorum (=*A. pseudalhagi*)	Red Alert	A		Medium	Medium/Low
Alternanthera philoxeroides		A			Medium
Ammophila arenaria	A-1				High/Medium
Anthemis cotula					Medium/Insignificant
Anthoxanthum odoratum	Considered, not listed				
Aptenia cordifolia	Need More Info				
Araujia sericifera		B			
Arctotheca calendula (fertile strains)	Red Alert	A			

APPENDIX 2: Cal-IPC Species Listed by Other Rating Systems (continued)

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Arundo donax	A-1	*		High	High
Asparagus asparagoides					Low/Insignificant
Asphodelus fistulosus	Need More Info		✔	Low	
Atriplex semibaccata	A-2				High/Low
Avena barbata	Annual Grasses				
Avena fatua	Annual Grasses			Medium	High/Low
Bassia hyssopifolia	B				Low/Insignificant
Bellardia trixago	B				Medium/Insignificant
Brachypodium sylvaticum					High/Low
Brassica nigra	B				
Brassica tournefortii	A-2			Medium	High/Low
Bromus diandrus	Annual Grasses			Medium-Alert	
Bromus madritensis ssp. *rubens* (=*B. rubens*)	A-2			High	
Bromus tectorum	A-1			High	High
Buddleja davidii					High/Low
Cardaria chalepensis (=*C. draba* ssp. *chalepensis*)	B	B		Medium-Alert	
Cardaria draba	A-2	B		Medium-Alert	
Cardaria pubescens		B		Medium-Alert	
Carduus acanthoides	Need More Info	A			Medium/Low
Carduus nutans		A		Medium	High/Low
Carduus pycnocephalus	B	C			Medium
Carduus tenuifolius		C			Unknown
Carpobrotus chilensis	Considered, not listed				Medium
Carpobrotus edulis	A-1				High
Carthamus lanatus		B			
Centaurea debeauxii (=*C.* x *pratensis*)		A			
Centaurea diffusa		A		Medium	
Centaurea maculosa (=*C. biebersteinii*)	Red Alert	A		Medium	
Centaurea melitensis	B	C		Medium	Medium/Low
Centaurea solstitialis	A-1	C		High	High/Medium
Centaurea virgata ssp. *squarrosa* (=*C. squarrosa*)		A			
Chondrilla juncea		A		Medium-Alert	Medium/Insignificant
Chorispora tenella		B			Insignificant
Cirsium arvense	B	B		Medium	
Cirsium vulgare	B	*		Low	
Cistus ladanifer	Need More Info				
Conicosia pugioniformis	A-2				

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APPENDIX 2: Cal-IPC Species Listed by Other Rating Systems (continued)

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Conium maculatum	B			Medium-Alert	Medium/Low
Convolvulus arvensis	Considered, not listed	C		Medium	Medium/Low
Coprosma repens	Considered, not listed				
Cordyline australis	Need More Info				
Cortaderia jubata	A-1	*			Medium
Cortaderia selloana	A-1			Medium	Medium/Low
Cotoneaster franchetii	Need More Info				
Cotoneaster lacteus	A-2				
Cotoneaster pannosus	A-2				Medium
Crataegus monogyna	B				
Crocosmia x crocosmiiflora	Considered, not listed				
Crupina vulgaris	Red Alert	A	✔		Medium/Low
Cupressus macrocarpa	Need More Info				
Cynara cardunculus	A-1	B			Medium
Cynodon dactylon		C		Medium	Medium/Low
Cynoglossum officinale				Low	Medium/Low
Cytisus scoparius	A-1	C			High/Medium
Cytisus striatus	A-2				
Dactylis glomerata					Medium/Insig
Daucus carota					Low
Delairea odorata	A-1	*			Medium
Descurainia sophia	Need More Info				Medium/Low
Digitalis purpurea	Considered, not listed				Medium/Insignificant
Dimorphotheca sinuata	Need More Info				
Dipsacus fullonum	Considered, not listed				High/Low
Dipsacus sativus	Considered, not listed				
Echium candicans	Need More Info				
Egeria densa	A-2	C			High/Medium
Ehrharta calycina	A-2				Medium/Low
Ehrharta erecta	B				Medium/Insignificant
Ehrharta longiflora	Need More Info				
Eichhornia crassipes	A-2			High-Alert	High
Elaeagnus angustifolia	A-2			High	High
Emex spinosa			✔		Insignificant
Erechtites glomerata, E. minima	B				Medium/Insignificant
Erica lusitanica	Need More Info				
Erodium brachycarpum					Insignificant

APPENDIX 2: Cal-IPC Species Listed by Other Rating Systems (continued)

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Erodium cicutarium				Medium	Medium/Low
Eucalyptus globulus	A-1				Medium
Euphorbia esula	A-2	A		High-Alert	High/Medium
Euphorbia lathyris	Need More Info				
Euphorbia oblongata		B			
Festuca arundinacea	B				
Ficus carica	A-2				Medium
Foeniculum vulgare	A-1				Medium/Low
Fumaria officinalis	Considered, not listed				
Gazania linearis	Need More Info				
Genista monspessulana	A-1	C			Medium
Glyceria declinata	Need More Info				
Halogeton glomeratus	Red Alert	A			High/Medium
Hedera helix	B				High/Medium
Hedera canariensis	Need More Info				
Helichrysum petiolare	Red Alert				
Hirschfeldia incana	Need More Info				High/Low
Holcus lanatus	B				
Hordeum marinum, H. murinum				Medium	High/Low
Hydrilla verticillata	Red Alert	A	✔	Not listed	High/Medium
Hypericum canariense	Need More Info				Low
Hypericum perforatum	B	C			High/Medium
Hypochaeris radicata	Need More Info				High/Low
Ilex aquifolium	B				High/Low
Iris pseudacorus	B				
Isatis tinctoria	Need More Info	B			High/Low
Lactuca serriola					Low/Insignificant
Lepidium latifolium	A-1	B		High-Alert	High
Leucanthemum vulgare	B			Low	Medium/Low
Ligustrum lucidum	Need More Info				
Limonium ramosissimum ssp. *provincale*	Need More Info				
Linaria genistifolia ssp. *dalmatica* (=*L. dalmatica*)		A		Medium-Alert	
Lolium multiflorum	Annual Grasses				
Lotus corniculatus					Medium/Low
Ludwigia hexapetala (=*L. uruguayensis*)	Need More Info				
Lupinus arboreus	A-2				
Lythrum salicaria	Red Alert	B			

APPENDIX 2: Cal-IPC Species Listed by Other Rating Systems (continued)

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Malephora crocea	Need More Info				
Marrubium vulgare					Medium/Low
Maytenus boaria	Need More Info				
Medicago polymorpha	Considered, not listed				
Melilotus officinalis	Considered, not listed			Medium	Medium/Low
Mentha pulegium	A-2				
Mesembryanthemum crystallinum	B			Low	
Mesembryanthemum nodiflorum	Need More Info			Medium-Alert	
Myoporum laetum	A-2				
Myriophyllum aquaticum	B			High-Alert	High/Medium
Myriophyllum spicatum	A-1			High-Alert	High
Nerium oleander	Considered, not listed				Low/Insignificant
Nicotiana glauca	Need More Info				High/Low
Olea europaea	B				
Ononis alopecuroides	Red Alert	Q			
Onopordum acanthium		A		Low	
Oxalis pes-caprae	Need More Info				
Parentucellia viscosa	Need More Info				
Passiflora caerulea	Need More Info				
Pennisetum clandestinum	Need More Info	C	✔		
Pennisetum setaceum	A-1			High	High/Medium
Phalaris aquatica	B				
Picris echioides	Considered, not listed				
Pinus radiata cultivars	Need More Info				
Piptatherum miliaceum	Need More Info				
Pistachia chinensis	Need More Info				
Pittosporum undulatum					High/Low
Plantago lanceolata					High/Low
Polygonum cuspidatum (=*Fallopia japonica*)		B			
Polygonum sachalinense					High/Medium
Polypogon monspeliensis and subspp.					High/Low
Potamogeton crispus	B				Medium
Prunus cerasifera	Need More Info				Medium/Insignificant
Pyracantha angustifolia, crenulata, coccinea, etc.	Need More Info				Hi/Low, Low/Insig
Ranunculus repens					High/Medium
Retama monosperma	Red Alert				
Ricinus communis	B				

APPENDIX 2: Cal-IPC Species Listed by Other Rating Systems (continued)

Scientific Name	Cal-EPPC 1999	CDFA	USDA	Arizona	NatureServe
Robinia pseudoacacia	B				
Rubus armeniacus (=*R. discolor*)	A-1			Medium-Alert	Medium/Insignificant
Salsola paulsenii		C		Medium	Low
Salsola soda	Need More Info				
Salsola tragus (=*S. kali*)	Need More Info	C		Medium	
Salvia aethiopis	Need More Info	B			Low
Salvinia molesta	Red Alert		✔	High-Alert	Medium
Sapium sebiferum	Red Alert				
Saponaria officinalis	A-2				Low/Insignificant
Schinus molle	B				Medium/Low
Schinus terebinthifolius	B				
Schismus arabicus, S. barbatus	Annual Grasses			Medium	Medium, Hi/Medium
Senecio jacobaea	B	B			Low
Sesbania punicea	Red Alert				
Silybum marianum	Considered, not listed				Medium/Low
Sisymbrium irio					Medium/Insignificant
Solanum elaeagnifolium		B			
Sonchus asper				Medium	
Spartina alterniflora hybrids	A-2				
Spartina anglica	Red Alert				
Spartina densiflora	Red Alert				High/Medium
Spartina patens	Red Alert				
Spartium junceum	B	*			
Stipa capensis	Need More Info				
Taeniatherum caput-medusae	A-1	C			High
Tamarix aphylla	Need More Info			Low	
Tamarix parviflora	A-1	*			
Tamarix ramosissima	A-1	*		High	High
Tanacetum vulgare	Need More Info				Low
Ulex europaeus	A-1	B			
Ulmus pumila				Medium	Medium/Low
Verbascum thapsus	B			Not listed	Medium
Verbena bonariensis, V. litoralis	Need More Info				
Vinca major	B			Medium-Alert	
Zantesdeschia aethiopica	Considered, not listed				Medium/Low
Zoysia spp.	Considered, not listed				

*Under consideration. Not yet rated.

APPENDIX 3. Examples of Ecological Types

These ecological types were used to score the Distribution section of plant assessment forms. Adapted from "Preliminary Descriptions of the Terrestrial Natural Communities of California" drafted by R. F. Holland for the California Department of Fish and Game (1986). Communities within minor ecotypes include all those listed in Holland (1986). Additional information from Sawyer, J. O., and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society: Sacramento, CA.

Major Ecological Types	Minor Ecological Types	Communities within Minor Ecotypes
Marine Systems	marine systems	kelp and other macroalgae
Freshwater and Estuarine Aquatic Systems	lakes, ponds, reservoirs	submergent and emergent vegetation in standing water
	rivers, streams, canals	submergent and emergent vegetation in moving ephemeral, intermittent or perennial water
	estuaries	submergent vegetation in estuaries (seagrass beds)
Dunes	coastal	foredunes, dune scrub
	desert	desert dunes and sand fields
	interior	interior and relictual dunes, primarily in the Great Valley
Scrub and Chaparral	coastal bluff scrub	northern and southern coastal bluff scrub
	coastal scrub	coyote bush, salal, silk-tassel, coastal sage, maritime succulent, Diegan coastal, Diablan, and Riversidian sage scrubs
	Sonoran desert scrub	Sonoran creosote bush, Sonoran mixed woody and succulent scrubs
	Mojavean desert scrub	Mojave creosote bush, blackbush, Mojave mixed woody, Mojave mixed steppe, and Mojave wash scrubs; Joshua tree woodland
	Great Basin scrub	big sagebrush and rabbitbrush scrubs; sagebrush steppe
	chenopod scrub	desert saltbush, desert sink, desert greasewood, shadscale, valley sink, and valley saltbush scrubs
	montane dwarf scrub	low sagebrush series
	Upper Sonoran subshrub scrub	bladderpod-California ephedra-narrowleaf goldenbush series
	chaparral	mixed, redshank, semi-desert, and montane (mixed, ceanothus, manzanita) chaparrals; chamise
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	coastal terrace and bald hills prairies
	valley and foothill grassland	valley needlegrass, valley sacaton, serpentine bunchgrass, valley wildrye and, pine bluegrass grasslands
	Great Basin grassland	open, steppe-like vegetation of perennial bunchgrasses
	vernal pool	hardpan, claypan, basalt flow, and San Diego mesa vernal pools
	meadow and seep	wet or dry montane meadows; wet or dry subalpine or alpine meadows; alkali meadows and seeps; freshwater seep
	alkali playa	low, grayish, microphyllous, and succulent shrubs primarily in transmontane deserts
	pebble plain	dense clay soils with quartzite pebbles

APPENDIX 3: Examples of Ecological Types (continued)

Major Ecological Types	Minor Ecological Types	Communities within Minor Ecotypes
Bog and Marsh	bog and fen	sphagnum bog, Darlingtonia bog, fen
	marsh and swamp	salt, brackish, freshwater, transmontane alkali, and vernal marshes; freshwater swamp
Riparian and Bottomland	riparian forest	cottonwood, cottonwood-sycamore, red alder, white alder, aspen, willow, live oak, valley oak, Mojave, and mixed riparian forests; mesquite bosque
	riparian woodland	sycamore, sycamore-alder, desert dry wash, and fan palm oasis woodlands
	riparian scrub	riparian, mulefat, willow, mesquite, and buttonbush, desert wash, tamarisk and arrowweed scrubs; elderberry savanna; desert washes
Woodland	cismontane	blue oak, coast live oak, interior live oak, valley oak, island oak, California walnut, and foothill pine woodlands
	piñon and juniper	juniper woodland and scrub, pinon woodland
	Sonoran thorn	crucifixion thorn and Arizona woodlands
Forest	broadleaved upland	mixed evergreen, California bay, coast live oak, black oak, tan oak, red alder, and aspen forests
	North Coast coniferous	redwood , Sitka spruce-grand fir, western hemlock, Douglas-fir, and Port Orford Cedar forests
	closed cone coniferous	beach pine, bishop pine, Monterey pine, Torrey pine, Monterey cypress, pygmy cypress, interior cypress, knobcone pine forests
	lower montane coniferous	Coast Range coniferous, Klamath coniferous, ponderosa pine, Coulter pine, white pine, white fir, and big tree forests
	upper montane coniferous	Jeffrey pine, upper montane mixed coniferous, upper montane fir, and Klamath enriched coniferous forests
	subalpine coniferous	lodgepole pine, whitebark pine, foxtail pine, bristlecone pine, and limber pine forests
Alpine Habitats	alpine boulder and rock field	fell-field, talus and scree slope, snow margin
	alpine dwarf scrub	shrub dominated communities above the treeline

APPENDIX 4. Species by Common Name

Includes Species from Tables 1, 2, 3 and 4.

acacia, blackwood	*Acacia melanoxylon*
acacia, plume	*Albizia lophantha*
alligatorweed	*Alternanthera philoxeroides*
alyssum, sweet	*Lobularia maritima*
asparagus, smilax	*Asparagus asparagoides*
barberry, Darwin	*Berberis darwinii*
barbwire Russian-thistle	*Salsola paulsenii*
barley, Mediterranean	*Hordeum marinum,*
barley, wall	*Hordeum murinum*
beachgrass, European	*Ammophila arenaria*
beardgrass, annual	*Polypogon monspeliensis* and subspp.
bellardia	*Bellardia trixago*
bentgrass, creeping	*Agrostis stolonifera*
bentgrass, Pacific	*Agrostis avenacea*
bermudagrass	*Cynodon dactylon*
bindweed, field	*Convolvulus arvensis*
birdsfoot trefoil	*Lotus corniculatus*
blackberry, Armenian	*Rubus armeniacus* (=*R. discolor*)
blackberry, Himalaya	*Rubus armeniacus* (=*R. discolor*)
bladderflower	*Araujia sericifera*
bluegrass, Kentucky	*Poa pratensis*
blue gum, Tasmanian	*Eucalyptus globulus*
bouncingbet	*Saponaria officinalis*
brassbuttons	*Cotula coronopifolia*
brome, downy	*Bromus tectorum*
brome, red	*Bromus madritensis* ssp. *rubens* (=*B. rubens*)
brome, ripgut	*Bromus diandrus*
brome, soft	*Bromus hordeaceus*
broom, bridal	*Retama monosperma*
broom, French	*Genista monspessulana*
broom, Portuguese	*Cytisus striatus*
broom, Scotch	*Cytisus scoparius*
broom, Spanish	*Spartium junceum*
broom, striated	*Cytisus striatus*
buckwheat, California	*Eriogonum fasciculatum*
burclover, California	*Medicago polymorpha*
burnweed, Australian	*Erechtites glomerata, E. minima*
buttercup, Bermuda	*Oxalis pes-caprae*
buttercup, creeping	*Ranunculus repens*
butterflybush	*Buddleja davidii*
cabbage	*Brassica oleracea*
cabbage tree, New Zealand	*Cordyline australis*
calla lily	*Zantesdeschia aethiopica*
camelthorn	*Alhagi maurorum* (=*A. pseudalhagi*)
canarygrass, reed	*Phalaris arundinacea*
Cape-ivy	*Delairea odorata* (=*Senecio mikanioides*)
capeweed, fertile	*Arctotheca calendula* (fertile)
capeweed, sterile	*Arctotheca calendula* (sterile)
carrot, wild	*Daucus carota*
castorbean	*Ricinus communis*
catalpa, southern	*Catalpa bignonioides*
catsear, rough	*Hypochaeris radicata*
catsear, smooth	*Hypochaeris glabra*
chamomile, mayweed	*Anthemis cotula*
charlock	*Sinapis arvensis*
cheatgrass	*Bromus tectorum*
cherry plum	*Prunus cerasifera*
Chinese tallowtree	*Sapium sebiferum*
clover, California bur	*Medicago polymorpha*
clover, rose	*Trifolium hirtum*
cordgrass, Atlantic	*Spartina alterniflora*
cordgrass, common	*Spartina anglica*
cordgrass, dense-flowered	*Spartina densiflora*
cordgrass, saltmeadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora* hybrids
cotoneaster, orange	*Cotoneaster franchetii*
cotoneaster, Parney's	*Cotoneaster lacteus*
cotoneaster, silverleaf	*Cotoneaster pannosus*
creeper, Australian bluebell	*Sollya heterophylla*
creeper, bearded	*Crupina vulgaris*
creeper, bridal	*Asparagus asparagoides*
cress, hoary	*Cardaria draba*
croftonweed	*Ageratina adenophora*
crupina, common	*Crupina vulgaris*
cypress, Monterey	*Cupressus macrocarpa*
daisy, African	*Dimorphotheca sinuata*
daisy, corn	*Chrysanthemum segetum*
daisy, crown	*Chrysanthemum coronarium*
daisy, English	*Bellis perennis*
daisy, Mexican	*Erigeron karvinskianus*
daisy, oxeye	*Leucanthemum vulgare*
daisybush, shrubby	*Osteospermum fruticosum*
dandelion, common	*Taraxacum officinale*
dandelion, hairy	*Hypochaeris radicata*
devil's thorn	*Emex spinosa*
dock, curly	*Rumex crispus*
dogtailgrass, hedgehog	*Cynosurus echinatus*
dracaena, giant	*Cordyline australis*
dyer's woad	*Isatis tinctoria*
egeria, Brazilian	*Egeria densa*

APPENDIX 4: Species by Common Name (continued)

elm, Chinese	*Ulmus parvifolia*
elm, Siberian	*Ulmus pumila*
emex, spiny	*Emex spinosa*
eupatorium	*Ageratina adenophora*
false-brome, perennial	*Brachypodium sylvaticum*
fennel	*Foeniculum vulgare*
fennel, dog	*Anthemis cotula*
fescue, rattail	*Vulpia myuros*
fescue, squirreltail	*Vulpia bromoides*
fescue, tall	*Festuca arundinacea*
fig, edible	*Ficus carica*
filaree, broadleaf	*Erodium botrys*
filaree, redstem	*Erodium cicutarium*
filaree, shortfruited	*Erodium brachycarpum*
filaree, whitestem	*Erodium moschatum*
firethorn	*Pyracantha* spp.
fireweed, Australian	*Erechtites glomerata, E. minima*
fivehook bassia	*Bassia hyssopifolia*
flixweed	*Descurainia sophia*
forget-me-not, common	*Myosotis latifolia*
fountaingrass, crimson	*Pennisetum setaceum*
foxglove	*Digitalis purpurea*
foxtail restharrow	*Ononis alopecuroides*
fumitory	*Fumaria officinalis*
garlic, false	*Nothoscordum gracile*
gazania	*Gazania linearis*
geranium, cutleaf	*Geranium dissectum*
geranium, dovefoot	*Geranium molle*
geranium, New Zealand	*Geranium retrorsum*
geranium, Robert	*Geranium robertianum*
German-ivy	*Delairea odorata*
glandweed, yellow	*Parentucellia viscosa*
glasswort	*Salsola soda*
goatgrass, barb	*Aegilops triuncialis*
gorse	*Ulex europaeus*
grass, rabbitfoot	*Polypogon monspeliensis*
gumweed, curlycup	*Grindelia squarrosa*
hairgrass, European	*Aira praecox*
hairgrass, silver	*Aira caryophyllea*
halogeton	*Halogeton glomeratus*
hardinggrass	*Phalaris aquatica*
hawksbeard, smooth	*Crepis capillaris*
hawthorn, English	*Crataegus monogyna*
heath, Spanish	*Erica lusitanica*
hedgeparsley	*Torilis arvensis*
herb-robert	*Geranium robertianum*
holly, English	*Ilex aquifolium*
horehound, white	*Marrubium vulgare*
Hottentot-fig	*Carpobrotus edulis*
houndstongue	*Cynoglossum officinale*
hydrilla	*Hydrilla verticillata*
hypericum, Canary Island	*Hypericum canariense*
iceplant	*Carpobrotus chilensis*
iceplant	*Carpobrotus edulis*
iceplant, crystalline	*Mesembryanthemum crystallinum*
iceplant, heartleaf	*Aptenia cordifolia*
iceplant, narrowleaf	*Conicosia pugioniformis*
iceplant, slenderleaf	*Mesembryanthemum nodiflorum*
iris, yellowflag	*Iris pseudacorus*
ivy, Algerian	*Hedera canariensis*
ivy, English	*Hedera helix*
jessamine, willow	*Cestrum parqui*
jointvetch, rough	*Aeschynomene rudis*
jubatagrass	*Cortaderia jubata*
kangaroothorn	*Acacia paradoxa*
kikuyugrass	*Pennisetum clandestinum*
klamathweed	*Hypericum perforatum*
knapweed, diffuse	*Centaurea diffusa*
knapweed, meadow	*Centaurea debeauxii* (=*C.* x *pratensis*)
knapweed, Russian	*Acroptilon repens*
knapweed, spotted	*Centaurea maculosa* (=*C. biebersteinii*)
knapweed, squarrose	*Centaurea virgata* ssp. *squarrosa* (=*C. squarrosa*)
knotweed, Japanese	*Polygonum cuspidatum* (=*Fallopia japonica*)
knotweed, Sakhalin	*Polygonum sachalinense*
kochia	*Kochia scoparia*
leek, three-cornered	*Allium triquetrum*
lettuce, prickly	*Lactuca serriola*
licoriceplant	*Helichrysum petiolare*
locust, black	*Robinia pseudoacacia*
locust, honey	*Gleditsia triacanthos*
London rocket	*Sisymbrium irio*
loosestrife, hyssop	*Lythrum hyssopifolium*
loosestrife, purple	*Lythrum salicaria*
lupine, yellow bush	*Lupinus arboreus*
mannagrass, waxy	*Glyceria declinata*
mayten	*Maytenus boaria*
Mediterraneangrass	*Schismus arabicus, S. barbatus*
Mediterranean sage	*Salvia aethiopis*
medusahead	*Taeniatherum caput- medusae*
mesembryanthemum, coppery	*Malephora crocea*
milkthistle, blessed	*Silybum marianum*
mirrorplant, creeping	*Coprosma repens*

APPENDIX 4: Species by Common Name (continued)

montbretia	*Crocosmia* x *crocosmiiflora*
mullein, common	*Verbascum thapsus*
mullein, woolly	*Verbascum thapsus*
mustard, birdsrape	*Brassica rapa*
mustard, black	*Brassica nigra*
mustard, blue	*Chorispora tenella*
mustard, field	*Brassica rapa*
mustard, Saharan	*Brassica tournefortii*
mustard, shortpod	*Hirschfeldia incana*
mustard, summer	*Hirschfeldia incana*
mustard, tansy	*Descurainia sophia*
mustard, wild	*Sinapis arvensis*
myoporum	*Myoporum laetum*
nasturtium, garden	*Tropaeolum majus*
nightshade, silverleaf	*Solanum elaeagnifolium*
oat, slender wild	*Avena barbata*
oat, wild	*Avena fatua*
oleander	*Nerium oleander*
olive, Russian-	*Elaeagnus angustifolia*
olive	*Olea europaea*
onionweed	*Asphodelus fistulosus*
orchardgrass	*Dactylis glomerata*
oxalis, buttercup	*Oxalis pes-caprae*
oxalis, yellow	*Oxalis pes-caprae*
oxtongue, bristly	*Picris echioides*
palm, Canary Island date	*Phoenix canariensis*
palm, date	*Phoenix dactylifera*
palm, Mexican fan	*Washingtonia robusta*
palm, Washington	*Washingtonia robusta*
paloverde, Mexican	*Parkinsonia aculeata*
pampasgrass	*Cortaderia selloana*
parentucellia, sticky	*Parentucellia viscosa*
parrotfeather	*Myriophyllum aquaticum*
passionflower, blue	*Passiflora caerulea*
pea, perennial sweet	*Lathyrus latifolius*
pea, Tangier	*Lathyrus tingitanus*
pennyroyal	*Mentha pulegium*
peppertree, Brazilian	*Schinus terebinthifolius*
peppertree, Peruvian	*Schinus molle*
pepperweed, perennial	*Lepidium latifolium*
periwinkle, big	*Vinca major*
pine, Monterey	*Pinus radiata* cultivars
pistache, Chinese	*Pistachia chinensis*
plantain, buckhorn	*Plantago lanceolata*
plantain, cutleaf	*Plantago coronopus*
plantain, English	*Plantago lanceolata*
plum, wild	*Prunus cerasifera*
poison-hemlock	*Conium maculatum*
pokeweed	*Phytolacca americana*
polypogon, rabbitfoot	*Polypogon monspeliensis* and subspp.
pondweed, curlyleaf	*Potamogeton crispus*
pride-of-Madeira	*Echium candicans*
privet, glossy	*Ligustrum lucidum*
pyracantha	*Pyracantha* spp.
quackinggrass, big	*Briza maxima*
Queen Anne's lace	*Daucus carota*
radish	*Raphanus sativus*
ragwort, tansy	*Senecio jacobaea*
rattlesnakegrass	*Briza maxima*
red gum	*Eucalyptus camaldulensis*
redhot poker	*Kniphofia uvaria*
reed, common	*Phragmites australis*
reed, giant	*Arundo donax*
rockrose, gum	*Cistus ladanifer*
rose, baby sun	*Aptenia cordifolia*
Russian-thistle	*Salsola tragus*
ryegrass, Italian	*Lolium multiflorum*
salsify, yellow	*Tragopogon dubius*
saltbush, Australian	*Atriplex semibaccata*
saltcedar	*Tamarix ramosissima*
salvinia, giant	*Salvinia molesta*
sea-fig	*Carpobrotus chilensis*
sea-lavender	*Limonium ramoissimum* ssp. *provincale*
sea-rocket, European	*Cakile maritima*
sesbania, red	*Sesbania punicea*
skeletonweed, rush	*Chondrilla juncea*
smilograss	*Piptatherum miliaceum*
sorrel, red	*Rumex acetosella*
sorrel, sheep	*Rumex acetosella*
sowthistle, spiny	*Sonchus asper*
speargrass, twisted-awned	*Stipa capensis*
spiny emex	*Emex spinosa*
spurge, caper	*Euphorbia lathyris*
spurge, carnation	*Euphorbia terracina*
spurge, leafy	*Euphorbia esula*
spurge, oblong	*Euphorbia oblongata*
St. Johnswort, common	*Hypericum perforatum*
starthistle, Malta	*Centaurea melitensis*
starthistle, purple	*Centaurea calcitrapa*
starthistle, yellow	*Centaurea solstitialis*
steppegrass, Mediterranean	*Stipa capensis*
stinkwort	*Dittrichia graveolens*
sweetclover, Indian	*Melilotus indicus*
sweetclover, yellow	*Melilotus officinalis*
sweetpea, perennial	*Lathyrus latifolius*
tallowtree, Chinese	*Sapium sebiferum*

APPENDIX 4: Species by Common Name (continued)

tamarisk	*Tamarix ramosissima*
tamarisk, athel	*Tamarix aphylla*
tamarisk, smallflower	*Tamarix parviflora*
tansy, common	*Tanacetum vulgare*
tea tree, Australian	*Leptospermum laevigatum*
teasel, fuller's	*Dipsacus sativus*
teasel, wild	*Dipsacus fullonum*
thistle, artichoke	*Cynara cardunculus*
thistle, bull	*Cirsium vulgare*
thistle, Canada	*Cirsium arvense*
thistle, Italian	*Carduus pycnocephalus*
thistle, musk	*Carduus nutans*
thistle, plumeless	*Carduus acanthoides*
thistle, Scotch	*Onopordum acanthium*
thistle, slenderflower	*Carduus tenuifolius*
thistle, woolly distaff	*Carthamus lanatus*
toadflax, Dalmatian	*Linaria genistifolia* ssp. *dalmatica* (=*L. dalmatica*)
tobacco, tree	*Nicotiana glauca*
tocalote	*Centaurea melitensis*
tree-of-heaven	*Ailanthus altissima*
veldtgrass, erect	*Ehrharta erecta*
veldtgrass, long-flowered	*Ehrharta longiflora*
veldtgrass, purple	*Ehrharta calycina*
velvetgrass, common	*Holcus lanatus*
vernalgrass, sweet	*Anthoxanthum odoratum*
vervain, seashore	*Verbena litoralis*
vervain, tall	*Verbena bonariensis*
vetch, hairy	*Vicia villosa*
Victorian box	*Pittosporum undulatum*
wakame	*Undaria pinnatifida*
water hyacinth	*Eichhornia crassipes*
waterlily, fragrant	*Nymphaea odorata*
watermilfoil, Eurasian	*Myriophyllum spicatum*
water-primrose, creeping	*Ludvigia peploides* ssp. *montevidensis*
water-primrose, Uruguay	*Ludvigia hexapetala* (=*L. uruguayensis*)
watsonia	*Watsonia borbonica*
watsonia, bulbil	*Watsonia meriana*
whitetop, hairy	*Cardaria pubescens*
whitetop, lens-podded	*Cardaria chalepensis* (=*C. draba* ssp. *chalepensis*)
whitetop, tall	*Lepidium latifolium*
wisteria, scarlet	*Sesbania punicea*
woodsorrel, creeping	*Oxalis corniculata*
zoysiagrass	*Zoysia* spp.

The Nation Park Service's Exotic Plant Management Team removes satellite infestations of Centaurea solstitialis *(yellow starthistle) to prevent the plant's spread. (Photo by Bobbi Simpson, Point Reyes National Seashore)*

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Circular clones of Spartina alterniflora *x* foliosa *(smooth cordgrass hybrid) spread in San Francisco Bay. (Photo by Stephen Joseph, Invasive Spartina Project)*

California State-listed Noxious Weeds

243 records returned

Noxious weeds that are synonyms are indented beneath the current PLANTS accepted name.

California Department of Food and Agriculture. 2003. Pest Ratings of Noxious Weed Species and Noxious Weed Seed. California Department of Food and Agriculture.

California Department of Food and Agriculture. 2003. Plant Quarantine Manual, California Plant Quarantine Policy - Weeds. California Department of Food and Agriculture.

Food and Agriculture Code. 2003. Camelthorn, Section 7301-7305. State of California.

Food and Agriculture Code. 2003. Hydrilla, Section 6048-6049. State of California.

Symbol	Scientific Name	Noxious Common Name	State Weed Status†	U.S. Nativity*
ACBR5	*Achnatherum brachychaetum* (Godr.) Barkworth	punagrass	AW	I
ACNO7	*Acaena novae-zelandiae* Kirk			I
ACNO4	*Acaena novae-zelandica* Kirk [orthographic error]	biddy biddy	AW	
ACPA14	*Acaena pallida* (Kirk) Allen	pale biddy-biddy	AW	I
ALPH	*Alternanthera philoxeroides* (Mart.) Griseb.	alligatorweed	AW	I
ARCA45	*Arctotheca calendula* (L.) Levyns	capeweed	AW	I
CAAC	*Carduus acanthoides* L.	plumeless thistle	AW	I
CALE52	*Carthamus leucocaulos* Sm.	whitestem distaff thistle	AW	I
CANU4	*Carduus nutans* L.	musk thistle	AW	I
CEDI3	*Centaurea diffusa* Lam.	diffuse knapweed	AW	I
CEIB	*Centaurea iberica* Trev. ex Spreng.	Iberian starthistle	AW	I
CESTM	*Centaurea stoebe* L. ssp. *micranthos* (Gugler) Hayek			I
CEMA4	*Centaurea maculosa* auct. non Lam. [misapplied]	knapweed	AW	
CEVIS2	*Centaurea virgata* Lam. ssp. *squarrosa* (Willd.) Gugler			I
CESQ	*Centaurea squarrosa* Willd.	squarrose knapweed	AW	
CHJU	*Chondrilla juncea* L.	skeletonweed	AW	I
CIOC2	*Cirsium ochrocentrum* Gray	yellowspine thistle	AW	N
CIUN	*Cirsium undulatum* (Nutt.) Spreng.	wavyleaf thistle	AW	N
CUME	*Cucumis melo* L.			I
CUMED	*Cucumis melo* L. var. *dudaim* (L.) Naud.	dudaim melon	AW	
CURE	*Cuscuta reflexa* Roxb.	giant dodder	AW	I
EUES	*Euphorbia esula* L.	leafy spurge	AW	I
EUSE12	*Euphorbia serrata* L.	serrate spurge	AW	I
HAGL	*Halogeton glomeratus* (Bieb.) C.A. Mey.	halogeton	AW	I
HAHA8	*Halimodendron halodendron* (Pallas) Voss	Russian salt tree	AW	I
HECI	*Helianthus ciliaris* DC.	blueweed	AW	N
HECO10	*Heteropogon contortus* (L.) Beauv. ex Roemer & J.A. Schultes	tanglehead	AW	N

HYMO6	*Hydrocharis morsus-ranae* L.	frogbit	AW	I
LIDAD	*Linaria dalmatica* (L.) P. Mill. ssp. *dalmatica*			I
LIGED	*Linaria genistifolia* (L.) P. Mill. ssp. *dalmatica* (L.) Maire & Petitm.	Dalmatian toadflax	AW	
ONAC	*Onopordum acanthium* L.	Scotch thistle	AW	I
ONIL	*Onopordum illyricum* L.	Illyrian thistle	AW	I
ONTA	*Onopordum tauricum* Willd.	Taurian thistle	AW	I
ORCO4	*Orobanche cooperi* (Gray) Heller	Cooper's broomrape	AW	N
ORRA	*Orobanche ramosa* L.	branched broomrape	AW	I
PEHA	*Peganum harmala* L.	harmel	AW	I
PHLO4	*Physalis longifolia* Nutt.	long-leaf groundcherry	AW	N
SASU11	*Salvia* ×*superba* Stapf [×*sylvestris* × *villicaulis*]			I
SAVI16	*Salvia virgata* auct. non Jacq. [misapplied]	southern meadow sage	AW	
SCHI	*Scolymus hispanicus* L.	golden thistle	AW	I
SOAR2	*Sonchus arvensis* L.	perennial sowthistle	AW	I
SOCA19	*Solanum cardiophyllum* Lindl.	heartleaf nightshade	AW	I
SODI	*Solanum dimidiatum* Raf.	Torrey's nightshade	AW	N
SPSA3	*Sphaerophysa salsula* (Pallas) DC.	Austrian peaweed	AW	I
STAS2	*Striga asiatica* (L.) Kuntze	witchweed	AW	I
TAMI3	*Tagetes minuta* L.	wild marigold	AW	I
ZYFA	*Zygophyllum fabago* L.	Syrian beancaper	AW	I
HYVE3	*Hydrilla verticillata* (L. f.) Royle	hydrilla	AW, NAW, Q	I
ALMA12	*Alhagi maurorum* Medik.	camelthorn	AW, PN	I
CRVU2	*Crupina vulgaris* Cass.	bearded creeper, common crupina	AW, Q	I
PRST3	*Prosopis strombulifera* (Lam.) Benth.	Argentine screwbean, creeping mesquite	AW, Q	I
SAVE6	*Salsola vermiculata* L.	wormleaf salsola, wormleaf saltwort	AW, Q	I
ACPA8	*Acacia paradoxa* DC.	kangaroothorn	BW	I
ACRE3	*Acroptilon repens* (L.) DC.	Russian knapweed	BW	I
AECY	*Aegilops cylindrica* Host	jointed goatgrass	BW	I
AEGE	*Aegilops geniculata* Roth			I
AEOV2	*Aegilops ovata* L. p.p.	ovate goatgrass	BW	
AERU	*Aeschynomene rudis* Benth.	rough jointvetch	BW	N
AETR	*Aegilops triuncialis* L.	barb goatgrass	BW	I
ALNE3	*Allium neapolitanum* Cirillo			I
NOIN3	*Nothoscordum inodorum* (Ait.) Nichols.	false garlic	BW	
ALPA20	*Allium paniculatum* L.	panicled onion	BW	I
ALVI	*Allium vineale* L.	wild garlic	BW	I
AMTR	*Ambrosia trifida* L.	giant ragweed	BW	N
ARSE8	*Araujia sericifera* Brot.	bladderflower	BW	I
CACH42	*Cardaria chalepensis* (L.) Hand.-Maz.			I
CACH10	*Cardaria chalapensis* (L.) Hand.-Maz. [orthographic variant]	lens podded hoarycress	BW	
CADR	*Cardaria draba* (L.) Desv.	lens podded hoarycress	BW	I
CALA20	*Carthamus lanatus* L.	woolly distaff thistle	BW	I
CALAC3	*Carthamus lanatus* L. ssp. *creticus* (L.) Holmboe			I
CABA5	*Carthamus baeticus* (Boiss. & Reut.) Nyman	smooth distaff thistle	BW	
CAPU6	*Cardaria pubescens* (C.A. Mey.) Jarmolenko	lens podded hoarycress	BW	I
CECA2	*Centaurea calcitrapa* L.	purple starthistle	BW	I
CESU	*Centaurea sulphurea* Willd.	Sicilian starthistle	BW	I

CHTE2	*Chorispora tenella* (Pallas) DC.	purple mustard	BW	I
CIAR4	*Cirsium arvense* (L.) Scop.	Canada thistle	BW	I
COSQ	*Coronopus squamatus* (Forssk.) Aschers.	swinecress	BW	I
CUMY	*Cucumis myriocarpus* E. Mey. ex Naud.	paddy melon	BW	I
CYCA	*Cynara cardunculus* L.	artichoke thistle	BW	I
CYES	*Cyperus esculentus* L.	yellow nutsedge	BW	NI
CYRO	*Cyperus rotundus* L.	purple nutsedge	BW	I
ELRE4	*Elymus repens* (L.) Gould			I
ELRE3	*Elytrigia repens* (L.) Desv. ex Nevski	quackgrass	BW	
EUOB4	*Euphorbia oblongata* Griseb.	oblong spurge	BW	I
GACO5	*Gaura coccinea* Nutt. ex Pursh	scarlet gaura	BW	N
GADR	*Gaura drummondii* (Spach) Torr. & Gray	Drummond's gaura	BW	N
GASI	*Gaura sinuata* Nutt. ex Ser.	wavy-leaved gaura	BW	N
GYPA	*Gypsophila paniculata* L.	baby's breath	BW	I
IMBR2	*Imperata brevifolia* Vasey	satintail	BW	N
ISTI	*Isatis tinctoria* L.	dyer's woad	BW	I
LELA2	*Lepidium latifolium* L.	perennial peppercress	BW	I
LYSA2	*Lythrum salicaria* L.	purple loosestrife	BW	I
MUSC	*Muhlenbergia schreberi* J.F. Gmel.	nimblewill	BW	N
NYME	*Nymphaea mexicana* Zucc.	banana waterlily	BW	N
PAAN4	*Panicum antidotale* Retz.	blue panicgrass	BW	I
PHVI17	*Physalis viscosa* L.	grape groundcherry	BW	N
PIST2	*Pistia stratiotes* L.	water lettuce	BW	N
POCU6	*Polygonum cuspidatum* Sieb. & Zucc.	Japanese knotweed	BW	I
POPO5	*Polygonum polystachyum* Wallich ex Meisn.	Himalayan knotweed	BW	I
POSA4	*Polygonum sachalinense* F. Schmidt ex Maxim.	giant knotweed	BW	I
ROAU	*Rorippa austriaca* (Crantz) Bess.	Austrian field cress	BW	I
SAAE	*Salvia aethiopis* L.	Mediterranean sage	BW	I
SEFA	*Setaria faberi* Herrm.	giant foxtail	BW	I
SEJA	*Senecio jacobaea* L.	tansy ragwort	BW	I
SESQ	*Senecio squalidus* L.	Oxford ragwort	BW	I
SOCA3	*Solanum carolinense* L.	Carolina horsenettle	BW	N
SOEL	*Solanum elaeagnifolium* Cav.	white horsenettle	BW	N
SOLA	*Solanum lanceolatum* Cav.	lanceleaf nightshade	BW	I
SOMA	*Solanum marginatum* L. f.	white-margined nightshade	BW	I
SYAS	*Symphytum asperum* Lepechin	rough comfrey	BW	I
ULEU	*Ulex europaeus* L.	gorse	BW	I
VIAL2	*Viscum album* L.	European mistletoe	BW	I
ORRU	*Oryza rufipogon* Griffiths	perennial wild red rice, red rice	BW, Q	I
CAPY2	*Carduus pycnocephalus* L.	Italian thistle	CW	I
CATE2	*Carduus tenuiflorus* W. Curtis	slenderflowered thistle	CW	I
CEEC	*Cenchrus echinatus* L.	southern sandbur	CW	N
CELO3	*Cenchrus longispinus* (Hack.) Fern.	mat sandbur	CW	N
CESO3	*Centaurea solstitialis* L.	yellow starthistle	CW	I
CESP4	*Cenchrus spinifex* Cav.			N
CEIN4	*Cenchrus incertus* M.A. Curtis	coast sandbur	CW	
COAR4	*Convolvulus arvensis* L.	field bindweed	CW	I
CYNOD	*Cynodon* L.C. Rich.	bermudagrass	CW	
CYSC4	*Cytisus scoparius* (L.) Link	Scotch broom	CW	I
EICR	*Eichhornia crassipes* (Mart.) Solms	waterhyacinth	CW	I

GEMO2	*Genista monspessulana* (L.) L. Johnson	French broom	CW	I
HYNI	*Hyoscyamus niger* L.	black henbane	CW	I
HYPE	*Hypericum perforatum* L.	klamathweed	CW	I
IRDO	*Iris douglasiana* Herbert	Douglas iris	CW	N
IRMI	*Iris missouriensis* Nutt.	western blue flag	CW	N
IVAX	*Iva axillaris* Pursh	povertyweed	CW	N
MALE3	*Malvella leprosa* (Ortega) Krapov.	alkali mallow	CW	N
POAME	*Polygonum amphibium* L. var. *emersum* Michx.	kelp	CW	N
SAPA8	*Salsola paulsenii* Litv.	barbwire Russianthistle	CW	I
SATR12	*Salsola tragus* L.	common Russianthistle	CW	I
SOHA	*Sorghum halepense* (L.) Pers.	johnsongrass	CW	I
TACA8	*Taeniatherum caput-medusae* (L.) Nevski	medusahead	CW	I
TRTE	*Tribulus terrestris* L.	puncturevine	CW	I
CUSCU	*Cuscuta* L.[1]	dodder	CW, Q	
PECL2	*Pennisetum clandestinum* Hochst. ex Chiov.	kikuyugrass	CW, Q	I
AEGIN	*Aeginetia* L.		Q	
AGAD2	*Ageratina adenophora* (Spreng.) King & H.E. Robins.	crofton weed	Q	I
ALECT2	*Alectra* Thunb.		Q	
ALSE4	*Alternanthera sessilis* (L.) R. Br. ex DC.	sessile joyweed	Q	I
ASFI2	*Asphodelus fistulosus* L.	onionweed	Q	I
AVST	*Avena sterilis* L.	animated oat	Q	I
AZPI	*Azolla pinnata* R. Br.	mosquito fern	Q	I
CAOX6	*Carthamus oxyacanthus* Bieb.			I
CAOX2	*Carthamus oxyacantha* Bieb. [orthographic variant]	wild safflower	Q	
CHAC	*Chrysopogon aciculatus* (Retz.) Trin.	pilipiliula	Q	I
COBE2	*Commelina benghalensis* L.	Benghal dayflower	Q	I
DIAB	*Digitaria abyssinica* (Hochst. ex A. Rich.) Stapf			I
DISC5	*Digitaria scalarum* (Schweinf.) Chiov.	African couch grass	Q	
DIVE2	*Digitaria velutina* (Forssk.) Beauv.	velvet fingergrass	Q	I
DRAR7	*Drymaria arenarioides* Humb. & Bonpl. ex J.A. Schultes [excluded]	alfombrilla	Q	XU
EIAZ2	*Eichhornia azurea* (Sw.) Kunth	anchored waterhyacinth	Q	I
EMAU	*Emex australis* Steinh.	three-cornered jack	Q	I
EMSP	*Emex spinosa* (L.) Campd.	devil's thorn	Q	I
GAOF	*Galega officinalis* L.	goatsrue	Q	I
HEMA17	*Heracleum mantegazzianum* Sommier & Levier	giant hogweed	Q	I
HOMER	*Homeria* Vent.	Cape tulip	Q	
HYPO3	*Hygrophila polysperma* (Roxb.) T. Anders.	Miramar weed	Q	I
IMBR	*Imperata brasiliensis* Trin.	Brazilian satintail	Q	I
IMCY	*Imperata cylindrica* (L.) Beauv.	cogongrass	Q	I
IPAQ	*Ipomoea aquatica* Forssk.	Chinese waterspinach	Q	I
ISRU	*Ischaemum rugosum* Salisb.	murain-grass	Q	I
LAMA15	*Lagarosiphon major* (Ridley) Moss	oxygen weed	Q	XU
LECH2	*Leptochloa chinensis* (L.) Nees [excluded]	Asian sprangletop	Q	XU
LISE3	*Limnophila sessiliflora* (Vahl) Blume	ambulia	Q	I
LYFE4	*Lycium ferocissimum* Miers			I
LYFE3	*Lycium ferrocissimum* Miers [orthographic variant]	African boxthorn	Q	
MEMA	*Melastoma malabathricum* L.		Q	I
MEQU	*Melaleuca quinquenervia* (Cav.) Blake	melaleuca	Q	I

MICO16	*Mikania cordata* (Burm. f.) B.L. Robins. [excluded]	mile-a-minute	Q	XU
MIDI8	*Mimosa diplotricha* C. Wright			I
MIIN80	*Mimosa invisa* Mart., non Mart. ex Colla	giant sensitive plant	Q	
MIMI5	*Mikania micrantha* Kunth	mile-a-minute	Q	N
MIPE2	*Mimosa pellita* Kunth ex Willd.			N
MIPI	*Mimosa pigra* auct. non L. [misapplied]	catclaw mimosa	Q	
MOHA2	*Monochoria hastata* (L.) Solms [excluded]	monochoria	Q	XU
MOVA	*Monochoria vaginalis* (Burm. f.) K. Presl ex Kunth	pickerel weed	Q	I
NATR3	*Nassella trichotoma* (Nees) Hack.	serrated tussock	Q	I
OPAU10	*Opuntia aurantiaca* Lindl.	jointed prickly pear	Q	XU
ORLO3	*Oryza longistaminata* A. Chev. & Roehr.	red rice	Q	XU
OROBA	*Orobanche* L.[1]	broomrape	Q	
ORPU13	*Oryza punctata* Kotzchy ex Steud.	red rice	Q	XU
OTAL	*Ottelia alismoides* (L.) Pers.	duck-lettuce	Q	I
PASC6	*Paspalum scrobiculatum* L.	Kodo-millet	Q	I
PEMA80	*Pennisetum macrourum* Trin.	African feathergrass	Q	I
PEPE24	*Pennisetum pedicellatum* Trin.	kyasuma-grass	Q	I
PEPO14	*Pennisetum polystachion* (L.) J.A. Schultes			I
PEPO4	*Pennisetum polystachyon* (L.) J.A. Schultes [orthographic variant]	missiongrass	Q	
PRAL11	*Prosopis alpataco* Phil.	mesquite	Q	XU
PRAR6	*Prosopis argentina* Burkart	mesquite	Q	XU
PRBU2	*Prosopis burkartii* Muñoz	mesquite	Q	XU
PRCA10	*Prosopis calingastana* Burkart	mesquite	Q	XU
PRCA11	*Prosopis campestris* Griseb.	mesquite	Q	XU
PRCA12	*Prosopis castellanosii* Burkart	mesquite	Q	XU
PRCA9	*Prosopis caldenia* Burkart	mesquite	Q	XU
PRDE4	*Prosopis denudans* Benth.	mesquite	Q	XU
PREL5	*Prosopis elata* (Burkart) Burkart	mesquite	Q	XU
PRFA2	*Prosopis farcta* (Banks & Soland.) J.F. Macbr.	Syrian mesquite	Q	I
PRFE2	*Prosopis ferox* Griseb.	mesquite	Q	XU
PRFI4	*Prosopis fiebrigii* Harms	mesquite	Q	XU
PRHA4	*Prosopis hassleri* Harms ex Hassler	mesquite	Q	XU
PRHU3	*Prosopis humilis* Gill. ex Hook.	mesquite	Q	XU
PRKU2	*Prosopis kuntzei* Harms ex Hassler	mesquite	Q	XU
PRPA10	*Prosopis palmeri* S. Wats.	mesquite	Q	XU
PRPA4	*Prosopis pallida* (Humb. & Bonpl. ex Willd.) Kunth	kiawe	Q	I
PRRE2	*Prosopis reptans* Benth.	tornillo	Q	N
PRRO4	*Prosopis rojasiana* Burkart	mesquite	Q	XU
PRRU4	*Prosopis ruizlealii* Burkart	mesquite	Q	XU
PRRU5	*Prosopis ruscifolia* Griseb.	mesquite	Q	XU
PRSE5	*Prosopis sericantha* Gill. ex Hook.	mesquite	Q	XU
PRTO3	*Prosopis torquata* DC.	mesquite	Q	XU
PRVE	*Prosopis velutina* Woot.			N
PRAR4	*Prosopis articulata* S. Wats.	velvet mesquite	Q	
ROCO6	*Rottboellia cochinchinensis* (Lour.) W.D. Clayton	itchgrass	Q	I
RUFR80	*Rubus fruticosus* L. [excluded]	wild blackberry complex	Q	XU
RUMO4	*Rubus moluccanus* L. [excluded]	wild blackberry	Q	XU
SABI9	*Salvinia biloba* Raddi	giant salvinia	Q	XU
SAHE7	*Salvinia herzogii* de la Sota	giant salvinia	Q	XU
SAMO5	*Salvinia molesta* Mitchell	giant salvinia	Q	I

SASA7	*Sagittaria sagittifolia* L. [excluded]	arrowhead	Q	XU
SASP	*Saccharum spontaneum* L.	wild sugarcane	Q	I
SEPUP3	*Setaria pumila* (Poir.) Roemer & J.A. Schultes ssp. *pallidefusca* (Schumacher) B.K. Simon			I
SEPA82	*Setaria pallidifusca* (Schumacher) Stapf & C.E. Hubbard [orthographic variant]	cattail grass	Q	
SOTA3	*Solanum tampicense* Dunal	wetland nightshade	Q	I
SOTO4	*Solanum torvum* Sw.	turkeyberry	Q	I
SOVI2	*Solanum viarum* Dunal	tropical soda apple	Q	I
SPAL3	*Spermacoce alata* Aubl. [excluded]	borreria	Q	XU
SPER	*Sparganium erectum* L.	exotic bur-reed	Q	N
STRIG	*Striga* Lour.	witchweed	Q	
TRPR5	*Tridax procumbens* L.	coat buttons	Q	I
URPA	*Urochloa panicoides* Beauv.	liverseed grass	Q	I
SAAU	*Salvinia auriculata* Aubl.	giant salvinia, salvinia	Q, QW	I
CACA	*Cabomba caroliniana* Gray	Carolina fanwort	QW	N
CIJA2	*Cirsium japonicum* Fisch. ex DC.	Japanese thistle	QW	XU
EUTE10	*Euphorbia terracina* L.	Geraldton carnation spurge	QW	I
LIIN5	*Limnophila indica* (L.) Druce	ambulia	QW	I
LISP2	*Limnobium spongia* (Bosc) L.C. Rich. ex Steud.	spongeplant	QW	N
ONAL5	*Ononis alopecuroides* L.	foxtail restharrow	QW	I
ROSY	*Rorippa sylvestris* (L.) Bess.	creeping yellow field cress	QW	I
SACO8	*Salsola collina* Pallas	spineless Russianthistle	QW	I

†Code	Weed Status
AW	A list (noxious weeds)
BW	B list (noxious weeds)
CW	C list (noxious weeds)
NAW	Noxious aquatic weed
PN	Public nuisance
Q	Quarantine
QW	Q list (temporary "A" list noxious weed, pending final determination)

*Code	U.S. Nativity
I	Introduced
N	Native
NI	Native and Introduced
XU	Cultivated, or not in the U.S.

[1] other than native or widely distributed species

Additional information about noxious plants in this state can be found at:

- CA-CalPhotos (CalFlora images)
- CA-California Invasive Plant Council
- CA-Calweeds Database
- CA-Encycloweedia (CDFA)
- CA-Practical Guidebook for Invasive Aquatic Identication & Control
- CA-UC Davis Weed Research and Information Center
- CA-UC IPM Online Weed Photo Gallery
- CalWeed Database: California Noxious Weed Control Projects Inventory: County Lists
- California Department of Food and Agriculture
- California Exotic Pest Plant Council
- California Weed Management Areas
- California Weed Science Society
- Exotic Pest Links
- TNC: Wildland Invasive Species Program
- UC Davis Integrated Pest Management

APPENDIX D

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 for vehicle application and 10 feet 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 isbest 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).

In Wilderness Areas, Wilderness Study Areas, and areas being managed for wilderness characteristics according to LUPs, when suppression actions are required, minimum impact suppression tactics (Interagency Standards for Fire and Aviation Operations, 2003) would be utilized and coordinated with Wilderness Area management objectives and guidelines.

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 2003).

C. Cultural Resources

All known cultural resources would be protected from disturbance.

Should cultural resources be encountered during wildland suppression ground-disturbing activities, the BLM will be notified immediately.

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 NAGPRA of 1990; Executive Order 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.

D. Paleontological Resources

If vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, the user/operator shall immediately contact the authorized officer.

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.

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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/Record of Decision (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.

APPENDIX E

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

Alternative A (June, 2006)

LAND-TENURE ADJUSTMENT

Eastern San Diego County Planning Unit

Disposal

The public lands described below, located within eastern San Diego County, were identified for disposal in the Eastern San Diego County Management Framework Plan, 1981, based on the criteria outlined in FLPMA for BLM to use in determining suitability for disposal through sale or exchange: 1) scattered, isolated tracts, difficult or uneconomic to manage; 2) acquired for a specific purpose and are no longer needed for that purpose; or 3) disposal of the land will serve important public objectives, such as community expansion and economic development. (*The California Desert Conservation Area Plan restricts public land disposal to certain Multiple-Use Classes (MUC) – something to consider in the management plan if MUC's will be used in Eastern San Diego County.)*

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) Banner Canyon/Volcan Mountain Area	
T.12S., R.4E.,	
sec. 29, NE¼SE¼	
(surrounded by Volcan Mountain Preserve)	34.95
(C) Oriflamme Mountains Area	
T.14S., R.4E.,	
sec. 1, SE¼SE¼	40.00
(surrounded by Anza-Borrego Desert State Park lands)	
(D) McCain Valley Area	
T.16S., R.7E.,	
sec. 19, lot 4, SE¼SW¼, SW¼SE¼	121.09
sec. 30, lot 1, NW¼NE¼, E½NW¼	160.98

	Acres
(E) McCain Valley/Boulevard Area	
T.17S., R.7E.,	
sec. 8, E½NW¼, SW¼SE¼	120.00
sec. 9, lot 4 thru 6 (inclusive)	110.76
sec. 15, N½NW¼, SE¼NW¼	120.00
sec. 17, NW¼NE¼	40.00
sec. 21, NE¼, NE¼NW¼	200.00
(F) La Posta/Interstate 8 Area	
T.17S., R.6E.,	
sec. 4, lots 8, 10, 12	46.73
sec. 9, N½NW¼, SE¼ NW¼	120.00
(G) Carrizo Gorge Area	
(Peninsular Bighorn Sheep and Quino Checkerspot Butterfly Habitat)	
T.17S., R.8E.,	
sec. 17, W½NW¼, NW¼SW¼	120.00
sec. 18, SE¼SE¼	40.00
sec. 19, N½NE¼, SW¼NE¼	120.00
sec. 30, lot 3, SW¼NE¼, SE¼NW¼, NE¼SW¼	159.88
(adjacent to or surrounded by Anza-Borrego Desert State Park lands)	
(H) Round Mountain/Jacumba Area)	
(Quino Checkerspot Butterfly Critical Habitat)	
T.17S., R.8E.,	
sec. 32, SE¼SW¼	40.00
T.18S., R.8E.,	
sec. 5, lot 3, 4	80.61
TOTAL ACRES:	**1,715.00**

Alternatives B & D (June, 2006)

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 Area	
T.16S., R.7E.,	
sec. 19, lot 4, SE¼SW¼, SW¼SE¼	121.09
sec. 30, lot 1, NW¼NE¼, E½NW¼	160.98
(C) McCain Valley/Boulevard Area	
T.17S., R.7E.,	
sec. 8, E½NW¼, SW¼SE¼	120.00
sec. 9, lot 4 thru 6 (inclusive)	110.76
sec. 15, N½NW¼, SE¼NW¼	120.00
sec. 17, NW¼NE¼	40.00
sec. 21, NE¼, NE¼NW¼	200.00
(D) 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:	**1,079.56**

Alternative E (July 2006)

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:

(A) San Felipe Valley Area	Acres
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**

Alternative E (July 2006)

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**

APPENDIX G

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-010014	SDI-10014	1979	1	1														Not evaluated
37-010015	SDI-10015	1979	1	1									1					Potentially eligible
37-001001	SDI-10016	1979															1	Not evaluated
37-010017	SDI-10017	1979		1													1	Not evaluated
37-010018	SDI-10018	1979		1														Not evaluated
37-010019	SDI-10019	1979		1														Not evaluated
37-010020	SDI-10020	1979		1		1												Not evaluated
37-010021	SDI-10021	1979	1	1	1													Not evaluated
37-010022	SDI-10022																	
37-010023	SDI-10023	1979	1															Not evaluated
37-001011	SDI-1011	1952		1		1												Not evaluated
37-010119	SDI-10119	1983	1	1	1	1				1								Potentially eligible
37-010120	SDI-10120	1984	1	1	1	1	1											Potentially eligible
37-010123	SDI-10123	1979		1	1													Not evaluated
37-010124	SDI-10124	2005	1	1	1				1									Potentially eligible
37-010125	SDI-10125	1979		1	1													Not evaluated
37-010126	SDI-10126	1979		1	1				1									Potentially eligible
37-010127	SDI-10127	1979			1													Not evaluated
37-010128	SDI-10128	1979			1													Not evaluated
37-010129	SDI-10129	1979			1													Not evaluated
37-001013	SDI-10130	1979																Not evaluated
37-010131	SDI-10131	1979			1													Not evaluated
37-010132	SDI-10132	1979		1														Not evaluated
37-010133	SDI-10133	1979		1	1													Not evaluated
37-010135	SDI-10135	1979			1							1						Potentially eligible
37-010315	SDI-10315	1979		1														Not evaluated
37-010316	SDI-10316	1979	1		1								1					Not evaluated
37-010317	SDI-10317	1979	1															Not evaluated
37-010318	SDI-10318	1979	1															Not evaluated
37-010319	SDI-10319	1979		1													1	Not evaluated
37-010320	SDI-10320	1979	1															Not evaluated
37-010321	SDI-10321	1979	1		1													Not evaluated
37-010323	SDI-10323	1979			1													Not evaluated
37-010324	SDI-10324	1979		1	1	1												Not evaluated
37-010325	SDI-10325	1979	1		1				1				1					Potentially eligible
37-010326	SDI-10326	1979		1														Not evaluated
37-010327	SDI-10327	1979		1	1								1					Not evaluated
37-010328	SDI-10328	1979		1														Not evaluated
37-010329	SDI-10329	1979			1													Not evaluated
37-010330	SDI-10330	1979	1	1	1													Not evaluated
37-010331	SDI-10331	1979			1								1					Not evaluated
37-010339	SDI-10339	1979																Not evaluated
37-010341	SDI-10341	1979		1									1					Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-010342	SDI-10342H	1979														1		Not evaluated
37-010343	SDI-10343H	1979														1		Not evaluated
37-00	SDI-10344	1979	1															Not evaluated
37-010345	SDI-10345	1979	1	1												1		Not evaluated
37-010347	SDI-10347	1979		1														Not evaluated
37-010348	SDI-10348	1979		1														Not evaluated
37-010350	SDI-10350	1979		1														Not evaluated
37-010351	SDI-10351	1979		1	1													Not evaluated
37-010352	SDI-10352	1979	1	1	1	1												Not evaluated
37-010353	SDI-10353	1979	1	1														Not evaluated
37-010358	SDI-10358	1979	1															Not evaluated
37-010369	SDI-10369	1979											1					Not evaluated
37-010370	SDI-10370	1979											1					Not evaluated
37-010371	SDI-10371	1979		1														Not evaluated
37-010372	SDI-10372	1979											1					Not evaluated
37-010373	SDI-10373	1979											1					Not evaluated
37-010374	SDI-10374	1979											1					Not evaluated
37-010379	SDI-10379	1979											1					Not evaluated
37-010380	SDI-10380	1979											1					Not evaluated
37-010381	SDI-10381	1979											1					Not evaluated
37-010382	SDI-10382	1979											1					Not evaluated
37-010383	SDI-10383	1979											1					Not evaluated
37-010384	SDI-10384	1979											1					Not evaluated
37-010385	SDI-10385	1979											1					Not evaluated
37-010386	SDI-10386	1979											1					Not evaluated
37-010387	SDI-10387	1979											1					Not evaluated
37-010388	SDI-10388	1979											1					Not evaluated
37-010389	SDI-10389	1979											1					Not evaluated
37-010390	SDI-10390	1979											1					Not evaluated
37-010391	SDI-10391	1979											1					Not evaluated
37-010406	SDI-10406	1979	1						1									Potentially eligible
37-010412	SDI-10412	1979											1					Not evaluated
37-010413	SDI-10413	1979	1															Not evaluated
37-010428	SDI-10428	1979	1										1					Not evaluated
37-010429	SDI-10429	1979											1					Not evaluated
37-010430	SDI-10430	1979											1					Not evaluated
37-010431	SDI-10431	1979											1					Not evaluated
37-010432	SDI-10432	1979											1					Not evaluated
37-010433	SDI-10433	1979											1					Not evaluated
37-010434	SDI-10434	1979											1					Not evaluated
37-001044	SDI-10442	1979		1														Not evaluated
37-010474	SDI-10474	1979		1	1													Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-010573	SDI-10573	1958	1	1	1	1							1					Potentially eligible
37-010574	SDI-10574	1958	1	1		1												Not evaluated
37-010575	SDI-10575	1958		1	1	1							1					Not evaluated
37-010576	SDI-10576	1958	1	1	1	1							1					Potentially eligible
37-010577	SDI-10577	1958	1	1		1							1					Not evaluated
37-010578	SDI-10578	1958	1	1		1							1					Potentially eligible
37-010588	SDI-10588	1985	1	1	1	1												Not evaluated
37-001080	SDI-1080	1978		1	1								1					Not evaluated
37-001081	SDI-1081	1979		1														Not evaluated
37-000113	SDI-113	1950		1														Not evaluated
37-000115	SDI-115	1958	1	1	1	1							1					Potentially eligible
37-001151	SDI-1151	1969	1	1	1													Not evaluated
37-000118	SDI-118	1950		1														Not evaluated
37-011923	SDI-11923	1990			1								1					Not evaluated
37-011924	SDI-11924	1990		1	1	1							1					Potentially eligible
37-001307	SDI-1307	1972	1	1	1	1			1									Not evaluated
37-001489	SDI-1489	1972	1	1	1	1							1					Not evaluated
37-018903	SDI-15746	2000		1	1													Not evaluated
37-000162	SDI-162	1940		1														Not evaluated
37-000164	SDI-164	1940		1														Not evaluated
37-024978	SDI-16521	2003	1															Not evaluated
37-024980	SDI-16523	2003	1															Not evaluated
37-024983	SDI-16526	2003					1											Not evaluated
37-024989	SDI-16532	2003					1											Not evaluated
37-024996	SDI-16537	2003							1									Not evaluated
37-024997	SDI-16538	2003					1											Not evaluated
37-024998	SDI-16539	2003					1										1	Not evaluated
37-024999	SDI-16540	2003			1													Not evaluated
37-025000	SDI-16541	2003			1		1	1										Not evaluated
37-025001	SDI-16542	2003			1		1											Not evaluated
37-025002	SDI-16543	2003			1		1											Not evaluated
37-025003	SDI-16544	2003			1		1											Not evaluated
37-025004	SDI-16545	2003					1											Not evaluated
37-025005	SDI-16546	2003			1		1											Not evaluated
37-025006	SDI-16547	2003					1											Not evaluated
37-025007	SDI-16548	2003					1											Not evaluated
37-025008	SDI-16549	2003					1											Not evaluated
37-025009	SDI-16550	2003					1											Not evaluated
37-025010	SDI-16551	2003					1											Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-025725	SDI-17116	2004			1													Not evaluated
37-025727	SDI-17118	2004		1	1													Not evaluated
37-025728	SDI-17119	2004		1														Not evaluated
37-000172	SDI-172	1940		1														Not evaluated
37-000173	SDI-173	1940		1														Not evaluated
37-026383	SDI-17326	2005														1		Not evaluated
37-000174	SDI-174	1940		1														Not evaluated
37-027240	SDI-17813																	
37-027241	SDI-17814																	
37-027242	SDI-17815																	
37-027243	SDI-17816																	
37-027244	SDI-17817																	
37-027248	SDI-17821																	
37-027249	SDI-17822																	
37-027254	SDI-17827																	
37-027255	SDI-17828																	
37-027256	SDI-17829																	
37-027257	SDI-17830																	
37-002531	SDI-2531	1984	1	1	1	1				1		1			1		1	Potentially eligible
37-002535	SDI-2535	1977	1	1	1			1				1						Potentially eligible
37-002640	SDI-2640	1975					1	1										Not evaluated
37-002701	SDI-2701	1975		1	1							1						Potentially eligible
37-002729	SDI-2729	1976	1	1	1	1												Potentially eligible
37-002730	SDI-2730	1976		1				1										Not evaluated
37-002731	SDI-2731	1976	1	1	1													Not evaluated
37-003991	SDI-3991	1975		1	1			1										Potentially eligible
37-003992	SDI-3992	1975	1	1	1	1												Not evaluated
37-003993	SDI-3993	1975	1	1		1		1										Potentially eligible
37-003994	SDI-3994	1975	1					1										Potentially eligible
37-003995	SDI-3995	1975	1		1													Not evaluated
37-003996	SDI-3996	1979	1	1	1			1										Potentially eligible
37-003997	SDI-3997	1975	1	1	1	1		1									1	Potentially eligible
37-003998	SDI-3998	1975	1		1												1	Potentially eligible
37-003999	SDI-3999	1975	1	1	1	1		1									1	Potentially eligible
37-004000	SDI-4000	1975	1	1	1	1											1	Potentially eligible
37-004001	SDI-4001	1975	1			1												Not evaluated
37-004004	SDI-4004	1975	1	1	1	1		1										Potentially eligible
37-004006	SDI-4006	1975	1	1	1													Not evaluated
37-004007	SDI-4007	1975			1													Not evaluated
37-004008	SDI-4008	1975	1		1			1										Not evaluated
37-004009	SDI-4009	1975	1	1	1	1												Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-004010	SDI-4010	1982	1	1	1	1							1					Potentially eligible
37-004156	SDI-4156	1976											1					Not evaluated
37-004168	SDI-4168	1977		1	1				1									Not evaluated
37-004169	SDI-4169	1977	1	1	1	1												Not evaluated
37-004276	SDI-4276																	
37-004291	SDI-4291	1975				1												Not evaluated
37-004292	SDI-4292	1975		1	1													Not evaluated
37-004294	SDI-4294	1975		1	1													Not evaluated
37-004295	SDI-4295	1980	1	1	1	1	1		1									Potentially eligible
37-004296	SDI-4296	1979	1	1	1	1			1				1					Potentially eligible
37-004297	SDI-4297	1975		1	1	1												Not evaluated
37-004298	SDI-4298	1975			1													Potentially eligible
37-004299	SDI-4299	1975	1	1	1				1									Potentially eligible
37-004300	SDI-4300	1975	1	1	1	1												Not evaluated
37-004301	SDI-4301	1975			1				1								1	Potentially eligible
37-004302	SDI-4302	1975			1	1												Not evaluated
37-004303	SDI-4303	1975			1				1									Not evaluated
37-004304	SDI-4304	1975		1	1												1	Not evaluated
37-004305	SDI-4305	1975			1													Not evaluated
37-004306	SDI-4306	1975														1		Not evaluated
37-004307	SDI-4307	1975			1													Not evaluated
37-00	SDI-4308	1990			1								1					Not evaluated
37-004309	SDI-4309	1975			1													Not evaluated
37-004310	SDI-4310	1990			1								1					Not evaluated
37-004311	SDI-4311	1979	1	1	1	1			1									Potentially eligible
37-004312	SDI-4312	1975				1		1										Not evaluated
37-004313	SDI-4313	1975			1													Not evaluated
37-004314	SDI-4314	1979											1					Not evaluated
37-004315	SDI-4315	1975		1	1													Not evaluated
37-004316	SDI-4316	1977		1	1													Not evaluated
37-004317	SDI-4317	1979			1								1					Not evaluated
37-004318	SDI-4318	1979			1								1					Not evaluated
37-004319	SDI-4319	1979		1	1													Not evaluated
37-004320	SDI-4320	1979			1								1					Not evaluated
37-004321	SDI-4321	1975		1	1	1												Not evaluated
37-004322	SDI-4322	1975		1	1	1												Not evaluated
37-004323	SDI-4323	1975			1								1					Not evaluated
37-004324	SDI-4324	1975			1								1					Not evaluated
37-004325	SDI-4325	1975			1								1					Not evaluated
37-004326	SDI-4326	1977		1	1		1						1				1	Not evaluated
37-004329	SDI-4329	1975			1													Not evaluated
37-004330	SDI-4330	1975			1													Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-004331	SDI-4331	1975			1													Not evaluated
37-004332	SDI-4332	1975			1								1					Not evaluated
37-004333	SDI-4333	1975			1													Not evaluated
37-004334	SDI-4334	1975			1													Not evaluated
37-004335	SDI-4335	1975			1													Not evaluated
37-004336	SDI-4336	1975		1	1													Not evaluated
37-004337	SDI-4337	1975		1	1	1												Not evaluated
37-004338	SDI-4338	1979		1	1													Not evaluated
37-004339	SDI-4339	1975		1	1													Not evaluated
37-004340	SDI-4340	1975			1													Not evaluated
37-004341	SDI-4341	1975		1	1	1							1					Not evaluated
37-004342	SDI-4342	1975		1														Not evaluated
37-004449	SDI-4449	1976			1								1					Not evaluated
37-004450	SDI-4450	1976			1													Not evaluated
37-004461	SDI-4461	1976			1								1					Not evaluated
37-004462	SDI-4462	1976			1	1											1	Not evaluated
37-004478	SDI-4478	1976																Not evaluated
37-004946	SDI-4946	1975			1								1					Not evaluated
37-004947	SDI-4947	1975			1								1					Not evaluated
37-004948	SDI-4948	1975		1	1	1							1					Not evaluated
37-004949	SDI-4949	1975			1													Potentially eligible
37-004950	SDI-4950	1975											1					Not evaluated
37-004951	SDI-4951	1975		1	1													Not evaluated
37-004952	SDI-4952	1975			1								1					Not evaluated
37-004953	SDI-4953	1975			1								1					Not evaluated
37-004954	SDI-4954	1975			1													Not evaluated
37-004955	SDI-4955	1975			1								1					Not evaluated
37-004985	SDI-4985																	Not evaluated
37-005036	SDI-5036																	
37-005037	SDI-5037	1979		1	1													Not evaluated
37-005045	SDI-5045	1979			1								1					Not evaluated
37-005056	SDI-5056	1979	1	1	1													Not evaluated
37-005058	SDI-5058	1979	1	1	1	1												Not evaluated
37-005059	SDI-5059	1979		1	1	1												Not evaluated
37-005060	SDI-5060	1979	1	1	1													Not evaluated
37-005061	SDI-5061	1979			1													Not evaluated
37-005062	SDI-5062	1979			1													Not evaluated
37-005168	SDI-5168	1975														1		Not evaluated
37-005169	SDI-5169	1975														1		Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-005170	SDI-5170	1975														1		Not evaluated
37-005276	SDI-5276	1975	1										1					Not evaluated
37-005282	SDI-5282	1975	1		1												1	Not evaluated
37-005296	SDI-5296	1975	1	1	1													Not evaluated
37-005303	SDI-5303	1975	1			1			1									Not evaluated
37-005304	SDI-5304	1975	1	1	1	1			1									Potentially eligible
37-005305	SDI-5305	1975	1						1								1	Not evaluated
37-005306	SDI-5306	1975											1				1	Not evaluated
37-005307	SDI-5307	1975	1										1					Not evaluated
37-005308	SDI-5308	1975	1	1	1	1												Not evaluated
37-005309	SDI-5309																	
37-005311	SDI-5311	1975														1		Not evaluated
37-005312	SDI-5312	1975	1			1												Not evaluated
37-005314	SDI-5314	1975	1															Not evaluated
37-005315	SDI-5315	1975								1								Not evaluated
37-005317	SDI-5317	1975	1	1	1	1												Not evaluated
37-005318	SDI-5318	1975		1												1		Not evaluated
37-005319	SDI-5319	1975	1	1	1	1												Not evaluated
37-005320	SDI-5320	1975	1	1														Not evaluated
37-005321	SDI-5321	1975	1		1											1		Not evaluated
37-005322	SDI-5322	1975														1		Not evaluated
37-005323	SDI-5323	1975	1															Not evaluated
37-005329	SDI-5329	1979	1	1	1	1												Not evaluated
37-005330	SDI-5330	1975	1	1					1									Not evaluated
37-005331	SDI-5331	1975	1	1		1												Not evaluated
37-005332	SDI-5332	1975	1	1					1									Not evaluated
37-005333	SDI-5333	1975	1															Not evaluated
37-005334	SDI-5334	1975		1														Not evaluated
37-005335	SDI-5335	1975	1															Not evaluated
37-005338	SDI-5338	1974	1	1		1												Not evaluated
37-005395	SDI-5395	1977	1		1													Not evaluated
37-005430	SDI-5430	1978		1	1	1												Not evaluated
37-005544	SDI-5544	1978	1	1	1	1			1									Potentially eligible
37-006102	SDI-6102	1976			1													Not evaluated
37-006108	SDI-6108	1976			1								1					Not evaluated
37-006109	SDI-6109	1976			1													Not evaluated
37-006757	SDI-6757	1975	1	1	1								1					Not evaluated
37-006758	SDI-6758	1975			1	1							1					Not evaluated
37-006759	SDI-6759	1975			1													Not evaluated
37-006760	SDI-6760	1975			1								1					Not evaluated
37-006761	SDI-6761	1975			1													Not evaluated
37-006762	SDI-6762	1975			1								1					Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-006763	SDI-6763	1975			1								1					Not evaluated
37-006764	SDI-6764	1976	1	1	1	1			1			1	1					Potentially eligible
37-006765	SDI-6765	1975		1	1				1			1						Potentially eligible
37-006766	SDI-6766	1975			1													Not evaluated
37-006767	SDI-6767	1975		1	1													Not evaluated
37-006768	SDI-6768	1975		1	1	1			1									Not evaluated
37-006769	SDI-6769	1975			1													Not evaluated
37-006770	SDI-6770	1976	1	1	1	1			1				1			1	1	Potentially eligible
37-006772	SDI-6772	1979	1	1	1	1										1		Not evaluated
37-006775	SDI-6775	1977	1	1	1	1					1							Potentially eligible
37-006776	SDI-6776	1979							1									Not evaluated
6779	SDI-6779	1976	1														1	Not evaluated
37-006780	SDI-6780	1976		1	1				1									Not evaluated
37-006781	SDI-6781	1976		1	1				1									Not evaluated
37-006782	SDI-6782	1979	1	1	1								1					Not evaluated
37-006783	SDI-6783	1976	1	1	1				1			1					1	Potentially eligible
37-006784	SDI-6784	1975			1								1					Not evaluated
37-006787	SDI-6787	1975			1	1											1	Not evaluated
37-006789	SDI-6789	1975	1	1	1	1												Not evaluated
37-006790	SDI-6790	1975			1													Not evaluated
37-006791	SDI-6791	1975	1	1	1	1												Not evaluated
37-006792	SDI-6792	1975		1	1													Not evaluated
37-006794	SDI-6794	1976	1		1								1					Not evaluated
37-006795	SDI-6795	1976			1													Not evaluated
37-006798	SDI-6798	1976			1													Not evaluated
37-006799	SDI-6799	1976		1	1													Not evaluated
37-006863	SDI-6863	1990	1	1	1													Not evaluated
37-006864	SDI-6864	1990		1	1													Not evaluated
37-006865	SDI-6865	1978		1	1	1	1						1					Not evaluated
37-006866	SDI-6866	1979	1	1	1	1		1										Potentially eligible
37-006872	SDI-6872	1979		1	1												1	Not evaluated
37-006874	SDI-6874																	
37-006881	SDI-6881																	
37-006884	SDI-6884	1979		1	1													Not evaluated
37-006885	SDI-6885	1979	1	1	1													Not evaluated
37-006887	SDI-6887	1979	1	1	1	1												Not evaluated
37-006889	SDI-6889	1979	1	1	1													Not evaluated
37-006890	SDI-6890	1979	1	1	1													Not evaluated
37-006905	SDI-6905	2003	1	1	1	1												Not evaluated
37-006993	SDI-6993																	
37-007038	SDI-7038	1979					1											Not evaluated
37-007046	SDI-7046	1979			1												1	Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-007051	SDI-7051	1981	1	1	1				1					1				Potentially eligible
37-007052	SDI-7052	1979			1													Not evaluated
37-007057	SDI-7057	1979					1											Not evaluated
37-007058	SDI-7058	1979			1												1	Not evaluated
37-007059	SDI-7059	1979	1	1	1	1												Not evaluated
37-007061	SDI-7061	1979					1		1									Not evaluated
37-007062	SDI-7062	1979			1													Not evaluated
37-007080	SDI-7080	1979														1		Not evaluated
37-007086	SDI-7086	1979		1	1													Not evaluated
37-007087	SDI-7087	1979			1													Not evaluated
37-007150	SDI-7150	1979		1	1				1									Not evaluated
37-007164	SDI-7164	1979	1	1	1				1									Potentially eligible
37-007173	SDI-7173	1979	1														1	Not evaluated
37-007178	SDI-7178	1979	1		1	1												Not evaluated
37-000750	SDI-750	1949	1	1	1	1									1		1	Potentially eligible
37-007891	SDI-7891	1977			1													Not evaluated
37-008388	SDI-8388	1974		1	1	1						1	1					Potentially eligible
37-008684	SDI-8684	1981	1	1	1	1												Not evaluated
37-008702	SDI-8702	1981		1	1													Not evaluated
37-008703	SDI-8703	1981	1	1	1	1							1					Potentially eligible
37-008704	SDI-8704	1981	1	1	1	1												Not evaluated
37-008705	SDI-8705	1981		1	1	1			1									Potentially eligible
37-008706	SDI-8706	1981		1	1													Not evaluated
37-008707	SDI-8707	1981	1	1	1	1												Not evaluated
37-008708	SDI-8708	1981	1															Not evaluated
37-008709	SDI-8709	1981	1															Not evaluated
37-008711	SDI-8711	1981	1	1	1													Not evaluated
37-008712	SDI-8712	1981	1	1	1	1												Not evaluated
37-008796	SDI-8796																	
37-009112	SDI-9112	1981	1		1													Not evaluated
37-009157	SDI-9157	1981			1													Not evaluated
37-009159	SDI-9159	1981														1		Not evaluated
37-009160	SDI-9160	1981														1		Not evaluated
37-009223	SDI-9223	1982	1	1	1	1												Not evaluated
37-009224	SDI-9224	1982			1	1												Not evaluated
37-009225	SDI-9225	1982		1	1	1			1									Potentially eligible
37-009226	SDI-9226	1982		1	1	1												Not evaluated
37-009227	SDI-9227	1981		1	1													Not evaluated
37-009228	SDI-9228	1981		1														Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-009229	SDI-9229	1981		1	1								1					Not evaluated
37-009283	SDI-9283																	
37-009294	SDI-9294	1976	1		1								1					Not evaluated
37-009295	SDI-9295	1976			1	1												Not evaluated
37-009297	SDI-9297	1990	1	1	1								1					Potentially eligible
37-009298	SDI-9298	1976													1	1		Potentially eligible
37-009299	SDI-9299	1976	1		1								1					Potentially eligible
37-009300	SDI-9300	1976	1										1					Not evaluated
37-009301	SDI-9301	1976			1								1					Not evaluated
37-009302	SDI-9302	1976			1													Not evaluated
37-009303	SDI-9303	1976											1					Not evaluated
37-009304	SDI-9304	1976		1	1	1		1					1					Potentially eligible
37-009307	SDI-9307	1977			1								1					Not evaluated
37-009308	SDI-9308	1977		1	1				1									Not evaluated
37-009309	SDI-9309	1977			1								1					Not evaluated
37-009310	SDI-9310	1977		1	1								1					Not evaluated
37-009311	SDI-9311	1977	1	1	1	1			1									Potentially eligible
37-009313	SDI-9313	1977	1	1	1	1			1									Potentially eligible
37-009314	SDI-9314	1977	1	1	1	1			1				1					Potentially eligible
37-009315	SDI-9315	1990			1								1					Not evaluated
37-009316	SDI-9316	1979		1	1													Not evaluated
37-009317	SDI-9317	1979			1													Not evaluated
37-009318	SDI-9318	1979		1	1													Not evaluated
37-009319	SDI-9319	1978	1	1	1				1									Potentially eligible
37-009320	SDI-9320	1979			1								1					Not evaluated
37-009322	SDI-9322	1976			1													Not evaluated
37-009324	SDI-9324	1976											1					Not evaluated
37-009325	SDI-9325	1976			1								1					Not evaluated
37-009326	SDI-9326	1976											1					Not evaluated
37-009327	SDI-9327	1976		1	1												1	Not evaluated
37-009328	SDI-9328	1976	1		1								1					Potentially eligible
37-009329	SDI-9329	1978		1		1	1						1					Not evaluated
37-009330	SDI-9330	1978	1	1	1	1							1					Potentially eligible
37-009331	SDI-9331	1978	1	1	1				1									Potentially eligible
37-009333	SDI-9333	1976		1	1		1						1					Not evaluated
37-009334	SDI-9334	1977					1						1					Not evaluated
37-009335	SDI-9335	1977											1					Not evaluated
37-009336	SDI-9336	1977											1					Not evaluated
37-009337	SDI-9337	1977		1	1		1						1					Not evaluated
37-009338	SDI-9338	1977											1					Not evaluated
37-009339	SDI-9339	1977		1	1													Not evaluated
37-009340	SDI-9340	1977		1	1								1					Not evaluated

APPENDIX G
CULTURAL RESOURCES ON BLM-ADMINISTERED LANDS WITHIN THE PLANNING AREA
(CONT.)

PNUMBER	TRINOMIAL	Last Recorded	Bedrock milling	Ceramic	Lithic	Groundstone	Cairn	Rock Ring	Rock Shelter	Rock alignment	Cleared circle	Rock Art	Hearth	House pit	Human Remains	Historic	Other	National Register Status
37-009341	SDI-9341	1977		1									1					Not evaluated
37-009342	SDI-9342	1978		1			1						1					Not evaluated
37-009344	SDI-9344	1976			1								1					Not evaluated
37-009345	SDI-9345	1976			1													Not evaluated
37-009347	SDI-9347	1979			1													Not evaluated
37-009348	SDI-9348	1979		1	1				1									Not evaluated
37-009349	SDI-9349	1979			1								1					Not evaluated
37-009350	SDI-9350	1979		1	1	1							1					Not evaluated
37-009351	SDI-9351	1979											1					Not evaluated
37-009352	SDI-9352	1979		1									1					Not evaluated
37-009353	SDI-9353	1979	1		1													Not evaluated
37-009354	SDI-9354	1979		1	1													Not evaluated
37-009355	SDI-9355	1979	1	1	1													Not evaluated
37-009356	SDI-9356	1979	1	1														Not evaluated
37-009357	SDI-9357	1979	1	1														Not evaluated
37-009358	SDI-9358	1979			1													Not evaluated
37-009359	SDI-9359	1979			1													Not evaluated
37-009360	SDI-9360	1979	1	1	1	1												Not evaluated
37-009361	SDI-9361	1979	1	1	1	1												Not evaluated
37-009362	SDI-9362	1979		1	1				1									Not evaluated
37-009363	SDI-9363	1979		1	1													Not evaluated
37-009364	SDI-9364	1979		1	1	1			1			1						Potentially eligible
37-009365	SDI-9365	1980															1	Not evaluated
37-009366	SDI-9366	1980	1	1	1	1			1			1	1					Potentially eligible
37-009424	SDI-9424	1982	1	1	1	1												Not evaluated
37-009425	SDI-9425	1976			1													Not evaluated
37-009426	SDI-9426	1976			1													Not evaluated
37-009428	SDI-9428	1976			1													Not evaluated
37-009433	SDI-9433	1980		1	1					1								Not evaluated
37-009434	SDI-9434	1980			1		1											Not evaluated
37-009435	SDI-9435	1980		1	1													Not evaluated
37-009436	SDI-9436	1980		1														Not evaluated
37-009437	SDI-9437	1980		1	1													Not evaluated
37-009756	SDI-9756	1986	1															Not evaluated
37-009932	SDI-9932	1983	1	1														Not evaluated
37-009938	SDI-9938																	
37-009983	SDI-9983	1979											1					Not evaluated
37-009984	SDI-9984	1979											1					Not evaluated
37-009986	SDI-9986	1979														1		Not evaluated
37-009987	SDI-9987	1979	1	1	1									1	1			Potentially eligible
37-002532	SDI-2532	1979	1	1	1	1			1			1					1	Potentially eligible
TOTALS			**143**	**210**	**274**	97	**28**	4	**56**	**4**	**1**	**11**	**121**	**2**	**4**	19	**28**	

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APPENDIX H

CARRIZO GORGE WILDERNESS
14,722 Acres
Designated October 31, 1994 by the California Desert Protection Act, Public Law 103-433

This is the final legal description as required in Section 103(b) of the above mentioned Act. It describes the boundary for the Carrizo Gorge Wilderness Area located in San Diego County, California and managed by the Bureau of Land Management. The boundary is more particularly described as follows:

Beginning at the corner of sections 25, 30, 31, and 36, Township 15 South, Ranges 6 and 7 East, San Bernardino Meridian, and identical to the intersection of the Anza-Borrego Desert State Park boundary, this point being the point of beginning;

thence easterly, between sections 30 and 31, 29 and 32, 28 and 33, sections 27 and 34, and 26 and 35, along the Anza-Borrego Desert State Park boundary to point 1, the corner of sections 25, 26, 35, and 36;

thence southerly, between sections 35 and 36 along the Anza-Borrego Desert State Park boundary to point 2, the corner common to sections 35, 36, and 1 and 2, on the township line between Townships 15 and 16 South, Range 7 East;

thence southerly, between sections 1 and 2, 11 and 12, 13 and 14, 23 and 24, 25 and 26, 35 and 36, Township 16 South, Range 7 East, along the Anza-Borrego Desert State Park boundary, to point 3, the corner of sections 35 and 36 only, on the township line between Ts. 16 and 17 S., R. 7 E. only;

thence easterly, on said township line between sections 1 and 36, along the Anza-Borrego Desert State Park boundary, to point 4, the corner of sections 1 and 6 only, Township 17 South, Ranges 7 and 8 East;

thence southerly on said range line, between sections 1 and 6, 7 and 12, 13 and 18, and 19 and 24 , along the Anza-Borrego Desert State Park boundary, to point 5, the corner of sections 19, 24, 25, and 30;

thence westerly leaving the Anza-Borrego Desert State Park boundary, between sections 24 and 25 to point 6, the corner of sections 23, 24, 25, and 26, T. 17 S., R. 7 E.;

thence southerly, between sections 25 and 26 to point 7, the intersection with a line parallel with and 300 feet northerly of the centerline of the west bound lanes of Interstate Route 8;

thence westerly, parallel with and 300 feet northerly of said centerline to point 8, the intersection with the section line between sections 26 and 27;

thence northerly, between sections 26 and 27 to point 9, the corner of sections 22, 23, 26, and 27;

thence easterly, between sections 23 and 26 to point 10, the west 1/16 corner of sections 23 and 26;

thence northerly, on the north/south centerline of the southwest 1/4 of section 23 to point 11, the southwest 1/16 corner of section 23;

ORIGINAL

thence easterly, along the east/west centerline of the southwest 1/4 and along the east/west centerline of the southeast 1/4 of section 23 to point 12, the southeast 1/16 corner of section 23;

thence northerly, on the north/south centerline of the southeast 1/4 of section 23 to point 13, the center east 1/16 corner of section 23;

thence westerly, on the east/west centerline of section 23 to point 14, the center 1/4 corner of section 23;

thence northerly, on the north/south centerline of section 23 to point 15, a point East of a hill, said hill having NAD 1927 coordinates of 32°40'38" N. latitude, 116°14'05" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Jacumba, Calif.", 1959, photorevised 1975;

thence West to point 16, said hill;

thence northeasterly, to point 17, a hill having NAD 1927 coordinates of 32°41'16" N. latitude, 116°13'56" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Jacumba, Calif.", 1959, photorevised 1975;

thence northeasterly, to point 18, Mt. Tule, having an elevation of 4647 feet, as shown on the U.S.G.S. 7 ½ minute Quadrangle "Jacumba, Calif.", 1959, photorevised 1975;

thence northerly to point 19, the southeast 1/16 corner of section 2;

thence northwesterly to point 20, the center-north 1/16 corner of section 2;

thence northerly, on the north/south centerline of section 2, to point 21, the 1/4 corner of section 2, on the township line between Townships 16 and 17 South, Range 7 East;

thence northeasterly to point 22, a saddle having NAD 1927 coordinates of 32°44'08" N. latitude, 116°13'40" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Jacumba, Calif.", 1959, photorevised 1975;

thence northwesterly to point 23, a junction of washes having NAD 1927 coordinates of 32°44'22" N. latitude, 116°14'02" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Jacumba, Calif.", 1959, photorevised 1975;

thence northerly, to point 24, a hill having NAD 1927 coordinates of 32°45'02" N. latitude, 116°14'06" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Sweeney Pass, Calif.", 1959;

thence northerly, to point 25, a peak having NAD 1927 coordinates of 32°45'42" N. latitude, 116°14'09" W. longitude, as scaled from the U.S.G.S. 7 ½ minute Quadrangle "Sweeney Pass, Calif.", 1959;

thence northerly, to point 26, the corner of sections 14, 15, 22, and 23, Township 16 South, Range 7 East;

thence westerly, between sections 15 and 22 to point 27, the 1/4 corner of sections 15 and 22;

thence northwesterly to point 28, the 1/4 corner of sections 15 and 16;

thence northerly, between sections 15 and 16 to point 29, the corner of sections 9, 10, 15, and 16;

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thence northwesterly, to point 30, the 1/4 corner of sections 8 and 9;

thence northwesterly, to point 31, the northeast 1/16 corner of section 8;

thence westerly, on the east/west centerline of the northeast 1/4 of section 8 to point 32, the center north 1/16 corner of section 8;

thence westerly, on the east/west centerline of the NW 1/4 of section 8 to point 33, the north 1/16 corner of sections 7 and 8;

thence westerly, on the east/west centerline of the NE 1/4 of section 7 to point 34, the NE 1/16 corner of section 7;

thence northerly, on the north/south centerline of the northeast 1/4 of section 7 to point 35, the east 1/16 corner of sections 6 and 7;

thence westerly, between sections 6 and 7 to point 36, the 1/4 corner of sections 6 and 7;

thence northerly, on the north/south centerline of section 6 to point 37, the 1/4 corner of sections 6 and 31, on the township line between Townships 15 and 16 South, Range 7 East;

thence northwesterly, to point 38, the 1/4 corner of sections 31 and 36, on the range line between Township 15 South, Ranges 6 and 7 East, said point identical to the intersection of the Anza-Borrego Desert State Park boundary;

thence northerly, between sections 31 and 36 along the Anza-Borrego Desert State Park boundary, to the point of beginning.

END OF DESCRIPTION

The above description containing approximately 14,722 acres utilizes the Jacumba, Sombrero Peak, and Sweeney Pass 7.5 minute quadrangle maps prepared by the USGS. The boundary calls listed herein are in part a result of scaling distances from said quad maps and are not a result of survey. All courses have been depicted upon the above mentioned quad maps and are made a part of this official record. Acreage is calculated from the CASO ArcInfo wilderness coverage.

I hereby certify the legal description and map herewith represent the location of the boundary of the Carrizo Gorge Wilderness area designated by the California Desert Protection Act, Public Law 103-433, dated October 31, 1994.

Signed: _____ APR 15 1999

Al Wright
Acting State Director, California

Date

ORIGINAL

SAWTOOTH MOUNTAINS WILDERNESS
30,679 Acres
Designated October 31, 1994 by the California Desert Protection Act, Public Law 103-433

This is the final legal description as required in Section 103(b) of the above mentioned Act. It describes the boundary for the Sawtooth Mountains Wilderness Area located in San Diego County, California and managed by the Bureau of Land Management. The boundary is more particularly described as follows:

From the corner of sections 27, 28, 33, and 34, T. 15 S. R. 6 E., S.B.M., this point being the point of beginning;

thence northerly between sections 27 and 28, 21 and 22 to point 1, the corner of sections 15, 16, 21, and 22;

thence westerly between sections 16 and 21 to point 2, the corner of sections 16, 17, 20, and 21;

thence northerly between sections 16 and 17 to point 3, the 1/4 corner of sections 16 and 17;

thence westerly on the east-west centerline of sections 17 and 18 to point 4, the center west 1/16 corner of section 18;

thence northerly on the north-south centerline of the NW 1/4 of section 18 and the north-south centerline of the SW 1/4 of section 7 to point 5, the center west 1/16 corner of section 7;

thence westerly on the east-west centerline of section 7 to point 6, the 1/4 corner of section 7 only;

thence northerly on the range line between sections 7 and 12, 1 and 6, T. 15 S., Rgs., 5 and 6 E., to point 7, the township corner of sections 1, 6, 31, and 36, Tps. 14 and 15 S., Rgs. 5 and 6 E.;

thence westerly on the township line between sections 1 and 36, 2 and 35, Tps. 14 and 15 S., R. 5 E., to point 8, the corner of sections 2, 3, 34, and 35;

thence northerly between sections 34 and 35, 26 and 27, T. 14 S., R 5 E., to point 9, the corner of sections 22, 23, 26, and 27;

thence easterly between sections 23 and 26 to point 10, the 1/4 corner of sections 23 and 26;

thence southerly on the north-south centerline of section 26 to point 11, the center 1/4 corner of section 26;

thence easterly on the east-west centerline of section 26 to point 12, the center east 1/16 corner of section 26;

thence northerly on the north-south centerline of the NE 1/4 of section 26 to point 13, the northeast 1/16 corner of section 26;

thence easterly on the east-west centerline of the NE 1/4 of section 26 to point 14, the north 1/16 corner between

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sections 25 and 26;

thence southerly between sections 25 and 26 to point 15, the south 1/16 corner between sections 25 and 26;

thence easterly on the east-west centerline of the SW 1/4 of section 25 to point 16, the southwest 1/16 corner of section 25;

thence northerly on the north-south centerline of the SW 1/4 and the north-south centerline of the NW 1/4 of section 25 and the north-south centerline of the SW 1/4 of section 24 to point 17, the intersection of a line parallel with and 30 feet southeasterly of the centerline of a jeep trail:

thence northeasterly parallel with and 30 feet southeasterly of the centerline of said trail to point 18, the intersection of a line parallel with and 30 feet southeasterly of the centerline of a jeep trail, located in the SW 1/4 of section 18, T. 14 S. R. 6 E.:

thence northeasterly parallel with and 30 feet southeasterly of the centerline of said trail to point 19, the intersection of a line parallel with and 30 feet southerly of the centerline of a jeep trail, located in the NE 1/4 of section 18;

thence easterly parallel with and 30 feet southerly of the centerline of said trail to point 20, the intersection of the section line between sections 16 and 17;

thence southerly between sections 16 and 17 to point 21, the corner of sections 16, 17, 20, and 21;

thence easterly between sections 16 and 21 to point 22, the corner of sections 15, 16, 21, and 22;

thence northerly between sections 15 and 16 to point 23, the corner of sections 9, 10, 15, and 16;

thence easterly between sections 10 and 15 to point 24, the west 1/16 corner of sections 10 and 15;

thence northerly on the north-south centerline of the SW 1/4 of section 10 to point 25, the center west 1/16 corner of section 10;

thence easterly on the east-west centerline of section 10 to point 26, the 1/4 corner of sections 10 and 11;

thence northerly between sections 10 and 11 to point 27, the south-north 1/64 corner of sections 10 and 11;

thence easterly on the east-west centerline of the SW 1/4 of the NW 1/4 of section 11 to point 28, the center-south-northwest 1/64 corner of section 11;

thence southerly on the north-south centerline of the NW 1/4 of section 11 to point 29, the center west 1/16 corner of section 11;

thence easterly on the east-west centerline of section 11 to point 30, the intersection with a line parallel with and 300 feet southwesterly of the centerline of County Road S2;

thence southeasterly, parallel with and 300 feet southwesterly of said centerline to point 31, the intersection of the north-south centerline of section 11 and identical of the intersection of the Anza-Borrego Desert State Park boundary;

thence southerly on the north-south centerline of section 11 along the Anza-Borrego Desert State Park boundary to point 32, the 1/4 corner of sections 11 and 14;

thence easterly between sections 11 and 14 along the Anza-Borrego Desert State Park boundary to point 33, the corner of sections 11, 12, 13, and 14;

thence southerly between sections 13 and 14, 23 and 24, 25 and 26 along the Anza-Borrego Desert State Park boundary, to point 34, the corner of sections 25, 26, 35, and 36;

thence easterly between sections 25 and 36 along the Anza-Borrego Desert State Park boundary, to point 35, the corner of sections 25, 30, 31, and 36, on the range line, T. 14 S., Rgs. 6 and 7 E.;

thence continuing easterly, between sections 30 and 31, 29 and 32, 28 and 33 along the Anza-Borrego Desert State Park boundary, to point 36, the corner of sections 27, 28, 33, and 34, T. 14 S., R 7 E.;

thence southerly leaving the Anza-Borrego Desert State Park boundary between sections 33 and 34, to point 37, the corner of sections 3, 4, 33, and 34 on the township line between Tps. 14 and 15 S., R. 7 E.;

thence southerly between sections 3 and 4, T. 15 S., R. 7 E., to point 38, the intersection of a line parallel with and 30 feet northwesterly of a jeep trail (Canebrake Canyon Road) located in the NE 1/4 of section 4;

thence southwesterly on a line parallel with and 30 feet northwesterly of the centerline of said jeep trail to point 39, the intersection of line 1-2 of Tract 37;

thence westerly on line 1-2 of said tract to point 40, the intersection of a line parallel with and 30 feet northeasterly of said jeep trail;

thence northwesterly changing to the southwesterly, on a line parallel with and 30 feet northeasterly changing to northwesterly of the centerline of a jeep trail, to point 41, the intersection of line 1-2 of Tract 37;

thence westerly on line 1-2 of said tract to point 42, corner 2 of said Tract 37;

thence southerly on line 2-3 of said tract to point 43, corner 3 of said Tract 37, and on line 1-2 of Tract 38;

thence westerly on line 1-2 of Tract 38 to point 44, corner 2 of Tract 38;

thence southerly on line 2-3 of said tract to point 45, corner 3 of said Tract 38;

thence easterly on line 3-4 of said tract to point 46, corner 4 of said Tract 38;

thence northerly on line 4-1 of said tract to point 47, corner 1 of said Tract 38, and on line 3-4 of Tract 37;

thence easterly on line 3-4 of Tract 37 to point 48, the intersection of the section line between section 3 and 4;

thence southerly between sections 3 and 4 and identical with the intersection of the Anza-Borrego Desert State Park boundary, to point 49, the corner of sections 3, 4, 9, and 10;

thence westerly between sections 4 and 9 along the Anza-Borrego Desert State Park boundary, to point 50, the 1/4

corner of sections 4 and 9;

thence southerly on the north-south centerline of section 9 along the Anza-Borrego Desert State Park boundary, to point 51, the center 1/4 corner of section 9;

thence westerly on the east-west centerline of section 9 along the Anza-Borrego Desert State Park boundary, to point 52, the 1/4 corner of sections 8 and 9;

thence southerly between sections 8 and 9 along the Anza-Borrego Desert State Park boundary, to point 53, the corner of sections 8, 9, 16, and 17;

thence westerly between sections 8 and 17 along the Anza-Borrego Desert State Park boundary, to point 54, the 1/4 corner of sections 8 and 17:

thence southerly on the north-south centerline of section 17 along the Anza-Borrego Desert State Park boundary to point 55, the center 1/4 corner of section 17;

thence westerly on the east-west centerline of section 17, along the Anza-Borrego Desert State Park boundary, to point 56, the 1/4 corner of sections 17 and 18;

thence southerly between sections 17 and 18 along the Anza-Borrego Desert State Park boundary, to point 57, the corner of sections 17, 18, 19, and 20;

thence westerly between sections 18 and 19 along the Anza-Borrego Desert State Park boundary, to point 58, the corner of sections 13, 18, 19, and 24, on the range line, T. 15 S., Rgs. 6 and 7 E.;

thence northerly on said range line between sections 13 and 18 along the Anza-Borrego Desert State Park boundary, to point 59, the corner of sections 7, 12, 13, and 18;

thence westerly between sections 12 and 13 along the Anza-Borrego Desert State Park boundary, to point 60, the 1/4 corner of sections 12 and 13, T. 15 S., R. 6 E.;

thence southerly on the north-south centerline of section 13 along the Anza-Borrego Desert State Park boundary, to point 61, the 1/4 corner of sections 13 and 24:

thence westerly between sections 13 and 24 along the Anza-Borrego Desert State Park boundary, to point 62, the west 1/16 corner of sections 13 and 24;

thence southerly on the north-south centerline of the NW 1/4 of section 24 along the Anza-Borrego Desert State Park boundary, to point 63, the northwest 1/16 corner of Section 24;

thence westerly on the east-west centerline of the NW 1/4 of section 24 along the Anza-Borrego Desert State Park boundary, to point 64, the north 1/16 corner of sections 23 and 24;

thence southerly between sections 23 and 24 along the Anza-Borrego Desert State Park boundary, to point 65, the 1/4 corner of sections 23 and 24;

thence westerly on the east-west centerline of section 23 along the Anza-Borrego Desert State Park boundary to

point 66, the center 1/4 corner of section 23;

thence southerly on the north-south centerline of sections 23 and 26 along the Anza-Borrego Desert State Park boundary, to point 67, the 1/4 corner between sections 26 and 35;

thence westerly between sections 26 and 35, 27 and 34 leaving the Anza-Borrego Desert State Park boundary, to the point of beginning.

END OF DESCRIPTION

The above description containing approximately 30,679 acres utilizes the Agua Caliente Springs, Monument Peak, Mount Laguna, and Sombrero Peak 7.5 minute quadrangle maps prepared by the USGS. The boundary calls listed herein are in part a result of scaling distances from said quad maps and are not a result of survey. All courses have been depicted upon the above mentioned quad maps and are made a part of this official record. Acreage is calculated from the BLM California State Office ArcInfo wilderness coverage.

I hereby certify the legal description and map herewith represent the location of the boundary of the Sawtooth Mountains Wilderness area designated by the California Desert Protection Act, Public Law 103-433, dated October 31, 1994.

Signed: _____ APR 15 1999

Al Wright
Acting State Director, California

Date

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APPENDIX I

BLM
3031 - ENERGY AND MINERAL RESOURCE ASSESSMENT

Mineral Potential Classification System*

I Level of Potential

O The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.

L The geologic environment and the inferred geologic processes indicate low potential for accumulation of mineral resources.

M The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly indicate moderate potential for accumulation of mineral resources.

H The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The "known mines and deposits" do not have to be within the area that is being classified, but have to be within the same type of geologic environment.

ND Mineral(s) potential not determined due to lack of useful data. This notation does not require a level-of-certainty qualifier.

II. Level of Certainty

A. The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.

B. The available data provide indirect evidence to support or refute the possible existence of mineral resources.

C. The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral

D. The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

For the determination of No Potential use O/D. This class shall be seldom used, and when used it should be for a specific commodity only. For example, if the available data show that the surface and subsurface types of rock in the respective area is batholithic (igneous intrusive), one can conclude, with reasonable certainty, that the area does not have potential for coal.

* As used in this classification, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, that is, be extracted profitably.

APPENDIX J

CATEGORIES AND DEFINITION FOR RECREATION OPPORTUNITY SPECTRUM (ROS)

The purpose of the Recreation Opportunity Spectrum (ROS) is to inventory the existing recreation situation and provide options for future recreation management on the public lands within the Planning Area.

Recreation opportunities within the Planning Area are classified according to the following nine physical, social, and administrative attributes:

1. **Degree of Development.** Degree that highway or other municipal, industrial, or commercial structures are present.

2. **Degree of Natural Resource Modification.** Degree that the visitors are aware that the natural resources have been altered by human activity, technology, or development.

3. **Degree that Natural Ambiance Dominates the Area.** Degree that there is a sense of tranquility and opportunity to see, hear, and smell nature.

4. **Degree of Visitor Presence.** Degree that the sights, sounds, and smells of other visitors, their equipment, their impacts, or litter are present.

5. **Degree of Recreation Diversity.** Degree that there is a mixture of recreation activities being participated in or equipment being used.

6. **Degree of Solitude and Remoteness.** Degree that visitors view themselves as being alone and far away from civilization in a wild and remote place.

7. **Degree of Management Presence.** Degree that management personnel, patrols, signs, equipment, restrictions, security lighting, or interpretive programs are present.

8. **Degree of Public Access.** Degree that developed access facilities are present.

9. **Degree of Developed Recreation Facilities and Sites.** Degree that developed campgrounds, parking areas, picnic sites, nature trails, restroom facilities, or other amenities is present.

Visitor use patterns within the Planning Area are year round. Visitors primarily participate in camping, OHV riding, hunting, target shooting, hiking, rock hounding, wildlife viewing, 4x4 touring, and horse back riding The ROS inventory and proposed ROS prescriptions reflect the social and administrative settings.

Recreation opportunities range from urban to primitive and are defined below. These definitions are meant to provide general guidelines for the appropriate levels of

recreation management and convey to the public the types of recreation opportunities available. The definitions are not meant to restrict or authorize management and administrative actions, and the ECFO would continue to determine the appropriate levels of recreation management to protect natural and cultural resources and human health and safety on a case-by-case basis.

Urban Recreation Experience. Area provides very limited opportunities to see, hear, and smell the natural resources because of the extensive level of development, human activity, and natural resource modification; watching and meeting other visitors is expected and desired; large group activities are popular; opportunity to briefly relieve stress and to alter everyday routines is important; socializing with family and friends is important; large groups and families are common; a high sense of safety, security, comfort, and convenience is central and dominant; the mix of recreation activities may be diverse, ranging from those of relaxation and contemplation to those of physical exertion, thrills, excitement and challenge; area is often attractive to short-term visitors, tours, and school groups; area may serve as a staging area for visitors traveling on to areas with non-urban recreation settings.

Suburban Recreation Experience. Area provides limited or little opportunity to see, hear, or smell the natural resources because of the widespread and very prevalent level of development, human activity, or natural resource modification; watching and meeting other visitors is expected and desired; opportunity to briefly relieve stress and to alter everyday routine is important; families are common; a high sense of safety, security, comfort, and convenience is central and dominant; the mix of recreation activities may be diverse, ranging from relaxation and contemplation to physical exertion, thrills, excitement, and challenge; learning about the natural and cultural history of the area is important to some; area is popular with local residents or long-term visitors.

Rural Developed Recreation Experience. Area provides occasional or periodic opportunities to see, hear, or smell the natural resources because of the common and frequent level of development, human activity, or natural resource modification; opportunity to experience brief periods of solitude and change from everyday sights and sounds is important; socialization within and outside one's group is typical and the presence of other visitors is expected; opportunity to relieve stress and to alter everyday routines is important; a moderate level of comfort and convenience is important; a sense of safety and security is important; the array of recreation activities may be diverse, ranging from relaxation and contemplation to physical exertion and challenge; area is typically attractive for day-use and weekend visits from regional metropolitan areas and smaller nearby communities.

Rural Natural Recreation Experience. Area provides prevalent opportunities to see, hear, or smell the natural resources because development, human activity, and natural resource modifications are occasional and infrequent; socialization with others is expected and tolerated; opportunity to relieve stress and to get away from built

environment is important; a high sense of safety, security, comfort and convenience is not important nor expected; a sense of independence and freedom with a moderate level of management presence is important; moments of solitude, tranquility, and nature appreciation are important; experiences tend to be more resource-dependent, although may be diverse, ranging from relaxation and contemplation to socialization, to physical exertion and challenge; area is typically attractive to extended weekend visitors using recreation vehicles, tents, or rustic cabins.

Semi-primitive Recreation Experience. Area provides widespread and very prevalent opportunities to see, hear, or smell the natural resources because development, human activity, and natural resource modifications are seldom encountered; opportunity to experience a natural ecosystem with little human imprint is important; a sense of challenge, adventure, risk, and self-reliance is important; solitude and lack of contact with other visitors, managers, and facilities is important; the recreation experiences tend to be more resource-based; a sense of independence, freedom, tranquility, relation, nature appreciation and wonderment, testing skills, and stewardship is typical; area provides opportunities for the more adventure-based enthusiasts. Overnight visits are typically car and tent camping far from modern conveniences and facilities. Knowledge of survival skills is critical to visitor safety. Topography, an absence of existing roads, or resource protection measures may limit motorized access.

Primitive Recreation Experience. Area provides extensive opportunities to see, hear, or smell the natural resources because development, human activity, and natural resource modifications are rare; opportunity to experience natural ecosystems with very little and no apparent human imprint is paramount; natural views, sounds, and smells dominate; a sense of solitude, tranquility, challenge, adventure, risk, orienteering, and self-reliance is important; a sense of freedom, tranquility, humility, relaxation, nature appreciation, wonderment, and stewardship is central and dominant; overnight visitors tent camp with no modern facilities; adventure travelers are often attracted to the undisturbed wild settings.

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APPENDIX K

Record of Non-Applicability

Department of the Interior

Bureau of Land Management

Record of Non-Applicability

Eastern San Diego County, California
Resource Management Plan

Pursuant to Section 176 (c) of the Clean Air Act, as amended by the 1990 amendments; the General Conformity Rule at 40 CFR Parts 51 and 93, the Department of the Interior (DoI) determined that the majority of practices outlined in the 2006 Resources Management Plan (RMP) are exempt from conformity requirements. The 2006 RMP allows for activities including OHV use, vehicle emissions, dust, construction and maintenance activities, and mineral activities, which are estimated to be below *de minimis* thresholds. Consequently, the Proposed Action is exempt from the conformity determination requirements of the Environmental Protection Agency's conformity rule.

To the best of my knowledge, the information contained in the DOI's applicability analysis is correct and accurate and I concur in the finding that air emissions associated with the proposed action are below *de minimis* levels, are not regionally significant, and therefore do not require further conformity analysis or determination.

Vicki L Wood — 1-22-07

Vicki L. Wood
Field Manager
El Centro Field Office
Bureau of Land Management

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 South 4th Street
El Centro, CA 92243

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