

# Proposed Northern & Eastern Colorado Desert Coordinated Management Plan

an amendment to the California Desert Conservation Area Plan 1980  
and Sikes Act Plan with the California Department of Fish and Game  
and

## Final Environmental Impact Statement



**U.S. Department of Interior  
Bureau of Land Management  
California Desert District  
and**

**California Department of Fish and Game  
Inland, Deserts, and Eastern Sierra Region**



# **Chapter 1**

## **Introduction**

### **Changes to this chapter in developing the FEIS**

1. Table 1-1 of Land Ownership in the Planning Area was added.
2. Discussion of Planning Issues and Criteria was split into Sections 1.5 and 1.6.
3. Re-titled and expanded Section 1.7 on consistency with other plans to include discussion of wild and scenic rivers and wilderness management.
4. Added Section 1.9 entitled Using this Document.



## Chapter 2

# Alternatives

### Changes to this chapter in developing the FEIS

1. The Preferred Alternative in the DEIS was altered (see next paragraph) as a result of a consideration of public comments, discussions with other local, state, and federal agencies, and BLM internal review (including the need for consistency among the various concurrent plans which together amend the CDCA Plan).
2. Changes to the Preferred Alternative actions include the following (*with rationale included*):
  - to most sections: several technical and editorial corrections and changes
  - Section 2.1, Standards and Guidelines: minor technical (*program consistency*)
  - Section 2.2, Recovery of Desert Tortoise, change in procedures for programmatic tiered biological opinion (*discussion with USFWS*)
  - Section 2.2, Recovery of Desert Tortoise, Grazing Management: restriction period, utilization limit, temporary non-renewable authorization, (*plan-plan consistency and BO for the Mojave National Preserve*)
  - Section 2.3, Management of Special Status Animal and Plants and Natural Communities: delete Milpitas HMP from CDCA Plan, clarify authorization of artificial waters in wilderness areas for bighorn sheep/deer, clarify the construction of exclosures in bighorn sheep WHMAs (*HMP: technical oversight. waters: public comments, NEPA analysis. exclosures: technical oversight*)
  - Section 2.4, Wild Horses and Burros: do not combine Herd Areas (*technical oversight, by law cannot combine Herd Areas and change names*); made technical change to Chocolate-Mule Mountains herd area for all alternatives (*technical oversight*)
  - Section 2.5, Motorized Vehicle Access/Routes of Travel/Recreation: inventory and designation changes (refer to text, tables, and maps) for a number of routes; change in application of cultural program responsibilities (*public comments, internal review*)
3. The Preferred Alternative with the changes identified above is now called the “Proposed Plan” in this Final EIS, which is the shortened version of “Proposed Northern and Eastern Colorado Desert Coordinated Management Plan.”
4. A new introductory section is added: Alternatives considered but not carried forward.
5. In the Proposed Plan one new Wildlife Habitat Management Area (WHMA) is added to the sixteen contained in the DEIS Preferred Alternative. This addition is made at the suggestion of the USFWS so that, when added to other existing and previously proposed conservation elements, it better provides connectivity for the desert tortoise between the Chemehuevi and Chuckwalla DWMA (a stated goal in the Desert Tortoise Recovery Plan). The suggestion

came late in the development of the FEIS as part of the consultation on NECO between BLM and USFWS and is not reflected in most tables in chapters and appendices throughout the FEIS except here and in the following two additional locations: 1) Section 2.3.3.2, first action under Objective a, and 2) on Map 2-21 Appendix A. The area of this new WHMA is 18,538 acres and is incorporated into the acreage total for the 17 WHMAs addressed in the first action under Section 2.3.3.2. On Map 2-21 Appendix A, the new area is distinguished from other WHMAs to better note the change. This new area is not a DWMA, but a WHMA with management emphasis for geographic connectivity for the desert tortoise and does not change other emphases or proposals or multiple uses - e.g., routes of travel designations, I-10 utility corridor, and multiple use class.

## **Chapter 3**

# **Affected Environment**

### **Changes to this chapter in developing the FEIS**

1. Added Section 3.4.1 on biological resources management tools.
2. Updated listing status of species and made editorial corrections.
3. Added information to Table 3-9 relating Characteristics of Herd Management Areas.
4. Added Table 3-10 to show Age Composition of Burros in Herd Management Areas.
5. Added Section 3.7.8 on burro population viability and Section 3.7.9 that relates herd management areas throughout the California Desert Conservation Area.
6. Added Section 3.8.7 on California Back Country Discovery Trails and Section 3.8.8 on Rockhounding.



# **Chapter 4**

## **Environmental Consequences**

### **Changes to this chapter in developing the FEIS**

1. This chapter has extensive changes to improve the discussion of environmental consequences as a result of public comments and internal review. Reasons, facts and analysis are related throughout this chapter and numerous literature citations have been added. The context of impacts is presented.
2. A summary table that compares and contrasts the impacts by alternatives is near the end of the chapter, just prior to a new section that relates cumulative impacts.





# **Chapter 5**

## **Monitoring**

### **Changes to this chapter in developing the FEIS**

1. The chapter has been revised to relate the purpose and scope of plan monitoring, the frequency of monitoring and collaboration in monitoring.
2. Plan monitoring elements have been combined into Table 5-1.



# **Chapter 6 Implementation**

**No changes to this chapter in developing the FEIS**



# **Chapter 7**

## **Consultation and Coordination**

### **Changes to this chapter in developing the FEIS**

1. Added section numbering and added Sections 7.1.5 and 7.1.7 for consultation with State Historic Preservation Office and Other Consultations.
2. Updated current members of the California Desert Advisory Council.
3. Included new information since publishing the Draft EIS in Section 7.1.3 regarding DEIS and FEIS: Consultations, Distribution, Public Review, Protest of Decisions and in Section 7.3 Public Comments and Responses.



# References

## Changes to references in developing the FEIS

1. Many new references were added due to changes in Chapter 4 and throughout the text.





# **Glossary**



## **Acronyms and Abbreviations**



# **Appendix A**

## **Maps**

### **Changes to this appendix in developing the FEIS**

1. Added Map 4-1 for wild horse and burro management areas in the CDCA and Map 4-2 to show popular rock hounding areas with routes of travel designations.
2. Edited several maps to improve clarity, make minor changes consistent with public comments, internal review and narratives in Chapters 2 and 4.
3. Added geographical index overlay for 7.5 minute quadrangle maps to Map 2-32.



**Appendix B**  
**Standards and Guidelines**





# **Appendix C**

## **Livestock Grazing Prescriptions**

### **Changes to this appendix in developing the FEIS**

1. This appendix has been changed in the following topics related to cattle grazing:
  - utilization,
  - temporary, non-renewable perennial forage authorization,
  - ephemeral forage authorization outside of DWMA's,
  - grazing curtailment during severe or prolonged drought, and
  - construction of range improvements.



**Appendix D**  
**Desert Tortoise Mitigation Measures**



**Appendix E**  
**Desert Restoration**



**Appendix F**  
**Public Education Program from the**  
**California Statewide Desert Tortoise**  
**Management Policy**





**Appendix G**  
**Limitation on Cumulative New Surface Disturbance**



**Appendix H**  
**Species and Habitats Modeling and**  
**Development of Management Areas**



# **Appendix I**

## **Science Panel Reports**

### **Changes to this appendix in developing the FEIS**

1. A second Science Panel Review Report from November 2001 has been added.



**Appendix J**  
**Guidelines for Domestic Sheep Management in**  
**Bighorn Sheep Habitats**





**Appendix K**  
**Johnson Valley to Parker**  
**Motorcycle Race EIS (1980)**



**Appendix L**  
**Route Inventory Process**



# **Appendix M**

## **Artificial Water Sources for Bighorn Sheep, Deer, and other Wildlife**

### **Changes to this appendix in developing the FEIS**

1. Edited Table M-1 to reflect clarification in number of new waters in wilderness areas.



# **Appendix N**

## **Wildlife History and Wildlife and Plant Distribution Tables**

### **Changes to this appendix in developing the FEIS**

1. Updated listing status of species and made editorial corrections.





**Appendix O**  
**Perspectives on Proposals for**  
**and Changes to Management Areas**



**Appendix P**  
**Boundaries of DWMA's and WHMA's and**  
**Boundaries of Washes Open Zones**



# **Appendix Q**

## **Photographs**



# **Appendix R**

## **Routes of Travel Designations**

**New appendix**





# **Appendix S**

## **Response to Comments**

**New appendix**









# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

California Desert District Office  
6221 Box Springs Boulevard  
Riverside, California 92507-0714

6780 NECP  
(CA-610)

June 30, 2002

Dear Reviewer:

Enclosed for your review is the Northern and Eastern Colorado Desert Proposed Plan (NECO) and Final Environmental Impact Statement (FEIS). NECO will update the Bureau of Land Management (BLM) 1980 California Desert Conservation Area (CDCA) Plan for the southeastern part of the CDCA. BLM prepared this document in partial fulfillment of its responsibilities under the Federal Land Policy and Management Act of 1976, the National Environmental Policy Act of 1969, and the Federal Endangered Species (ESA) Act of 1973. NECO is designed to stand alone from the Draft Plan/EIS (DEIS) issued in February, 2001. However, to gain the full management picture as NECO applies to the CDCA, the reader is referred to the CDCA Plan. NECO will amend some aspects of the CDCA Plan. Others elements - e.g., Cultural, Utilities, Minerals, and Recreation - remain largely unchanged. NECO is a two-volume set. The second volume contains only appendices.

The public devoted substantial effort to providing in-depth review and input on the DEIS. BLM received over 1600 comment submissions (about 1400 of which were various form letters), which express over 450 separate comments. BLM has assessed these comments and utilized them in making substantive changes in the document, strengthening the EIS, and ensuring consistency with other concurrently developing plans (also amendments to the CDCA Plan). BLM appreciates those of you who took the time to provide comments. Your efforts have resulted in a stronger and clearer plan.

The planning area covers 5.5 million acres. NECO is one six CDCA Plan amendments in progress. Public scoping, held at the beginning of the planning process, identified several issues. The focus of these issues includes 1) recovery of the desert tortoise, a listed (threatened) species under both federal and state endangered species acts, 2) conservation of other species and habitats, and 3) public lands access and resource uses. The scope of decisions applies to all federal lands - BLM managed, the eastern half of Joshua Tree National Park (JTNP), and all of the Chocolate Mountains Aerial Gunnery Range (CMAGR), administered by the Navy Department - to provide unified, landscape-based ecosystem management for biological resources. BLM is the lead agency in preparing NECO.

The DEIS described and analyzed a Preferred Alternative and three additional alternatives. As a result of public comments, internal review, and discussion with other agencies, the Proposed

Plan/FEIS was developed. The Preferred Alternative in the DEIS was revised and renamed the Proposed Plan in the FEIS.

NEPA allows you an opportunity for further administrative review of the FEIS through a plan protest to the BLM Director if you believe the approval of a proposed decision would be in error under 43 CFR 1610.5-2. Careful adherence to the above CFR guideline will assist you in preparing a protest that will assure the greatest consideration of your point of view. If you wish to protest the Proposed Plan, you must do so in writing within 30 days from the date that the Notice of Availability of the document appeared in the Federal Register as filed by the Environmental Protection Agency. The Cover Sheet located at the beginning of NECO contains the complete procedural, timeframe, and mailing instruction details for filing a protest.

Plan approval will be documented in a Record of Decision which will be made available to the public and mailed to all interested parties. Land use plan implementation usually involves on-the-ground management actions and permitted uses which require further analysis and decision making, including public involvement, and allows for appeal of decisions under applicable regulations.

In recent months BLM has implemented a number of interim land use decisions as a result of a lawsuit filed against BLM by a consortium of environmental advocacy groups. According to court stipulations nearly all of these interim decisions, to the extent that they apply within the Planning Area, will end when the Record of Decision is signed.

The planning process was a collaborative effort by Local, State, and Federal agencies and several citizens groups representing a variety of interests. Cooperation stimulated each step in the planning process and was the basis of creative solutions to very difficult issues. The cooperators are listed in Chapter 7. As previously noted land management integrates federal lands for the common theme of species and habitats. This creates a better regional basis for future local decisions.

Thank you for your interest in the management of your public lands.

Sincerely,

Linda Hansen  
Acting District Manager

Enclosure (two volume set)

# **Proposed Northern & Eastern Colorado Desert Coordinated Management Plan**

an amendment to the California Desert Conservation Area Plan 1980  
and Sikes Act Plan with the California Department of Fish and Game

and

## **Final Environmental Impact Statement**

Prepared by  
Department of the Interior  
Bureau of Land Management  
California Desert District Office  
and  
California Department of Fish and Game  
Inland, Desert and Eastern Sierra Region

July 2002

---

Linda Hansen  
Acting District Manager, California Desert

---

Mike Pool  
State Director, California



# Cover Sheet

## **Proposed Northern and Eastern Colorado Desert Coordinated Management Plan and Final Environmental Impact Statement**

Lead Agency: U.S. Department of the Interior  
Bureau of Land Management  
California Desert District

Project Location: (portions of) Riverside, Imperial and San Bernardino  
counties, California

For Further Information Contact: Dick Crowe, Project Lead  
Bureau of Land Management  
California Desert  
6221 Box Springs Blvd.  
Riverside, CA 92506

Abstract: The Proposed Plan amends the Bureau of Land Management (BLM) 1980 California Desert Conservation Area Plan for the area called the Northern and Eastern Colorado Desert. The Proposed Plan and Final Environmental Impact Statement provides 1) a comprehensive framework for ecosystem management, including recovery of three populations of the desert tortoise; 2) a single landscape basis for ecosystem management for three Federal land administering agencies within the planning area - BLM, Joshua Tree National Park (eastern half, only), and all of the Chocolate Mountains Aerial Gunnery Range managed by the Navy Department; and 3) integrates ecosystem management into a broader context of agencies' mandates, including BLM's multiple use management mission. The planning area is 5.5 million acres, covering portions of BLM field offices in Needles, El Centro, and Palm Springs. This plan amendment is also cooperatively joined by the California Department of Fish and Game through the statewide Sikes Act memorandum of agreement.

This document was produced through a coordinated process involving numerous Local, State, and Federal agencies and special interest groups.

Protest procedures, time frame, mailing: See next page

**Filing Protests  
Procedure, Timeframe, and Mailing**

**The elements of a properly prepared protest are described in 43 Code of Federal Regulations 1610.5-2 Protest Procedures:**

(a) Any person who participates in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.

(1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the FEDERAL REGISTER. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.

(2) The protest shall contain:

(i) The name, mailing address, telephone number and interest of the person filing the protest;

(ii) A statement of the issue or issues being protested;

(iii) A statement of the part or parts of the plan or amendment being protested;

(iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and

(v) A concise statement explaining why the State Director's decision is believe to be wrong.

(3) The Director shall promptly render a decision on the protest. The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested.

(b) The decision of the Director shall be the final decision for the Department of the Interior.

**Mailing address for filing a protest:**

Regular mail

U.S. Department of the Interior  
Director, Bureau of Land Management (210)  
Attn: Brenda Williams  
P.O. Box 66538  
Washington, D.C. 20240

Overnight mail

U.S. Department of the Interior  
Director, Bureau of Land Management (210)  
Attn: Brenda Williams  
Telephone (202) 452-5045  
1620 "L" Street, NW, Rm 1075  
Washington D.C. 20036



## Table of Contents

### Executive Summary

Chapter 1–Introduction	1-1
1.1 Purpose, Need, and Scope	1-3
1.2 Planning Area	1-3
1.3 Planning Process Description	1-4
1.4 Planning Schedule	1-6
1.5 Planning Issues	1-6
1.6 Planning Criteria	1-8
1.7 Consistency with Local, State, Tribal, and other Federal Plans	1-11
1.8 Current Planning in the Region	1-12
1.9 Using This Document	1-14
Chapter 2–Alternatives	2-1
Introduction	2-1
Vision and Concept	2-1
Alternatives	2-2
Alternatives Considered But Eliminated from Detailed Study	2-3
Presentation of Alternatives	2-4
Amendments to BLM’s California Desert Conservation Area Plan 1980	2-5
2.1 Issue: Standards and Guidelines	2-7
2.1.1 Goals and Objectives	2-9
2.1.2 No Action Alternative	2-9
2.1.3 Proposed Plan	2-11
2.1.4 Small DWMA--A Alternative	2-15
2.1.5 Small DWMA--B Alternative	2-16
2.2 Issue: Recovery of the Desert Tortoise	2-17
2.2.1 Goals and Objectives	2-17
2.2.2 No Action Alternative	2-21
2.2.3 Proposed Plan	2-25
2.2.4 Small DWMA--A Alternative	2-33
2.2.5 Small DWMA--B Alternative	2-37
2.3 Issue: Management of Special Status Animals and Plants and Natural Communities	2-42
2.3.1 Desert Bighorn Sheep Conservation--Goals and Objectives	2-42
2.3.1.1 No Action Alternative	2-45
2.3.1.2 Proposed Plan	2-45
2.3.1.3 Small DWMA--A Alternative	2-48
2.3.1.4 Small DWMA--B Alternative	2-49
2.3.2 Desert Mule Deer Management--Goals and Objectives	2-50
2.3.2.1 No Action Alternative	2-51
2.3.2.2 Proposed Plan	2-51
2.3.2.3 Small DWMA--A Alternative	2-51

2.3.2.4	Small DWMA--B Alternative	2-52
2.3.3	Other Special Status Animal and Plant Species, Natural Communities, and Ecological Processes--Goals and Objectives	2-52
2.3.3.1	No Action Alternative	2-54
2.3.3.2	Proposed Plan	2-55
2.3.3.3	Small DWMA--A Alternative	2-59
2.3.3.4	Small DWMA--B Alternative	2-59
2.4	Issue: Wild Horses and Burros	2-62
2.4.1	Goals and Objectives	2-61
2.4.2	No Action Alternative	2-63
2.4.3	Proposed Plan	2-63
2.4.4	Small DWMA--A Alternative	2-64
2.4.5	Small DWMA--B Alternative	2-64
2.5	Issue: Motorized-Vehicle Access, Routes of Travel Designations, and Recreation	2-66
2.5.1	Goals and Objectives	2-66
2.5.2	Decisions and Policy Common to all Alternatives	2-67
2.5.3	No Action Alternative	2-72
2.5.4	Proposed Plan	2-77
2.5.5	Small DWMA--A Alternative	2-82
2.5.6	Small DWMA--B Alternative	2-86
2.6	Issue: Land Ownership Pattern	2-90
2.6.1	Goals and Objectives	2-90
2.6.2	No Action Alternative	2-92
2.6.3	Proposed Plan	2-93
2.6.4	Small DWMA--A Alternative	2-94
2.6.5	Small DWMA--B Alternative	2-95
2.7	Access to Resources for Economic and Social Needs	2-97
2.8	Incorporation of Changes to the California Desert Conservation Area (CDCA) Plan Created by the California Desert Protection Act (CDPA)	2-98
2.8.1	No Action Alternative	2-98
2.8.2	Proposed Plan	2-98
2.8.3	Small DWMA--A Alternative	2-99
2.8.4	Small DWMA--B Alternative	2-99
2.9	Comparison of Alternatives	2-100
Chapter 3--Affected Environment		3-1
3.1	Air Quality	3-1
3.2	Water Quality	3-3
3.3	Soil Quality	3-4
3.4	Biological Resources	3-4
3.4.1	Biological Resources Management Tools	3-4
3.4.2	Wildlife	3-12
3.4.3	Special Status Plants	3-23
3.4.4	Natural Communities	3-27
3.5	Wilderness Management	3-32

	3.5.1	California Desert Protection Act (Public Law 103-433)	3-33
	3.5.2	Wildlife Water Developments in Wilderness	3-35
	3.5.3	Reintroduction of Native Species in Wilderness	3-36
	3.5.4	Research in Wilderness	3-36
	3.5.5	MOU and Policy on Wildlife Management Activities in BLM Administered Wilderness	3-37
3.6		Livestock Grazing	3-37
	3.6.1	Background	3-37
	3.6.2	Rangeland Improvements	3-38
	3.6.3	Grazing Activities	3-38
	3.6.4	Grazing Administration	3-42
3.7		Wild Horse and Burro Management	3-43
	3.7.1	Herd Areas	3-44
	3.7.2	Herd Management Areas (general)	3-45
	3.7.3	Chemehuevi and Havasu HMAs	3-46
	3.7.4	Chocolate/Mule Mountains, Picacho and Cibola/Trigo HMAs	3-47
	3.7.5	Population Controls	3-48
	3.7.6	Management Complexity	3-48
	3.7.7	Species Description--	3-49
	3.7.8	Population Viability Analysis	3-50
	3.7.9	California Desert District Burro Herd Areas and Herd Management Areas	3-50
3.8		Recreation Management	3-52
	3.8.1	Multiple-Use Classes	3-55
	3.8.2	Access	3-56
	3.8.3	Washes	3-56
	3.8.4	Organized Competitive Vehicle Events	3-57
	3.8.5	Special Recreation Permits	3-59
	3.8.6	Off-Highway Vehicle Recreation Areas	3-60
	3.8.7	California Back Country Discovery Trail	3-62
	3.8.8	Rockhounding	3-63
	3.8.9	Long-Term Visitor Areas	3-64
	3.8.10	Joshua Tree National Park	3-64
	3.8.11	Chocolate Mountain Aerial Gunnery Range	3-64
	3.8.12	Summary	3-65
3.9		Off-Highway Vehicle Use / Motorized Vehicle Access	3-66
	3.9.1	Issuance of Executive Orders and Development of Regulations	3-66
	3.9.2	Development of the CDCA Management Plan	3-67
	3.9.3	1982 Amendment to the CDCA Management Plan	3-68
	3.9.4	MUC Guidelines for Motorized-vehicle Access	3-68
	3.9.5	Washes, Sand Dunes, and Dry Lakes	3-70
	3.9.6	Route Designation Definitions	3-70
	3.9.7	Route Designation and CDCA Management Plan Implementation	3-71
3.10		Mineral Management	3-73
3.11		Cultural Resources	3-74
	3.11.1	Background	3-74

3.11.2	Historic and Archaeological Sites	3-76
3.11.3	Paleontological Resources	3-78
3.11.4	Traditional Cultural Properties	3-78
3.12	Land Use	3-79
3.12.1	Utilities	3-79
3.12.2	Withdrawals	3-79
3.12.3	Colorado River Aqueduct	3-80
3.12.4	Other Land Uses	3-80
Chapter 4—Environmental Consequences		4-1
Introduction		4-1
Assumptions For Analysis		4-1
Chapter Organization		4-1
Reasonably Foreseeable Future		4-2
4.1	No Action Alternative	4-5
4.1.2	Water Quality	4-6
4.1.3	Soil Quality	4-8
4.1.4	Biological Resources	4-12
4.1.4.1	Wildlife Management	4-12
4.1.4.2	Vegetation Management	4-31
4.1.5	Wilderness Management	4-42
4.1.6	Livestock Grazing Management	4-46
4.1.7	Wild Horses and Burro Management	4-49
4.1.8/9	Recreation Management and Motorized-Vehicle Access	4-51
4.1.10	Mineral Management	4-55
4.1.11	Cultural Management	4-56
4.1.12	Lands and Land Use Authorizations	4-63
4.1.13	Socio-Economic Values	4-64
4.2	Proposed Plan	4-67
4.2.1	Air Quality	4-67
4.2.2	Water Quality	4-69
4.2.3	Soil Quality	4-70
4.2.4	Biological Resources	4-73
4.2.4.1	Wildlife Management	4-73
4.2.4.2	Vegetation Management	4-80
4.2.5	Wilderness Management	4-85
4.2.6	Livestock Grazing Management	4-90
4.2.7	Wild Horses and Burro Management	4-91
4.2.8/9	Recreation Management	4-95
4.2.10	Mineral Management	4-98
4.2.11	Cultural Management	4-99
4.2.12	Lands and Land Use Authorization	4-103
4.2.13	Socioeconomic Values	4-104
4.3	Small DWMA--A Alternative	4-108
4.3.1	Air Quality	4-108

4.3.2	Water Quality	4-108
4.3.3	Soil Quality	4-109
4.3.4	Biological Resources	4-110
4.3.4.1	Wildlife Management	4-110
4.3.4.2	Vegetation Management	4-114
4.3.5	Wilderness Management	4-116
4.3.6	Livestock Grazing Management	4-118
4.3.7	Wild Horses and Burro Management	4-119
4.3.8/9	Recreation Management	4-121
4.3.10	Mineral Management	4-124
4.3.11	Cultural Management	4-125
4.3.12	Lands and Land Use Authorization	4-127
4.3.13	Socioeconomic Values	4-128
4.4	Small DWMA--B Alternative	4-131
4.4.1	Air Quality	4-131
4.4.2	Water Quality	4-132
4.4.3	Soil Quality	4-132
4.4.4	Biological Resources	4-133
4.4.4.1	Wildlife Management	4-134
4.4.4.2	Vegetation Management	4-136
4.4.5	Wilderness Management	4-137
4.4.6	Livestock Grazing Management	4-139
4.4.7	Wild Horses and Burro Management	4-139
4.4.8/9	Recreation Management and Motorized-Vehicle Access	4-142
4.4.10	Mineral Management	4-144
4.4.11	Cultural Management	4-145
4.4.12	Lands and Land Use Authorization	4-146
4.4.13	Socioeconomic Values	4-147
4.5	Summary of Impacts by Alternative	4-150
4.6	Cumulative Effects	4-170
4.6.1	Prior to 1976	4-170
4.6.2	The 1976 Federal Land Policy and Management Act and the 1980 California Desert Conservation Area Plan	4-170
4.6.3	State and Federal Endangered Species Acts	4-171
4.6.4	The California Desert Protection Act	4-172
4.6.5	Benefits to Species and Habitats	4-172
4.6.6	New Land Use Plans/CDCA Plan Amendments--2002	4-172
	Conclusion	4-176
	Chapter 5--Plan Monitoring	5-1
5.1	Purpose and Scope	5-1
5.2	One-time, Continuous, and Sequential Monitoring	5-2
5.3	Collaboration in Monitoring	5-2
5.4	Primary Monitoring Subjects	5-2
	Chapter 6--Implementation	6-1



Chapter 7–Consultation and Coordination ..... 7-1

- 7.1 Public and Agency Involvement in the Planning Process ..... 7-1
  - 7.1.1 Issue Identification/Public Scoping ..... 7-1
  - 7.1.2 Plan Development ..... 7-2
  - 7.1.3 DEIS and FEIS: Distribution, Public Review, Protest of Decisions ..... 7-2
  - 7.1.4 Endangered Species Act Consultation ..... 7-3
  - 7.1.5 Consultation with the State Historic Preservation Officer ..... 7-4
  - 7.1.6 Consultation with Native Americans ..... 7-4
  - 7.1.7 Other Consultations ..... 7-4
- 7.2 Distribution of the Draft Plan and Draft EIS ..... 7-4
- 7.3 Public Comments and Responses ..... 7-10
- 7.4 List of Preparers ..... 7-10

References

Glossary

Acronyms and Abbreviations

Appendices in Volume II

**List of Tables**

Table 1-1. Land Ownership in the Planning Area . . . . . 1-4

Table 1-2. Summary of Significant Management Issues and Action . . . . . 1-7

Table 2-1. Summary of Issues and Proposed Plan Amendments to the CDCA Plan . . . . . 2-5

Table 2-2. Proposed Plan Grazing Guidelines for Range Types . . . . . 2-15

Table 2-3. Proposed Range Improvements for the No Action Alternative . . . . . 2-23

Table 2-4. Distribution of Land Ownership in the Chemehuevi DWMA . . . . . 2-26

Table 2-5. Distribution of Land Ownership in the Chuckwalla DWMA. . . . . 2-26

Table 2-6. Proposed Range Improvements for the Proposed Plan . . . . . 2-29

Table 2-7. Length and Estimated Costs of Proposed Fencing . . . . . 2-32

Table 2-8. Proposed Range Improvements for the Small DWMA--A Alternative . . . . . 2-35

Table 2-9. Proposed Range Improvements for the Small DWMA--B Alternative . . . . . 2-39

Table 2-10. Appropriate Herd Size . . . . . 2-63

Table 2-11. Biological Parameters to Minimize Harassment of Wildlife and Disruption of Habitats  
. . . . . 2-68

Table 2-12. Comparison of Routes Open and Closed by Alternatives . . . . . 2-71

Table 2-13. Size of Washes Closed Zones by Alternative . . . . . 2-72

Table 2-14. Summary of Routes of Travel Designations for No Action Alternative . . . . . 2-74

Table 2-15. Summary of Routes of Travel Designations for Proposed Plan . . . . . 2-79

Table 2-16. Summary of Routes of Travel Designations for Small DWMA--A Alternative . . . . . 2-83

Table 2-17. Summary of Routes of Travel Designations for Small DWMA--B Alternative . . . . . 2-87

Table 2-18. Private Lands in Management Areas for Proposed Plan . . . . . 2-93

Table 2-19. Private Lands in Proposed Management Areas Under Small DWMA--A Alternative 2-94

Table 2-20. Private Lands in Proposed Management Areas Under Small DWMA--B Alternative 2-95

Table 2-21. Comparison of Alternatives . . . . . 2-101

Table 3-1. Acres and percentages of desert tortoise critical habitat in various federal and state  
jurisdictions and private ownership . . . . . 3-8

Table 3-2. List of desert tortoise permanent study plots in the planning area and the years surveyed  
using standard protocols. . . . . 3-10

Table 3-3. Existing bighorn sheep habitat management plans in the NECO Planning Area . . . . . 3-11

Table 3-4. Acres (and percent of area) for three categories of bighorn sheep use in livestock grazing  
allotments in the NECO Planning Area . . . . . 3-12

Table 3-5. Special Status Plant Species in the NECO Planning Area . . . . . 3-23

Table 3-6. Acres of BLM Wilderness in the NECO Planning Area . . . . . 3-34

Table 3-7. Acreage (and percent) of Grazing Leases in Tortoise Critical Habitat and BLM Tortoise  
Categories . . . . . 3-39

Table 3-8. Past Grazing Use . . . . . 3-40

Table 3-9. Characteristics of Herd Management Areas . . . . . 3-45

Table 3-10. Age Composition of Burros in Herd Management Areas . . . . . 3-46

Table 3-11. Characteristics of Herd Areas and Herd Management Areas in California Desert  
Conservation Area . . . . . 3-51

Table 3-12.	Areas of critical environmental concern designated for cultural resources values . . .	3-76
Table 3-13.	Distribution of historic and archaeological sites in the NECO Planning Area . . . . .	3-77
Table 3-14.	Distribution of cultural resource survey activity in the NECO Planning Area . . . . .	3-77
Table 4-1.	Federal Lands in Critical Habitat that are Withdrawn from Multiple-use . . . . .	4-13
Table 4-2.	Bighorn Sheep Use Areas in Livestock Grazing Allotments in the NECO Planning Area . . . . .	4-20
Table 4-3.	Burro Herd Areas, Herd Management Areas, and Burro Concentration Areas in Desert Tortoise Critical Habitat . . . . .	4-24
Table 4-4.	Bighorn Sheep Use Areas in Burro Herd Management Areas in the NECO Planning Area . . . . .	4-24
Table 4-5.	Natural Communities within JTNP, CMAGR, and BLM Wilderness, in acres and percent of total . . . . .	4-34
Table 4-6.	Natural Communities within each BLM Multiple Use Class . . . . .	4-35
Table 4-7.	Natural Communities within BLM grazing allotments . . . . .	4-35
Table 4-8.	Average Road Mileage (Not Including Navigable Washes) per Square Mile in Each Natural Community . . . . .	4-39
Table 4-9.	Current Herd Area, Herd Management Area, and Appropriate Management Level in the NECO Planning Area . . . . .	4-51
Table 4-10.	Identified Cultural Resources within Grazing Allotments by Alternative . . . . .	4-58
Table 4-11.	Identified Cultural Resources in HMA for Each Alternative. . . . .	4-59
Table 4-12.	Cultural Resources in the Area of Potential Effect, by Alternative <sup>a</sup> . . . . .	4-61
Table 4-13.	Area of DWMAS and Critical Habitat for Desert Tortoise . . . . .	4-74
Table 4-14.	Area and percent of area for Bighorn Sheep Use in DWMA and Bighorn Sheep WHMA areas for the Proposed Plan . . . . .	4-76
Table 4-15.	Area and Percent of Area for Three Categories of Bighorn Sheep Use Within Burro Herd Management Areas . . . . .	4-79
Table 4-16.	Areas and Percent of Total Area of Each Natural Community Within Large DWMAS . . . . .	4-81
Table 4-17.	Areas and percent of total of each natural community within BLM cattle grazing allotments: Lazy Daisy Cattle . . . . .	4-82
Table 4-18.	Comparison of HMA Size and AML for the No Action and Proposed Plan Alternatives . . . . .	4-94
Table 4-19.	Privately Owned Lands with five or less owners per section and Public Lands in Conservation Area, Proposed Plan . . . . .	4-107
Table 4-20.	Areas for three categories of Bighorn Sheep use in Cattle Grazing Allotments in the NECO Planning Area . . . . .	4-111
Table 4-21.	Areas of each Natural Community within Small DWMAS. . . . .	4-114
Table 4-22.	Areas of each Natural Community within BLM Grazing Allotments . . . . .	4-115
Table 4-23.	Comparison of Herd Management Areas and Appropriate Management Level for No Action and Small DWMA--A Alternatives . . . . .	4-119
Table 4-24.	Privately owned lands with five or less owners per section and public lands in conservation area, Small DWMA--A Alternative . . . . .	4-130
Table 4-25.	Comparison of Herd Management Areas (acres) and Appropriate Management Level for No Action and Small DWMA--B Alternative . . . . .	4-140

Table 4-26.	Privately Owned Lands with five or less owners per section and Public Lands in Conservation Area, Small DWMA--B Alternative .....	4-148
Table 4-27.	Summary of Impacts by Alternative .....	4-150
Table 5-1.	NECO Plan Monitoring .....	5-3

### **List of Figures**

Figure 1-1. Northern and Eastern Colorado Desert Planning Process ..... 1-5  
Figure 3-1. State Area Designation, PM10 ..... 3-2  
Figure 3-2. State Area Designation, Ozone ..... 3-2

## Executive Summary

### Introduction

The 25 million acre California Desert Conservation Area (CDCA) was designated by Congress in 1976 through the Federal Land Policy and Management Act (FLPMA). Many changes have occurred throughout the CDCA since FLPMA including: (1) Congressional designations for 69 wilderness, (2) Congressional designations for national parks, and (3) listings of about 30 species under the federal Endangered Species Act (ESA) as well as management concern for an additional 120 special status species. These actions significantly affect management and use of federal lands. When species are listed, the ESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on the adequacy of current land use plans to provide for their recovery. The affected federal agencies are the Bureau of Land Management (BLM), National Park Service (NPS), and various Department of Defense installations. Local jurisdictions are also affected where species listings also cover private lands. Ten land use plans and/or plan amendments are in progress, or have been recently completed. BLM's CDCA Plan, completed in 1980, is being amended through six concurrent plan amendments, one of them being this plan, the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO). The NECO planning area is located in southeastern CDCA, primarily Sonoran Desert. When all plans are completed, they will provide a landscape approach to managing desert ecosystems.

A cooperating group of local, state, and federal agencies and non-agency interests (totaling 32 entities) played a strong role in developing this plan. The plan will be as a Sikes Act Plan between BLM and the California Department of Fish and Game. Plan decisions apply only to federal lands. The Draft Plan/EIS was released in February 2001, and the public comment period closed in November 2001. The Proposed Plan/FEIS includes a summary of public comments and our responses. The Proposed Plan/FEIS will undergo a 30-day protest period, and BLM intends to sign the Record of Decision in September 2002.

### Purpose and Need

The CDCA Plan reflects both a general FLPMA mandate for multiple-use management and a specific mandate to develop the CDCA Plan, resolving issues of resource demands, use conflicts, and environmental quality. BLM's multiple use mandate addresses a very broad spectrum of resources and uses. The CDCA purpose and need still applies. The purpose and need for this plan amendment are in part reflected in the following eight public and internal scoping issues:

1. Adopt standards and guidelines for public land health;
2. Recover two threatened species: the desert tortoise and Coachella Valley milkvetch;
3. Conserve approximately 60 special status plants and animals and natural communities;
4. Resolve issues of managing wild horses and burros along the Colorado River;
5. Designate routes of travel;
6. Resolve issues of the land ownership pattern;
7. Resolve issues of access to resources and regulatory burden;
8. Incorporate designations contained in the 1994 California Desert Protection Act (CDPA).

To most effectively address these issues, great emphasis was placed on collaboration with other agencies and interests and the general goal of integration of land management plans among the cooperating agencies. Specific goals included:

1. Developing a resource management plan for the Chocolate Mountains Aerial Gunnery Range (CMAGR) as required by Title VIII of the CDPA;
2. Integrating conservation of species and habitats of the three federal land managing agencies;
3. Cooperating in conservation of species and habitats with the California Department of Fish and Game through a Sikes Act agreement.

Since the CDCA Plan is being amended through six plan amendments, decisions that relate to broad programs must be consistent across all six plans and with the Purpose and Need and other aspects of the CDCA Plan.

### **The Alternatives**

This Proposed Plan and Final Environmental Impact Statement (FEIS) describes and assesses the Proposed Plan and compares and contrasts it to three other alternatives. (For comparative analysis of alternatives, see Table 2-21 at the end of Chapter 2). Proposed actions that would fulfill the Purpose and Need for this plan apply to the three federal land management agencies (although actual integration into NPS and U.S. Marine Corps [USMC] land use plans would be accomplished through respective land use plans).

### **No Action Alternative**

This alternative would continue current management. It would not provide reserve management for the desert tortoise and its habitat (as outlined in the Desert Tortoise Recovery Plan, issued by the USFWS) nor apply a strategic approach to managing ecosystems to reduce the possibility of future species listings under the ESA. It would adopt (1) national fallback standards and guidelines for rangeland health, and (2) provide for the recovery of the two threatened species. For the desert tortoise, this involves application of current BLM California Statewide Policy for the desert tortoise. Consideration of standard mitigation and compensation measures for use authorizations would be applied on a case-by-case basis, including consultations with the USFWS. Measures and areas of consideration for special status species and natural communities would be less defined and focused, except through current special designations. There would be no change in management of livestock grazing and wild burro herds, resulting in no resolution of burro management issues along the Colorado River. Habitat improvements and acquisitions for the desert tortoise, bighorn sheep, and other special status species would occur on a case-by-case basis. Land acquisitions would be strategic for the desert tortoise and wilderness areas, but not for other elements of ecosystems. Routes of travel would be designated, resulting in the closure of a small number of routes. Ford Dry Lake and Rice Dunes OHV areas would not be closed. Management of federal lands administered by BLM, Joshua Tree National Park (JTNP), and the U.S. Marine Corps Air Station, Yuma (USMC) for CMAGR would be much less integrated for common species and habitats.

### **Proposed Plan**

The Proposed Plan is similar to the Preferred Alternative in the DEIS with some modification as a result of public comments and internal review. It provides reserve management for the desert tortoise, integrated

ecosystem management for special status species and natural communities for all federal lands, and regional standards and guidelines for public land health for BLM lands. At the heart of conservation of species and habitats is a system of large (50 percent larger than recommended in the desert tortoise recovery plan) desert wildlife management areas (DWMAs) for the desert tortoise and wildlife habitat management areas (WHMAs) for other special status species and natural communities. Conservation management in DWMAs, WHMAs, JTNP, CMAGR, and wilderness areas provide habitat connectivity and cover 80 percent of the area of known, or predicted, occurrence of special status species and natural communities. DWMAs and WHMAs would replace all current special designations for species and habitats. As much as possible, DWMAs and WHMAs do not encumber high value use areas. DWMAs generally coincide with, but are smaller than, current critical habitat. They would be managed as areas of critical environmental concern (ACEC) and feature a 1 percent surface disturbance limit. The focus for WHMAs is on mitigation, habitat improvements, and federal ownership. Both DWMAs and WHMAs emphasize managing uses, not restrictions. Specific DWMA prescriptions include standardization of BLM management classes, tortoise categories, and critical habitat; 5:1 ratio for surface disturbance compensation; tortoise-proof fencing along freeways and a portion of State Highway 95; reallocation of some ephemeral forage from cattle to desert tortoise; parking and camping restriction to 100 feet from the center of roads; and removal of documented predatory ravens. The 1 percent disturbance limit is incentive for projects to be located outside DWMAs. In WHMAs generic habitat improvements are suggested for a number of species/habitats, including several dozen artificial waters proposed for bighorn sheep and deer at specific locations south of I-10. Two OHV open areas would be closed: Ford Dry Lake and Rice Valley Dunes. Compensation of 3:1 would be required for surface disturbance in four natural communities. For two areas where burros are currently managed by BLM offices in both California and Arizona, administration would be focused in one office, and herd management areas and appropriate management levels would be reduced by 30 percent to 40 percent. Routes of travel designations are proposed for all routes, including navigable washes, based upon specific criteria. About 5 percent of the routes by total length would be closed. About 10 percent of navigable washes would be closed. The opportunity for competitive motorized vehicle events would be reduced with no allowance in DWMAs. The pattern of land ownership would be adjusted through exchange to block up federal ownership in conservation management areas and disposal of federal lands outside such areas and in areas that promote private initiative.

### **Small DWMA--A Alternative**

This alternative comes closest to what might be called a desert tortoise alternative. It is essentially the same as the Proposed Plan in its strategic approach for listed and special status species on federal lands, with many similarities on designations and prescriptions for various uses. There are two major differences: (1) DWMAs are smaller, and (2) some specific use allocations are more conservative/restrictive (e.g., eliminate all burro herds throughout the planning area, close all navigable washes in DWMAs, allocate all forage to natural species in three of four livestock grazing allotments, and have three times more highway fencing in DWMAs).

### **Small DWMA--B Alternative**

This alternative is a synthesis of strategy and use prescriptions from all other alternatives. It proposes a strategic approach for listed and special status species on federal lands, but at a generally less costly, higher "risk level": 50 percent coverage for species ranges instead of 80 percent in the Proposed Plan and Small DWMA--A Alternative. Tortoise DWMAs are identical to those in the Small DWMA--A Alternative. Use



prescriptions are less restrictive than those for both the Proposed Plan and the Small DWMA--A, the major differences being (1) a 3 percent limit on surface disturbance in DWMA's, (2) a sliding scale ratio for compensation of tortoise habitat disturbance compensation throughout the planning area, (3) 90 percent less tortoise fencing along highways than the Proposed Plan, (4) retention of some livestock grazing in the Chemehuevi DWMA, (5) less reduction of burros in burro herd management areas and the creation of a new herd management area, (6) acquisition of fewer private lands, (7) a 1:1 compensation ratio for four natural communities, and (8) closure of fewer routes than any of the other alternatives.

## **Environmental Consequences**

Effects analysis is based in part on the current and projected low amount of use in the NECO planning area. The analysis below captures effects highlights, only. Other resource values--e.g., air and water quality and cultural resources--would be essentially unaffected or have some positive effects. For comparative analysis of the impacts of the four alternatives, see Table 4-27 near the end of Chapter 4, just before the discussion of cumulative effects.

### **No Action Alternative**

National fallback standards for rangeland health would be applied to grazing allotments only. Thus the health of the remainder of ecosystems would not be addressed. The array of authorized uses and disturbances would generally continue at current levels, with current mitigation and compensation measures. While this approach to recovery of threatened species addresses most needs for desert tortoise management, it is not strategic for ecosystems as a whole. It lacks additional incentive to locate authorized disturbances away from critical habitat, it does not address tortoise mortality on highways, and it allows a number of disturbing uses to continue in critical and other important habitats. The lack of strategic approaches to managing species and habitats puts at risk the recovery of the desert tortoise and health of other special status species. Livestock and burro grazing are largely unaffected, but would be reduced where national standards assessments and monitoring indicate habitat stress. Continued management of burros at current levels also risks ecological declines and continuation of conflicts with other Colorado River agencies. The designation of routes of travel would benefit species and habitats in key places of sensitivity without further serious declines in opportunity or access to desert resources.

### **Proposed Plan**

Adoption of a strategic approach for tortoise recovery and managing special status species and natural communities should meet the recovery mandate and satisfactorily address other scoping issues. Within DWMA's and WHMA's, burros, livestock grazing, routes of travel, OHV use, competitive vehicle events, and other uses are moderately affected by conservation measures. New restrictions are minimal. The reallocation of ephemeral forage to the desert tortoise, bighorn sheep, and other species will aid tortoise recovery and separate domestic and native sheep. Two of four allotments would no longer support livestock grazing, but as they are rarely used, forage reallocation would have a negligible economic effect. The number of cattle would not be reduced in the Lazy Daisy allotment by a small reduction of area, but the cost of managing the allotment could increase in periods of low forage production when cattle must be removed from the DWMA portion of the allotment. Closing two small OHV areas and one competitive event course should have little recreation effect since they are seldom utilized. Reduction in the number of burros should better balance burro

and bighorn sheep use where they are in common as well as reduce conflicts to lands managed by other Colorado River agencies. The amount of habitat acquisition could reduce county tax base for the three counties covered by NECO if acquisitions are mostly accomplished through fee purchases instead of exchanges. There would be no land/mining closures. Mining, rights-of-way, and various other uses, would be little affected except for the cost of mitigation and compensation. Some rights-of-way could be relocated to areas of lower habitat value. With the degree of separation between conservation areas and high value use areas in the planning area, uses are generally less encumbered and conservation more enhanced. About 5 percent of the 4,982 miles of existing unpaved routes (239 miles) and 10 percent of washes (by area) would be closed to motorized-vehicles. These changes in uses would result in improved vegetation cover, reduced habitat disturbance in high value habitat for all species, reduced forage competition, and reduced mortality of desert tortoises along major highways, in washes in areas of highest tortoise density, and for some other species at key locations. The artificial waters should help stabilize bighorn population declines, a situation that is so critical that some waters would be located in BLM wilderness areas. Given the small number of waters involved and their small visual intrusion, these waters would have a small effect on wilderness values.

### **Small DWMA--A Alternative**

Although DWMA's are smaller in size, this alternative has a more positive effect for the desert tortoise and other ecosystem components than does the Proposed Plan. However, impacts upon some uses and other values are greater in that measures are more restrictive for some uses. The elimination of all burro herds in NECO, along with a similar proposal for herds in NEMO, would result in the near total removal of all burros from the CDCA. Their removal would allow other agencies along the Colorado River to better meet their management mandates and reduce stress for some bighorn sheep herds and other ecosystem elements. Closure of nearly all navigable washes in DWMA's would restrict the nature of hunting, rock hounding, and some other forms of recreation. Reallocation of forage to the desert tortoise in an ephemeral grazing allotment would reduce livestock grazing to only one of four allotments. The realignment of the Lazy Daisy perennial cattle allotment would reduce the cattle authorization and require costly fence construction to keep cattle out of the DWMA. The cost of construction of tortoise fences along additional highways and maintained dirt roads would be \$33.6 million, three times the cost for the Proposed Plan, with the additional impact of high operation and maintenance costs for county governments and holders of various rights-of-way for the highways and dirt roads without bridges and culverts. Other proposals would be similar to those in the Proposed Plan and have similar effects.

### **Small DWMA--B Alternative**

Although strategic and comprehensive for the tortoise and other ecosystem elements, there are significant departures from the Proposed Plan and the Small DWMA-A Alternative, including a 3 percent limit on surface disturbance in DWMA's, 50 percent coverage for other species and natural communities, and less change to certain uses. These differences increase the risk for tortoise recovery and future new threatened or endangered species listings. Burro management levels could result in greater conflicts with bighorn sheep and Colorado River agencies than in the Proposed Plan and would also encourage burros in DWMA's. Adding one new burro herd management area would help offset herd closures elsewhere in the CDCA. Ephemeral cattle use in part of the Chemehuevi DWMA, while intermittent, could hinder tortoise recovery. Allowing redundant routes to remain open would have a small increased impact upon species and habitats. Other proposals would be similar to those in the Proposed Plan and have similar effects.

### **Cumulative Impacts**

Over several decades about half of the CDCA has been Congressionally designated for military, national park, and wilderness uses. As a result, resource access and uses are restricted or highly limited in these parts of the CDCA. The remaining half is equal parts federal and private lands. CDCA Plan decisions in 1980 included programmatic zoning and an array of allocations for a variety of specific uses and have served for 20 years. Designations and plan allocations have affected most desert uses--vehicle access, public access, recreation, cattle and burro grazing, mining, and utilities--to recognize nationally important values and resolve conflicts. However, during the last 20 years, about 30 species of plants and animals have been listed under the federal ESA, and an additional 120 species are sensitive and considered as special status species by a number of agencies. Additionally, species on private lands in the western CDCA are under stress from urbanization. About 5.5 million acres are designated as critical habitat for listed species. The designation of 7.3 million acres for national parks and BLM wilderness areas in the 1994 CDPA did not resolve most species and habitats issues. This is the context for ten current plans and plan amendments in the CDCA. In addressing the noted species and habitats issues, it is anticipated that the six plans that will update and amend the CDCA Plan will add no new general closures, but will add a modest amount of new uses allocations and mitigation and compensation requirements. In urbanizing areas, lands for development and species preserves will be identified. Overall, species and habitats issues will be greatly resolved, and decisions will reduce the possibility of future species listings. Use issues on private and federal lands should diminish.

### **Appendices**

Several appendices support discussion in the various chapters. These include over 60 maps; species and habitats data, analyses, and methods; routes designations and rationale; and public comments on the DEIS and responses.

## Chapter 1–Introduction

This document consists of an environmental impact statement (EIS) analyzing the effects of proposed management actions and alternatives for the planning area of the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO). The EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (40 CFR 1500).

### 1.1 Purpose, Need, and Scope

The primary purpose of this EIS is to amend or create land use plans and specific management prescriptions for species and habitats on federal lands, providing in particular for the recovery of the desert tortoise. Plans to be amended include the Bureau of Land Management (BLM) 1980 California Desert Conservation Area (CDCA) Plan, the BLM 1987 Yuma District Resource Management Plan for wild horse and burro management, and the Joshua Tree National Park (JTNP) General Management Plan and Backcountry and Wilderness Management Plan (WMP). The applicable portion of NECO will serve as the basis for the resource management plan for the Chocolate Mountains Aerial Gunnery Range (CMAGR), as required by Title VIII in the 1994 California Desert Protection Act (CDPA). CMAGR is managed by the U.S. Marine Corps Air Station, Yuma (USMC). The purpose and need described in this section tier from the purpose and need described in BLM’s CDCA Plan, JTNP’s GMP, and the basic mandate for military mission in CMAGR. For BLM, the CDCA Plan describes a purpose and need based upon a multiple use management mandate in a national conservation area, all derived from the 1976 Federal Land Policy and Management Act (FLPMA).

The desert tortoise was listed in 1990 as a threatened species under the Federal Endangered Species Act. By law, land managing agencies are required to review their current land use plans, adjust them as necessary, and consult on their adequacy with the U.S. Fish and Wildlife Service (USFWS). USFWS will then issue a biological opinion on plan adequacy. In 1994 the USFWS designated critical habitat for the desert tortoise. Critical habitat comprises about 42 percent of the NECO Planning Area and, along with some non-critical desert tortoise habitat in JTNP, comprises significant portions of lands managed by BLM, CMAGR, and JTNP. In 1994 the USFWS issued the Desert Tortoise (Mojave Population) Recovery Plan, which provides recommendations for land planning and tortoise management; these recommendations are an important consideration in developing NECO.

Special status species include all state and federally listed threatened and endangered species and other species given special attention by agencies. The latter includes species designated as sensitive by the BLM in California, candidate and species of special concern by USFWS, and species of special concern by the California Department of Fish and Game (CDFG). Given the complex relationship among species and their habitats, the increasing number of species listings over the past several years, and the prospect of more listings, it is logical and prudent to broaden the scope of the plan to a multiple species/habitats level. A complex ecosystem approach offers the best opportunity to arrest the decline in biodiversity and eliminate or minimize the need for further listings.

Hand in hand with the biodiversity approach is the need for agencies to coordinate planning and management actions. While species and habitats cross the boundaries and regulatory responsibilities of many agencies, historically agencies have not coordinated land management on a strategic or landscape basis. Despite the well meaning efforts of all parties, there has been little assurance that biodiversity declines will stabilize and

reverse and the species will persist. Therefore, one of the fundamental needs for the planning area has been to accomplish the plan on a cooperative basis. The cooperating agencies include the three federal land managing agencies (BLM, NPS, USMC) plus a number of other local, state, and federal agencies. Among the more involved non-land managing agencies are USFWS, CDFG, and the counties of San Bernardino, Riverside, and Imperial. Several non-governmental interests have been involved as well.

To aid cooperative implementation of the plan for such tasks as habitat management actions and monitoring for all special status species and natural communities, this plan will also be developed as a Sikes Act Plan. This will be done in cooperation with CDFG under the authorities of the Federal Land Policy and Management Act of 1976 (P.L. 94-579) and the Sikes Act, Title II (P.L. 93-452 and P.L. 95-420) and the Master Memorandum of Understanding (MOU) between BLM and CDFG to cooperatively prepare comprehensive wildlife habitat management plans. The Sikes Act authorizes BLM to develop and implement plans in cooperation with state fish and game departments for the development and protection of wildlife habitat. It authorizes the preparation of MOUs for the transfer of funds between agencies for the completion of projects, inventories, studies, and other programs. It is BLM policy that, whenever possible, habitat management plans are developed in full cooperation with state agencies under Sikes Act authority. The Master MOU affirms that to the maximum extent possible, wildlife activity plans will be cooperatively developed as Sikes Act plans.

Another purpose is to implement the Rangeland Reform 94 initiative to improve ecological conditions while providing for sustainable development and uses on public lands. While this program is a BLM initiative, the standards by which ecological health will be measured will help define the goal for planning and coordination across agency boundaries as noted above.

There are two major features of this initiative. One is to develop and adopt a set of standards or goals that define the characteristics of healthy ecosystems. These standards have in essence been a part of land management practices but were never defined in so many words. Measurements to determine how well standards are being met are also defined. The other major feature is to develop guidelines for managing domestic livestock operations to help meet the standards for the areas managed under grazing leases. BLM's Desert Advisory Council has been instrumental in helping to develop the Standards and Guidelines for the California Desert District. While this initiative applies to BLM-managed lands, the adopted Standards will be used to guide the development of this plan and measure the effectiveness of land management for all federal lands. For more on this subject, refer to Appendix B.

A final purpose is to incorporate land use designations contained in the 1994 California Desert Protection Act into the CDCA Plan.

Plan management and decisions apply only to federal lands. The plan is not a habitat conservation plan (HCP) covering private lands. Private lands may be indirectly affected, however, through nexus with federal lands and from land acquisition/disposal initiatives. Conversely, over a many-year period, some land uses proposed for private lands adjacent to public (i.e., federal and state) lands could have significant effects on public lands and reduce the effectiveness of public land management. Such actions include ground water pumping and landfills. While it is beyond the scope of NECO to address use of private lands, an attempt is made to identify how some adjacent land uses could create public land management issues and "red flag" them for land managers to articulate and ask for objective review through CEQA.

This plan creates an overall framework for managing and allocating public land resources and uses in the planning area for a number of years. The effective life varies by plan aspect (e.g., management needs for various species, data and models reliability, and assumptions about the future) so no one number of years is identified. For instance, goals and objectives for species and habitats are more or less permanent, while recovery of the desert tortoise could take a hundred or more years. The need for management areas and the suite of proposals for them, therefore, has long-term application. Some data are fairly complete and others are not. Much of the plan is based upon model results that can change as data are improved or conditions and uses change. It may be necessary to amend the plan at a later date, due to unforeseen events (e.g., an increase in the list of special status species, more listings under state or federal endangered species acts, a change in mission or major land uses on BLM or CMAGR federal lands). With this in mind, we should consider the plan as ever changing--different rates and milestones and priorities for different aspects. A proposed action common to all alternatives is that the NECO cooperators meet annually to address many subjects, including the application of all parts of the plan, and act to update and change parts accordingly.

This document analyzes the Proposed Plan Amendments and three alternatives: No Action--Current Management; Small DWMA--A Alternative; and Small DWMA--B Alternative. The Preferred/Large DWMA Alternative of the DEIS has been adjusted based upon public comments and internal review, and it is now called the Proposed Plan Amendments. The Final EIS has been prepared for the Proposed Plan Amendments and other alternatives in order to comply with the NEPA. NEPA requires federal agencies to prepare statements documenting environmental consequences of federal actions significantly affecting the human environment. An amendment to the CDCA plan qualifies as a significant action and thus requires the preparation of an EIS.

## **1.2 Planning Area**

The Planning Area amounts to about 5 percent of California and is located in the southeast corner of the state (Map 1-1 Appendix A). Specifically, starting from the City of Needles on I-40, the NECO boundary<sup>1</sup> runs south along the CDCA boundary, parallel to the Colorado River, to the Quechan Indian Reservation near Yuma, AZ. (Note that the Colorado River, the state line, is not the boundary.) The boundary skirts the reservation to the All American Canal near the International border. The boundary follows the All American Canal to I-8, east to Ogilby Road, and then north on Ogilby Road to its intersection with the Union Pacific Railroad (formerly Southern Pacific Railroad). The boundary then runs north along the railroad to its intersection with the western boundary of the CMAGR, then along the CMAGR western boundary to its intersection with the Coachella Canal. The boundary runs north along the east side of the canal to its intersection with Dillon Road in Coachella Valley, then north along Dillon Road to its intersection with the western boundary of T4S R8E, then north along this line to its intersection with the southern boundary of JTNP. At this point the Plan boundary runs east and north on a zigzagging course following section lines through and to the northern boundary of JTNP. The NECO boundary roughly splits JTNP into east and west halves. The NECO boundary then runs east along the northern boundary of JTNP to a point where it turns north and away from JTNP along the east side of T1S R13E. North of this township the boundary zigzags northwest along section lines through the Sheep Hole Mountains to Amboy Road at Sheep Hole Pass. At this

---

<sup>1</sup>Where the boundary is a demographic feature, the exact boundary will be the centerline of the feature.

point the boundary runs north along Amboy Road to its intersection with Historic Route 66 near Amboy, runs east on this highway to the Kelbaker Road, then north on the Kelbaker Road to its intersection with I-40. From this point the boundary runs east to Needles (Map 1-2 Appendix A).

The NECO Planning Area comprises 5,547,665 acres of private, federal and state land. The majority of the planning area land is public land managed by BLM, with a total of 3,823,194 acres (Fig. 1-2). Three federal agencies manage 86 percent of the 5.5 million acres of the planning area as presented in Table 1-1 and as shown on Map 1-3 (Appendix A). Each of the three federal land managing agencies has land use plans or programs that generally provide a zoning approach to management with goals and allowable uses and prescriptions. These plans and programs are described in section 1.6.

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

<b>Ownership</b>	<b>Acres</b>	<b>Percent of Planning Area</b>
<b>Total Federal</b>	<b>4,752,745</b>	<b>85.7</b>
Bureau of Land Management	3,824,205	69.0
Joshua Tree National Park	465,622	8.4
Chocolate Mountain Aerial Gunnery Range (USMC)	459,566	8.3
Other Federal	3,352	0.1
<b>State</b>	<b>110,864</b>	<b>2.0</b>
<b>Private</b>	<b>681,142</b>	<b>12.3</b>
<b>Total Planning Area</b>	<b>5,544,750</b>	<b>100.0</b>

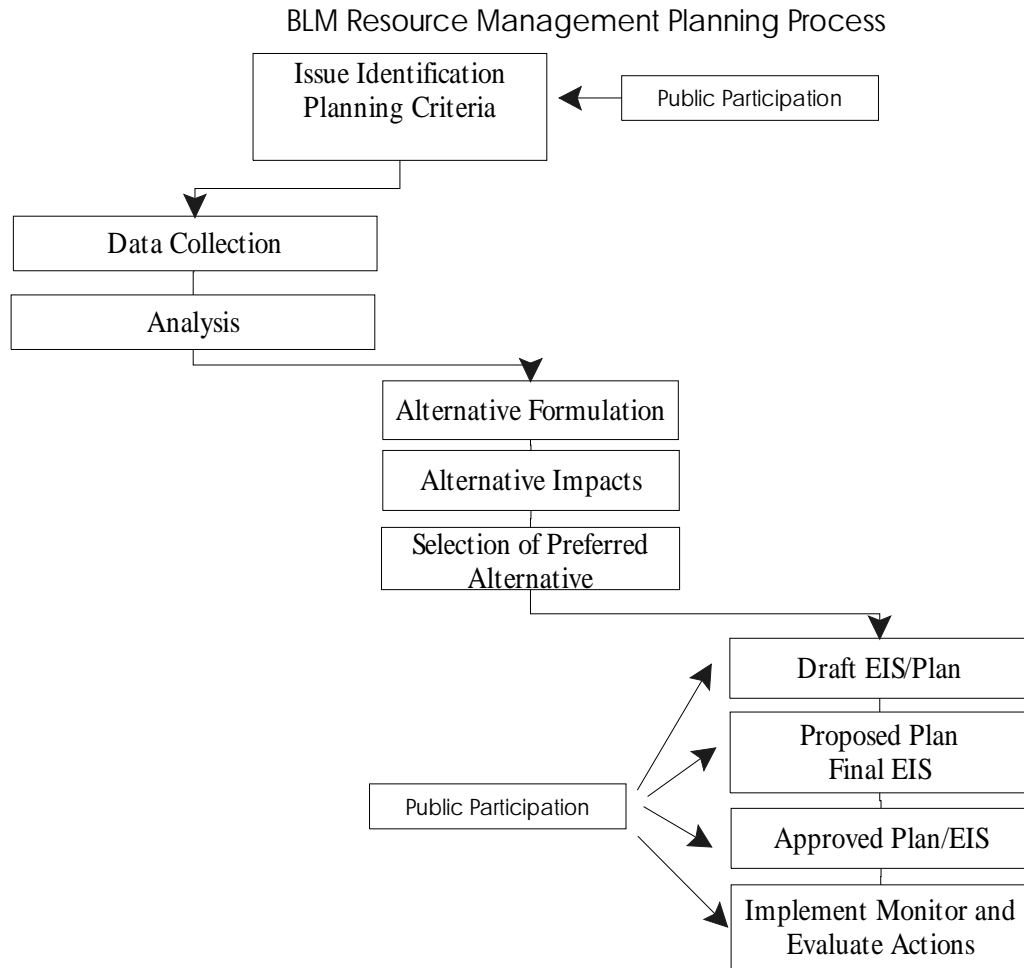
### **1.3 Planning Process Description**

The planning process (Fig. 1-1) for this EIS began in March 1994 with a series of public scoping meetings. During this process, six planning issues were identified by the public:

- Recovery of the Desert Tortoise
- Management of Special Status Plants and Animals and Natural Communities
- Designation of Routes of Travel
- Land Ownership Pattern
- Access to Resources for Economic/Social needs
- Management of Wild Horses and Burros

Two additional issues--maintenance of the CDCA Plan and standards and guidelines--were added later in the planning process.

It can not be overstated that collaboration is central to developing the plan/amendments and EIS. Many individuals helped define and conduct the process, data collection and review, models and analyses, and conservation strategy and details. Chapter 7 lists the names and agency and interest affiliations of those who were involved.



**Figure 1-1. Northern and Eastern Colorado Desert Planning Process**



## 1.4 Planning Schedule

The planning process will conclude in 2002 with the completion of the Approved Plan Amendments and Record of Decision and follow this approximate schedule (based on a mid-July 2002 completion of the Proposed Plan Amendments and Final EIS):

### Mid July

- Mail Proposed Plan Amendments/Final EIS mailed to the public.
- Publish (EPA/BLM) notice of availability of FEIS in the *Federal Register*.
  - Begin 30-day public comment/protest period.
  - Begin 60-day Governor's conformance review.

### Mid August

- End 30-day public protest period.

### Mid September

- End Governor's conformance review period.

### Mid October

- Resolve public protests. Sign Record of Decision.

## 1.5 Planning Issues

The NECO plan defines and addresses the issues shown on Table 1-2 as identified by BLM, other agencies, and the public. Livestock grazing is addressed in the first three issue rows of the table.

**Table 1-2. Summary of Significant Management Issues and Action**

Issue	General Management Action
Standards and Guidelines	Adopt rangeland Standards for managing ecosystem health and Guidelines for managing domestic livestock uses
Recovery of the Desert Tortoise	Identify areas and develop management prescriptions for each recovery unit identified in the U.S. Fish and Wildlife Desert Tortoise Recovery Plan
Management of Special Status Plants and Animals and Natural Communities	Develop a strategic framework of areas and prescriptions for managing species and habitats
Management of Wild Horses and Burros	Identify areas and management prescriptions for wild burros that achieve the goals of the Wild Horse and Burro Act, the conservation of native species and habitats, and mandates of a variety of affected agencies
Designation of Routes of Travel	Designate a system of routes on federal lands that is commensurate with the conservation of species and habitats and needs for general and special purpose public access
Land Ownership Pattern <sup>1</sup>	Identify public lands managed by BLM and private lands that are suitable for change in ownership to enhance the manageability of public lands for conservation and other public purposes and development of private lands for community and other private purposes
Resource Access/Regulatory Burden	Provide access to or through BLM-administered lands for public and private economic and recreation uses. Provide regulatory relief for projects in the land use plan.
Maintenance of CDCA Plan	Amend the CDCA Plan of 1980 to incorporate wilderness and other designations passed by Congress in the California Desert Protection Act of 1994.

<sup>1</sup> Since the 1994 Public Scoping meetings, this issue has been dramatically reduced for both BLM (in tortoise habitat and wilderness areas) and Joshua Tree National Park through the acquisition of over 140, 000 acres of lands previously belonging to Catellus, Inc., and the State of California (State Lands Commission).

## 1.6 Planning Criteria

Planning Criteria are the rules and other factors used to form judgements about data collection, analysis, and decision making during planning. Planning criteria for the Plan include all applicable federal laws, regulations, executive orders, policies, and applicable portions of existing land use plans, which the cooperating agencies are required to follow. The planning lies entirely within the California Desert Conservation Area, which was established by Congress in 1976. Some of the planning criteria, however, were specifically developed for the NECO planning effort. These planning criteria are listed below.

### Cooperate with Local, State, and Federal Agencies

1. Develop the planning process, data, analyses, and decisions on a cooperative basis for the recovery of the desert tortoise and the conservation of other species and habitats on federal lands, particularly for those species and habitats which are managed in common, among the following federal land managing agencies: the Bureau of Land Management, Joshua Tree National Park, and the U.S. Marine Corps Air Station (for the Chocolate Mountains Aerial Gunnery Range).
2. Federal agencies noted above should cooperate with local, state, and federal land managing and regulating agencies, major private land owners, and leaders of conservation and use interest groups in and adjacent to the planning area to define and develop the planning process, data, and analyses and for support of realistic, acceptable, cost effective, and manageable plan decisions.
3. Evaluate the need or opportunity for plan decisions to apply to state and private lands. If the need is not compelling, work with local and state agencies as noted above to allow plan decisions to be useful for state and local land use decisions and initiatives to seek Section 10A permits from the U.S. Fish & Wildlife Service under the Federal Endangered Species Act.

### Species, Habitats, and Ecological Processes

1. The desert tortoise and the Coachella Valley Milkvetch are the two species in the planning area that are federally listed (threatened) under the Federal Endangered Species Act. Using recommendations contained in the Desert Tortoise Recovery Plan, other documents and data on the desert tortoise and various land uses, establish Desert Wildlife Management Areas (DWMAs) and guidelines for the desert tortoise that will provide for the recovery of the species. Similarly, establish management guidelines to protect the Coachella Valley Milkvetch.
2. Identify additional wildlife and plant species of concern for which management should be specifically addressed.
3. Conduct inventories, with a focus on developing and evaluating a map of plant communities upon which many conclusions about the nature of species and habitats may be based, including predicted occurrence of plant and wildlife species of concern.

4. Where data on the occurrence of species of concern is incomplete, develop species/habitat relationship models to provide better understanding about their probable distribution and relationships to habitats.
5. Identify the ecological processes that determine the occurrence and abundance of species and habitats and that should receive management emphasis.
6. Analyze the distribution of biological resources with current management and information about actual and potential uses to determine conflicts.
7. Identify areas where protection of species and habitats should be emphasized and areas where protection emphasis is less important. Develop management guidelines for these areas.
8. Following the direction contained in BLM Instruction Memorandum CA 97-31, identify areas that are representative of plant communities that can be designated as Research Natural Areas.
9. Articulate new guidelines for managing ecosystems in terms of species, habitats, or ecological processes using BLM's Rangeland Standards for Public Lands Health as a guide.

### **General Resource Uses**

Collect information on current resource management, resource uses, and access needs to reflect the variety and relative importance of uses and needs. The information will be considered in developing the range of conservation emphases noted above. New use restrictions and requirements will be added as necessary and will vary with location according to biological and use values and sensitivities.

### **Routes of Travel**

1. Thoroughly and accurately inventory all the routes of travel (roads) within the planning area.
2. Identify wash systems where washes are used as routes of travel.
3. Identify a network of routes that will continue to provide for access and recreation needs but will also be compatible with conservation goals noted above. On BLM lands, designate routes as open, closed, or limited as required by the California Desert Conservation Area Plan of 1980. Extend decisions to washes systems.
4. When considering closing or limiting use of routes, use conflict analyses to show conservation issues with specific routes or groups of routes.
5. Identify appropriate management techniques for key areas of designated routes to best meet the goals and needs for conservation and uses. Consider such tools as providing on-site information and education, signs, ranger patrol priority, and inclusion or exclusion on maps.

### **Wild Burros**

Wild burros along the Colorado River roam across lands administered by a number of state and federal agencies, including BLM lands administered by offices in both California and Arizona. These burros also roam back and forth across the eastern planning boundary. BLM is the responsible agency for managing wild burros.

Currently the BLM offices in California and Arizona have separate management plans and activities. This situation does not provide for effective decision making and management. Therefore, data collection, analyses, and decisions that affect wild burros along the Colorado River should be approached on a cooperative basis among the California and Arizona BLM offices, as well as other affected agencies, and include the area east of the eastern planning area boundary in which these burros occur.

### **Land Tenure Adjustment and Use Authorizations**

1. Identify the need for acquisition of private and State Land Commission lands or access to improve the effectiveness of managing areas where protection of species and habitats should be emphasized. Focus on the areas of “checkerboard” land pattern.
2. Inventory private lands for ownership density (i.e., number of owners per section). Areas of dense ownership may not be practical for acquisition.
3. Identify those BLM lands which are too isolated or too small to be effectively managed or lands of low resource value which should be made available for disposal, especially through exchange, to improve the efficiency of land management and provide for private economic opportunities.
4. As much as possible, accomplish land tenure adjustments through land exchanges.
5. Develop general descriptions of operation and maintenance practices for power transmission lines and pipelines, and plan decisions needed to modify operation and maintenance practices, in order to (1) generally meet the need to address desert tortoise recovery, and (2) provide a basis for utility companies to directly seek Section 10A permits from the U.S. Fish and Wildlife Service for these practices after the plan is completed.

### **Other maintenance needed for the 1980 California Desert Conservation Area Plan as a result of the passage of the 1994 California Desert Protection Act**

1. Incorporate wilderness designations into the Plan.
2. Re-designate Multiple Use Class C (Controlled Use) areas that were not included in wilderness designations to other appropriate multiple use class(es).

## **1.7 Consistency with Local, State, Tribal, and other Federal Plans**

Many local, state, and federal agencies were cooperators to developing this plan. These include the three federal land managing agencies (BLM; National Park Service; and Navy Department--U.S. Marine Corps Air Station, Yuma); U.S. Fish and Wildlife Service; California Department of Fish and Game; CalTrans; and the counties of San Bernardino, Riverside, and Imperial. Four Colorado River tribal councils have been consulted throughout the planning process. Other agencies have also been involved to varying extent. A full list of these entities is included in Chapter 7. BLM is the lead agency and has coordinated NECO development with all these agencies at various levels as required for consistency with plans and/or formal consultation. This document would also constitute a Sikes Act agreement with the California Department of Fish and Game. Plan decisions address only federal lands; therefore, the following additional information is provided about current land use plans of the three federal land managing agencies involved.

### **Bureau of Land Management**

The goals of the California Desert Conservation Area Plan (CDCA Plan), which covers BLM-managed public lands throughout the California Desert, are defined and achieved through management and program actions and resolution of conflicts. The Plan provides overall direction through four major Multiple-use Classes (MUC): Controlled Use (C) for wilderness areas, Limited Use (L), Moderate Use (M), and Intensive Use (I). Further plan direction--both "programmatic" and on-the-ground allocations--is included in "plan elements" for such programs as utilities, mining, domestic livestock grazing, and species/habitat protection. Areas of Critical Environmental Concern (ACECs) and Wildlife Habitat Management Areas (HMAs) were designated for further development of site-specific conservation management actions.

The CDCA Plan is an adaptive plan which has been amended numerous times over the past 17 years. Additionally, in October 1994, Congress passed the Desert Protection Act, which designated wilderness areas for the California Desert.

### **Wild and Scenic Rivers Act**

To be eligible for consideration under the National Wild and Scenic Rivers Act of 1968, as amended, P.L. 90-542 (16 U.S.C. 1271-87, et seq.), a river segment must be free-flowing and must possess at least one river-related value considered to be outstandingly remarkable (the terms "river," "free-flowing," and "outstandingly remarkable values" are defined by the Act). However, there are no named waters other than springs known to BLM in the NECO planning area, and the public has not raised the issue of Wild and Scenic Rivers eligibility in the NECO planning process. As far as is known, all waterways in the planning area are dry washes that may run water during and following a storm event. For these reasons, BLM does not believe an inventory of such possible river or river segments is warranted at this time, and thus will not at this time make a determination of eligibility in the NECO Planning Area.

### **Wilderness Management**

In the 1994 California Desert Protection Act, the U.S. Congress designated 23 wilderness areas in the NECO Planning Area. The Act did not address the extent that wilderness management plans are required for any or all of these areas. Nevertheless, at such time in the future that wilderness management plans are developed, the results of the NECO planning process will be of value in defining management needs for species and habitats.

### **Joshua Tree National Park**

Management of JTNP is defined in a General Management Plan (GMP) that was completed in 1994. A GMP amendment, the *Back Country and Wilderness Management Plan*, was completed in 1999 to bring the GMP up to date with provisions of the California Desert Protection Act.

The purpose of the GMP is to define the overall preservation and use management strategy for resources within the Park. This is approached through management zoning for all lands. Management zoning determines how specific lands in the JTNP are to be managed to protect resources--including species and habitats--and provide for visitor enjoyment. Four zone classifications are used: Natural, Historic, Development, and Special Use. Within each zone, subzones may be designated to allow for particular management needs. Some activity or implementation plans have also been developed for specific resources.

### **Chocolate Mountains Aerial Gunnery Range**

Management of CMAGR for military uses and natural resource management is the responsibility of the Marine Corps Air Station, Yuma (USMC). There is no plan in place for managing natural resources on CMAGR, but current management is described in USMC's Final EIS for the Yuma Training Range Complex (USMC 1999). In addition, Title VIII of the 1994 California Desert Protection Act requires the Secretaries of Interior and Defense to jointly develop a resource management plan, with management oversight by Interior, for natural resources for the CMAGR. With USMC as a cooperator in the development of the NECO Plan, the USMC will adopt applicable provisions as its resource management plan.

## **1.8 Current Planning in the Region**

Several concurrent land use planning efforts are in effect in the California Desert (Map 1-4 Appendix A). While these plans address a variety of lands and issues, an important commonality among five of them, including NECO, is that they will each amend a different geographic portion of BLM's CDCA Plan. For these, plan-to-plan consistency for common themes and programs is of great concern. Even though these plan amendments will not be completed at the same time, BLM will ensure that plans decisions are consistent among each other as well as with the purpose and need as stated in the CDCA Plan.

### **West Mojave Plan**

Led by BLM, this plan addresses recovery of the desert tortoise and management of a number of other special status species in the western Mojave Desert. The planning area is about twice the size of NECO and joins

NECO from southern JTNP to Amboy. As with NECO, this plan will amend the CDCA Plan. The plan is also being cooperatively developed by federal, state, and local agencies and will result in the adoption of a habitat conservation plan to address listed species on private lands. The plan is scheduled to be completed in June 2003.

### **Northern and Eastern Mojave Plan (NEMO)**

Also led by BLM, this plan addresses recovery of the desert tortoise and management of a few additional species of concern in the area that generally lies between Death Valley National Park and the Mojave National Preserve. The southern boundary of the planning area is adjacent to NECO, the separation being I-40. This plan will also amend the CDCA Plan but, as with NECO, it only addresses federal lands. The southern boundary of the planning area is adjacent to NECO, the separation being I-40. Extensive areas of desert tortoise habitat lie in both planning areas on both sides of I-40. NEMO and NECO are scheduled to be completed at the same time.

### **Coachella Valley Multiple Species Conservation Plan**

The lead for this plan is the Coachella Valley Association of Governments. The planning area includes most of the urban and urbanizing area of the Coachella Valley as well as the Santa Rosa Mountains--all only within Riverside County. The plan is primarily addressing issues of urbanization, but, as the area is within the CDCA, some decisions will also amend the CDCA Plan and are covered by the same concern for consistency as noted above. The plan will serve as a habitat conservation plan, so decisions will apply to federal, state, and private lands. The eastern edge of the planning area overlaps the NECO Planning Area by about 55,00 acres and will require considerable coordination in developing decisions. It is anticipated that the NECO Plan will be completed first. A considerable amount of plan-to-plan coordination is occurring, but to achieve congruity of decisions for both plans for the area of plans overlap, some NECO decisions may require amending in order to complete the Coachella Valley Multi-species Conservation Plan (MSCP).

### **Imperial Sand Dunes Recreation Area Management Plan (ISDRAMP)**

A draft management plan and DEIS for the Imperial Sand Dunes has been released for public review. BLM is the plan lead. The planning area includes the bulk of the Imperial Sand Dunes which lies adjacent to a portion of the NECO Planning Area; however, there is a small overlap between the two plans (ISDRAMP overlaps NECO) along and just east of the railroad tracks on the northeast side of the dunes (see Map 1-4). Since management issues in this overlap area are more closely tied to management issues in the Sand Dunes, ISDRAMP decisions will apply in this area. The schedule for this plan is essentially the same as that for NECO and NEMO.

### **Western Colorado Desert**

Two limited-scope planning initiatives are involved in this area, which lies west of the Imperial Sand Dunes and is split by Imperial Valley's agricultural lands: (1) Flat-tailed Horned Lizard Rangeland Management Strategy was prepared in May 1997 to guide subsequent conservation planning efforts among land managing and regulatory agencies for the flat-tailed horned lizard. Conservation measures are listed that would be



applied to five areas of follow-up land use plans. (2) Routes of Travel designation proposals are being developed by BLM.

### **Lower Colorado River MSCP**

The lead for this plan is the Lower Colorado River MSCP Steering Committee. The planning area encompasses that section of the Colorado River from Glen Canyon Dam in Arizona to Mexico, and between the 100-year flood plain lines on either side of the river. The scope of the plan is two fold: (1) ecosystem management with a focus on federal and state listed threatened/endangered species; and (2) water and power production. The two planning areas share common species and habitats; however, river habitat species are not included in the scope of the NECO effort. This plan is still in the early stages of development. A record of decision is anticipated in mid-2004.

### **General Management Plan--Mojave National Preserve**

The Mojave National Preserve lies immediately to the north of the NECO Planning Area. The I-40 Freeway is the common boundary. Except for the freeway, NECO and the Preserve share the same population of desert tortoise and other species. Management of the Mojave National Preserve is defined in a General Management Plan (GMP) completed in 2001. The goal of the plan is to define the overall preservation and use management strategy for resources--including recovery of the desert tortoise and conservation of other species and habitats--within the Preserve, which was created in 1994 through the CDPA. A considerable area of the Preserve is desert tortoise habitat. After the General Management Plan is completed, specific activity or implementation plans will follow.

## **1.9 Using This Document**

Chapter two of this document details goals, objectives, and management actions of the Proposed Plan Amendments and three additional alternatives. Chapter Three describes the affected environment. It includes previous land management practices, the current condition of water, soils, flora, wildlife, and other resources, and the nature and extent of social and commercial uses. Chapter Four evaluates the environmental consequences (effects) of each alternative. Chapters Five and Six describe plan monitoring and implementation. Chapter Seven identifies the entities involved in consultation and coordination. All the appendices, including maps, provide supporting information and are found in the second volume of this two-volume set.

## Chapter 2–Alternatives

### Introduction

The chapter describes the alternatives considered which would fulfill the purpose and need for amending land use plans and creating specific management prescriptions for species and habitats on federal lands, providing in particular for the recovery of the desert tortoise. Each of the four alternatives fully considered in this process is discussed under the eight planning issues described in Chapter 1. Other alternatives considered but eliminated from detailed study are also described.

### Vision and Concept

Each local, state, and federal agency and public interest with a stake in this plan has a mandate, or vision, or an influence related to the conservation of desert ecosystems. The three federal land-managing agencies, in particular, have very different mission mandates: multiple-use (BLM), preservation (JTNP), and military training (USMC). Visions and mandates for this planning area are well stated in existing land use plans, laws, and issue positions. An important and unique task in producing this plan was to search for synthesis of mandates and interests--i.e., to determine the nature and extent that agencies and interests shared desert ecosystems in common and, by this nature, also shared in their conservation. The difficult search for land management common ground defined the planning process. While a definitive common vision never was articulated during the planning process, and all stakeholders were not unanimous in their support for the details of proposals which follow, some fundamental points of ecosystem conservation and human use did evolve and suggest that overall land management should:

- conform to the intent of Standards for Public Land Health which would provide for the recovery of the desert tortoise and eliminate the need for more listings of species under state and federal endangered species acts,
- meet as much as possible the arrayed needs for human economic and social pursuits as defined by administrative mandate and articulated interest,
- impose as little additional restriction and expense burden on uses as possible, and
- include large areas of conservation to best allow for both the stresses of nature (on desert ecosystems) and allowable human uses.

Alternatives included in this plan describe an array of existing and new conservation areas or zones and prescriptions that address the conservation points noted above. In reading this plan, the reader should keep in mind the above points and the following hierarchical zones for conservation and use:

**Existing restricted areas** include all Joshua Tree National Park (JTNP) lands, non-target Chocolate Mountain Aerial Gunnery Range (CMAGR) lands, and BLM wilderness lands. Many uses and mechanical equipment are restricted, primarily by law. They are fixed and not negotiable. They provide a high degree of protection and preservation of species and habitats, but alone they do not

address ecosystem management on an overall basis. They provide the foundation for species and habitats conservation.

**Proposed Desert Wildlife Management Areas (DWMAs)** address the recovery of the desert tortoise. These are stand-alone areas which cover much of the designated critical habitat for the desert tortoise. As such they may and do overlap some existing restricted areas. On BLM and CMAGR lands DWMAs are designated areas of critical environmental concern (ACEC). Some additional use restrictions are proposed, but emphasis is placed on minimizing disturbance and maximizing mitigation, compensation, and restoration from authorized allowable uses.

**Proposed Wildlife Habitat Management Areas (WHMAs)** address other special status species and habitat management. Two kinds are proposed: one for bighorn sheep, one for all other special status species and habitats. Bighorn sheep WHMAs overlay the entire range of their occurrence and movement corridors. Multi-species WHMAs are complementary to existing restricted areas and DWMAs, which also cover other special status species and habitats. No restrictions are proposed other than closure of some routes of travel. Management emphasis is placed on active management, specific species and habitats mitigation, and restoration from authorized allowable uses. The special situation of “fixed-point” rare plants is also addressed.

**Other areas** are the remainder of areas not contained in one of the three areas above. These include some target areas in CMAGR and areas of relatively low-value, biological diversity (contained mostly, but not entirely, in BLM multiple use class moderate (MUC M) zones). In these areas federal lands may be disposed of to accomplish management goals for DWMAs and WHMAs, and land uses may occur which are discouraged in more sensitive areas. Except as provided for such situations as tortoise mitigation and some specific species, design and rehabilitation measures based on biological considerations would be less than in other areas.

The existing restricted areas, DWMAs, and WHMAs form the Multi-species Conservation Zone. As much as possible, the array of DWMAs and WHMAs does not incorporate areas high in human use values, although this situation does vary by alternative. Finally, an additional significant feature of managing the BLM portion of these areas is a strategic approach to land acquisitions and disposals. See Appendix H for an expanded explanation of the development of DWMAs and WHMAs and Appendix P for a detailed description of boundaries.

## **Alternatives**

Four land use management alternatives have been developed for federal lands in the Northern and Eastern Colorado Desert (NECO) planning area. They provide decision makers with a range of realistic and distinct options to fulfill the purpose and need for the project and address the eight scoping issues identified in Chapter 1.

### **1. No Action--Current Management**

This alternative describes existing resource conditions with current management practices and present land use allocations. Included are many decisions previously made but not implemented.

### **2. Proposed Plan**

This alternative provides for managing public lands using strong conservation measures to provide for recovery of the desert tortoise. It emphasizes ecosystem management while balancing for multiple uses.

### **3. Small DWMA--A Alternative**

This alternative provides for managing public lands for recovery of the desert tortoise through recommendations contained in the Tortoise Recovery Plan (USFWS 1994). It emphasizes conserving biodiversity and nonconsumptive uses.

### **4. Small DWMA--B Alternative**

This alternative provides for managing public lands with a reduced emphasis on ecosystem management and increased emphasis on multiple use of public resources, while still providing for recovery of the desert tortoise.

## **Alternatives Considered But Eliminated from Detailed Study**

An Environmental Impact Statement is required to rigorously explore and objectively evaluate all reasonable alternatives. The range of reasonable alternatives is limited by legal requirements and the requirements to fulfill the Purpose and Need described in Chapter One. The BLM considered two alternatives that were eliminated from detailed study. These alternatives were eliminated because they did not meet the Purpose and Need for this plan amendment or the CDCA Plan, did not meet certain legal requirements under the Federal Land Policy and Management Act (FLPMA), or were variations of alternatives already being studied in detail through this CDCA Plan amendment and environmental impact statement process.

### **Desert Tortoise Alternative**

An alternative with a single goal of providing for the desert tortoise was evaluated. This alternative was eliminated from detailed study because it did not meet the Purpose and Need of this plan which includes (1) meeting the needs of a variety of special status species and their habitat needs, (2) meeting the need to implement the "Rangeland Reform 94" initiative to improve ecological conditions while providing for sustainable development and uses on public lands, and (3) meeting the need of incorporating land use designations contained in the 1994 California Desert Protection Act into the CDCA Plan. In addition, this alternative would not meet the need as set forth in the CDCA Plan which includes meeting the multiple use requirements as set forth in Section 601 of the

FLPMA because it would eliminate or severely limit uses other than for the desert tortoise within the planning area.

### **Desert Tortoise Recovery Plan Alternative**

An alternative was examined that would have implemented all recommendations of the 1994 Desert Tortoise Recovery Plan. This alternative was dismissed from detailed study because it (1) was a variation of an alternative already being considered in this plan amendment; (2) would not meet the Purpose and Need of this amendment or the Purpose and Need of the CDCA Plan; and (3) would violate the FLPMA. This alternative is a variation of the Proposed Plan Alternative which incorporates most of the recommendations of the Desert Tortoise Recovery Plan. In addition, this alternative would not meet the Purpose and Need of this plan amendment or that of the CDCA Plan, which includes the need for meeting the multiple use requirements as set forth in Section 601 of the FLPMA. The Purpose and Need would not be met because the adoption of all recommendations contained in the recovery plan, when added to all of the other restrictions currently in place, would significantly limit implementation of other multiple use activities within the planning area.

### **Presentation of Alternatives**

Discussions which present, compare, and contrast the alternatives are organized in eight issues:

1. standards and guidelines
2. recovery of the desert tortoise
3. management of other special status animals and plants and natural communities
4. wild horses and burros
5. motorized-vehicle access/routes of travel designations/recreation
6. land ownership patterns
7. access to resources for economic and social needs
8. maintenance of the CDCA Plan

The issue of access to resources is addressed in the combination of proposals described for the other issue categories.

Each issue is further organized by **goals, objectives, and proposed actions**.

**Goals** and **objectives** form the basis for resolving issues and are constant through the array of alternatives. Achieving goals and objectives would be accomplished through implementation of proposed **actions**. The proposed actions are the substance of the plan for which decisions will be made in the Record of Decision document at the end of the planning process.

Actions which are common to all or most alternatives within each issue section are grouped together at the beginning of each issue section. Those actions which are new proposals under each alternative are labeled **Action**. Those which reflect current management are indicated with a **CM**, and those which are referred to elsewhere in the document for full description are indicated with **Ref**.

**Amendments to BLM’s California Desert Conservation Area Plan 1980**

This chapter identified a range of alternatives to address the purpose and need statements described in Chapter one. Some of the actions require amendment of the California Desert Conservation Area Plan in order to implement them, while others do not. A summary list of Proposed Plan is given in Table 2-1.

**Table 2-1. Summary of Issues and Proposed Plan Amendments to the CDCA Plan**

Issue Category	Section Number	Amendment Description
Public Land Health	2.1	<b>Amendment 1:</b> Proposed standards for Public Land Health and grazing management guidelines
Recovery of the Desert Tortoise	2.2	<b>Amendment 2:</b> Establish Desert Tortoise Wildlife Management Areas (DWMAs) and manage as Areas of Critical Environmental concern (ACECs) <ul style="list-style-type: none"> <li>• Change mixed MUC M (Moderate Use) and L (Limited Use) to all MUC L;</li> <li>• Change desert tortoise CAT II and CAT III to all CAT I inside DWMA, change all CAT I and CAT II outside DWMAs to CAT III</li> <li>• Delete some existing ACECs and HMPs</li> <li>• Adopt a set of DWMA (ACEC) management prescriptions</li> </ul>
		<b>Amendment 3:</b> Changes to cattle grazing management to recover the desert tortoise and incorporate 1994 BO in livestock grazing.
		<b>Amendment 4:</b> Changes to the stopping, parking, and vehicle camping to recover the desert tortoise.
Management of Special Status Animals and Plants and Natural Communities	2.3	<b>Amendment 5:</b> Establish Wildlife Habitat Management Areas (WHMAs) for Sonoran and Southern Mojave Bighorn Sheep Metapopulations <ul style="list-style-type: none"> <li>• Delete some existing HMPs</li> </ul>
		<b>Amendment 6:</b> Change MUC I (Intensive Use) in the Eagle Mountains area to MUC L (Limited Use) and MUC M (Moderate Use)
		<b>Amendment 7:</b> Change domestic sheep grazing management for management of the bighorn sheep and incorporate 1994 Biological opinions in livestock grazing.
		<b>Amendment 8:</b> Designate Multi-species Wildlife Habitat Management Areas (WHMAs) for about 60 wildlife and rare plant species
		<b>Amendment 9:</b> Change OHV designation for Palen Dry Lake, Palen Dunes, Rice Valley Dunes, Ford Dry Lake and Ford Dry Lake Dunes

Issue Category	Section Number	Amendment Description
Management of Wild Horses and Burros	2.4	<b>Amendment 10:</b> Change burro management to recover the desert tortoise and reduce conflicts with other agencies/values.
Motorized Access/Routes of Travel/Recreation	2.5	<b>Amendment 11:</b> Changes to organized competitive vehicle events to protect sensitive resources <ul style="list-style-type: none"> <li>• Delete Parker 400</li> <li>• Modify Johnson Valley to Parker</li> <li>• Delete MUC Guideline criteria in Recreation Element</li> </ul>
		<b>Amendment 12:</b> Changes to Routes of Travel Designation process <ul style="list-style-type: none"> <li>• Make MUC M (Moderate Use) the same as MUC L (Limited Use)</li> <li>• Designate routes of travel open, closed, or limited</li> </ul>
		<b>Amendment 13:</b> Changes the distance measurement for stopping, parking off a road from the roadway edge to the centerline of the road.
Land Ownership Pattern	2.6	None Required
Resource Access	2.7	None Required
Incorporate Changes created by 1994 CDPA	2.8	<b>Amendment 14:</b> Incorporate wilderness areas into CDCA Plan.

## 2.1 Issue: Standards and Guidelines

BLM's grazing regulations in Part 43 CFR 4180 require that State Directors, in consultation with Resource Advisory Councils, develop Standards of Rangeland Health and Guidelines for Grazing Management. The grazing regulations require that standards be in conformance with the "Fundamentals of Rangeland Health" (BLM policy developed in 1993) and that the standards and guidelines address each of the "guiding principles" as defined in the regulations (see Appendix B). Standards and guidelines are to be incorporated into BLM's land use plans to improve ecological conditions. Improving ecological conditions is based upon attainment and maintenance of the fundamentals for healthy ecological systems. Standards and Guidelines are defined as follows:

A **Standard** is an expression of the level of physical and biological condition or degree of function required for healthy, sustainable rangelands.

**Guidelines** for grazing management are the types of grazing management activities and practices determined to be appropriate to ensure that the Standards can be met or significant progress can be made toward meeting standards.

### Plan Alternatives and Scope

By this plan amendment, Public Land Health Standards would be developed and applied to resources and uses on the public (BLM) lands and grazing management guidelines would be developed and applied to grazing leases. The current regulations include a set of National "fallback" Standards and Guidelines, which apply only to livestock grazing in the Current Management/No Action Alternative. For all other alternatives a common set of "Regional" standards and guidelines have been developed. Regional standards apply to all BLM lands and programs, while regional guidelines still apply only to livestock grazing. BLM staff, in consultation with the California Desert District Advisory Council, developed the regional standards and guidelines. These standards and guidelines satisfy the requirements of BLM's strategic plan, comply with the fundamentals of rangeland health, and address each of the guiding principles as required by the grazing regulations (see Appendix B). The guidelines for grazing management address each of the guiding principles as well. At this time, there are no plans to develop guidelines for other activities.

While the definition and adoption of Standards and Guidelines applies specifically and only to BLM lands, the spirit of initiative would be reflected throughout the planning area in developing the strategic approach to managing species and habitats.

### Required Action on Grazing Leases

Standards and grazing management guidelines apply to grazing related portions of activity plans; terms and conditions of permits, leases, and other authorizations; and range improvement activities such as vegetation manipulation, fence construction, and development of water. For lands leased for grazing uses, the grazing regulations require the authorized officer to "take appropriate action" prior to the beginning of the next grazing season when standards or guidelines are not achieved and livestock grazing has been determined to be a significant factor in the failure to achieve the standard or comply with the guideline.



### Adoption of Standards and Guidelines

If the No Action alternative is adopted, the National Fallback Standards and Guidelines would be adopted for the California Desert District. If any one of the other three alternatives is selected, the Regional Standards and Guidelines would be adopted. This decision would amend the California Desert Conservation Area (CDCA) Plan so that only one set of standards and Guidelines would be adopted in the NECO planning area.

### Application of Standards in Land Use Planning

If Regional Standards of Public Land Health are adopted, they would be applied to all resources and uses of the public lands in the following manner:

- **Public Land Health Standards.** A single set of Public Land Health Standards would be applied in the NECO planning area and to all resources and uses. Standards have their foundation in the physical and biological laws of nature. These laws are consistent regardless of the resource or use.
- **Assessment of Public Land Health.** The health of public lands and resources would be assessed using the standards as the measurement of desired function.
- **Assessment Scale.** The health of public lands would be assessed on a landscape/watershed scale. While it may be useful and necessary to examine certain environmental components on a smaller scale, it is intended that the overall assessment of public land health be made at a landscape or watershed scale.
- **Health Determination.** Since Standards are statements of goals for physical and biological function, determinations would be based strictly on the result of resource assessments and be independent of the uses on the public land.
- **Resource Objectives.** Resource management objectives guide decisions made in land use and activity plans. In some cases, particularly where intensive land uses are allowed, resource management objectives could be met while the public land health determination may indicate non-conformance with the standards.
- **Causal factors.** Where Public Land Health assessments indicate that resource management objectives are not being met, a determination would be made as to the causes.
- **Action/Adaptive Management.** Where public land health does not conform to resource management objectives, appropriate action--including changes to land use or activity plans--would be initiated using existing regulatory authorities for each authorized activity. In the case of livestock grazing, the regulations require that the authorized officer "take appropriate action" prior to the beginning of the next grazing season when standards or guidelines are not achieved and livestock grazing has been determined to be a significant factor in the failure to achieve the standard or comply with the guideline.

### **Application of Standards in NEPA Analyses**

Analyses of resources and issues guided by standards would help NEPA review of projects. Consideration of standards should improve identification and analyses of:

- relevant resource conditions and ecosystem functions
- actions in terms of effects on resources and ecosystem functions
- the relationship of biological and physical resources and functions
- the most important resources and functions
- project design and mitigation
- cumulative effects
- short-term and long-term effects
- project compliance

#### **2.1.1 Goals and Objectives**

The goal of standards development is to meet or exceed the national policy for watersheds, ecological processes, water quality, and habitats. The goal of guidelines development is to meet national policy and the grazing regulations.

The objectives are to

- a. implement standards as directed by national policy and grazing regulations
- b. conform grazing activities to achieve standards

In summary, the No Action Alternative would implement National Fallback Standards, while the other alternatives would implement Regional Standards.

In the following sections, the No Action Alternative is discussed first, followed by the Proposed Plan Alternative. The other two action alternatives are identical to the Proposed Plan Amendment Alternative for this issue on standards and guidelines.

#### **2.1.2 No Action Alternative**

The No Action Alternative discusses the current management (CM) to be used in implementing National Fallback Standards under Objective a and current management under objective b to conform grazing activities.

##### **Objective a--Implement Standards**

**CM** Manage grazing activities under the National Fallback Standards:

**Soils**

Upland soils exhibit infiltration and permeability rates that are appropriate to the soil type, climate, and land form.

**Riparian/Wetland**

Riparian-wetland areas are in proper functioning condition.

**Stream Function**

Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and land form.

**Native Species**

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

**Objective b--Conform Grazing Activities**

**CM** Manage grazing activities under the following National Fallback guidelines:

- Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture, and stabilize soils.
- Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils.
- 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.
- 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 land form.
- 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.
- Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.
- 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.)
- Conservation of federal Threatened or Endangered, Proposed, Category 1 and 2 Candidate, and other Special Status species would be promoted by restoration and maintenance of their habitats.
- Native species are emphasized in the support of ecological function.
- Nonnative 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.

- 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 (the timing and duration of use periods would be determined by the authorized officer).
- Continuous, season-long, livestock use would be allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.
- Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.
- 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.
- Grazing on designated ephemeral (annual and perennial) rangeland would be allowed to occur only if reliable estimates of production have been made, an identified level of 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.

### 2.1.3 Proposed Plan

#### Objective a--Implement Standards

**Action** Manage all activities under the following regional standards of Public Land Health:

##### Soils

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, land form, 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.
- Hydrologic and nutrient functions maintained by permeability of soil and water infiltration are appropriate for precipitation.

##### Native Species

Healthy, productive, and diverse habitats for native species, including special status species (Federal T&E, federally proposed, federal candidates, BLM sensitive, or California State T&E, and CDD UPAs), are maintained in places of natural occurrence, as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes.

- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment.
- Plant communities are producing sufficient litter.
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations.
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.
- Alien and noxious plants and wildlife do not exceed acceptable levels.
- Appropriate natural disturbances are evident.
- Populations and their habitats are sufficiently distributed and healthy to prevent the need for new listing as special status species.

### **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 would adequately protect banks and dissipate 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 soil moisture characteristics are being maintained.
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species.
- Shading of stream courses and water sources for riparian dependent species is maintained.
- Stream is in balance with water and sediment being supplied by the watershed.
- Stream channel size and meander are appropriate for soils, geology, and landscape.
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

### **Water Quality**

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California state standards, as indicated by:

- The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.
- Standards are achieved for riparian, wetlands, and water bodies.

- Aquatic organisms and plants (e.g., macro-invertebrates, fish, algae, and plants) indicate support for beneficial uses.
- Monitoring results or other data that show water quality is meeting the standard.

For surface waters, the primary objectives are to (1) maintain the existing quality and beneficial uses of water, (2) protect waters where they are threatened (and livestock grazing activities are a contributing factor), and (3) restore waters where they are currently degraded (and livestock grazing activities are a contributing factor). Of particular importance are areas:

- where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act
- where aquatic habitat is present or has been present for federal threatened or endangered, candidate, and other special status species dependent on water resources
- in designated water resource sensitive areas such as riparian and wetland areas.

#### **Objective b--Conform grazing activities**

**Action** Manage grazing activities with the following Regional guidelines:

- Facilities would be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.
- 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.
- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, addits, and seeps) would be modified so PFC and resource objectives can be met, and incompatible projects would be modified to bring them into compliance. The BLM would consult, cooperate, and coordinate with affected interests and livestock producers prior to authorizing modification 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.
- Supplements would be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian wetland functions.
- Management practices would maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and land form.
- Grazing management practices would meet state and federal water quality standards. Impoundments (stock ponds) having a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting California drinking water standards per California State Water Resources Control Board Resolution Number 88-63.

- In the California Desert Conservation 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 used as a tool for restoration. Prescribed burns may be used as a management tool where fire is a natural part of the regime.
- In years when weather results in extraordinary conditions, seed germination, seedling establishment, and native plant species growth would be allowed by modifying grazing use.
- Grazing on designated ephemeral rangeland would be allowed only if reliable estimates of production have been made, an identified level of 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.
- During prolonged drought, range stocking would be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments would be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicate dry conditions are expected to continue.
- 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.
- Habitats would be restored, maintained, or enhanced to assist in the recovery of federally listed threatened and endangered species. Habitats of special status species including federally proposed, federal candidates, BLM sensitive, or California threatened or endangered species, would be restored, maintained or enhanced to promote their conservation.
- Grazing activities would support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.
- Experimental research efforts would be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.
- Livestock utilization limits of key perennial species would be as shown in Table 2-2 for the various range types.

**Table 2-2. Proposed Plan Grazing Guidelines for Range Types**

Range Type	Percent Use of Key Perennial Species	
	Poor - Fair Range Condition or Growing Season <sup>a</sup>	Good - Excellent Range Condition or Dormant Season <sup>a</sup>
Mojave/Sonoran Desert Scrub	25	40
Salt Desert Shrubland	25	35
Semidesert Grass and Shrubland	30	40
Sagebrush Grassland	30	40
Mountain Shrub land	30	40
Pinyon-Juniper Woodland	30	40

<sup>a</sup> 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 utilization levels.

Monitoring of grazing allotments resource conditions would be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting one of more standards, monitoring processes would be established (where none exist) to monitor indicators of health until the standard or resource objective has been attained. Livestock trail networks, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and would be considered during analysis of the assessment and monitoring process. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities (e.g., ACEC). In an area where a standard has not been met, the results from monitoring changes to grazing management required to meet standards would be reviewed annually. During the final phase of the assessment process, the Range Determination includes the schedule for the next assessment of resource conditions. To attain standards and resource objectives, the best science would be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups would be sought to collect prescribed monitoring data for indicators of each standard.

**2.1.4 Small DWMA--A Alternative**

**Objective a--Implement Standards**

**Ref** Same as Proposed Plan.

**Objective b--Conform grazing activities**

**Ref** Same as Proposed Plan.



**2.1.5 Small DWMA--B Alternative**

**Objective a--Implement Standards**

**Ref** Same as Proposed Plan.

**Objective b--Conform grazing activities**

**Ref** Same as Proposed Plan.

## 2.2 Issue: Recovery of the Desert Tortoise

The Desert Tortoise (*Gopherus agassizii*) was listed as a threatened species in 1990 under the Federal Endangered Species Act. In 1994 the U.S. Fish and Wildlife Service (USFWS) designated desert tortoise critical habitat and completed the *Desert Tortoise (Mojave Population) Recovery Plan*, which contains recommendations for protective action. This listing and need to provide for recovery affects several local, state, and federal agencies, each with differing mandates for conservation and protection of the tortoise.

### 2.2.1 Goals and Objectives

The overall goal of the desert tortoise conservation strategy in the planning area is to recover populations of the desert tortoise in the two NECO recovery units identified in the USFWS plan by meeting the criteria for recovery as specified in the plan. The criteria, detailed on page 43 of the *Desert Tortoise (Mojave Population) Recovery Plan*, are summarized as follows:

- There is an upward or stationary trend in population for at least 25 years.
- Sufficient habitat is managed intensively to ensure long-term tortoise population viability (given in the Recovery Plan as at least one area of 1,000-square miles (640,000 acres) in each recovery unit).
- Population lambda (see pages C31-C32) is at least 1.0, (i.e., death rate is equal to recruitment rate):
  - Land management commitment is sufficient to ensure long-term protection of tortoise populations and habitat.
  - Management is sufficient without the use of regulatory mechanisms in the Endangered Species Act.

The objectives are to

- a. Establish desert wildlife management areas (DWMAs) where viable desert tortoise populations can be maintained.
- b. Implement management actions within DWMAs to address conflicts with the goal.
- c. Acquire sufficient habitat within the DWMAs to ensure that management actions are effective in the DWMAs as a unit.
- d. Reduce tortoise direct mortality resulting from interspecific (e.g., raven predation) and intraspecific (e.g., disease) conflicts that likely result from human-induced changes in ecosystem processes.
- e. Mitigate effects on tortoise populations and habitat outside DWMAs to provide connectivity between DWMAs.

### Decisions and Policy Common to all Alternatives

Regardless of the alternative selected, public lands within the planning area would be managed in accordance with all applicable laws and regulations. In addition, current policies complete the overall desert tortoise

recovery strategy. Current policy and management guidance which are common to all alternatives include, but are not limited to, the following:

1. New surface disturbing projects include specific design features (see Appendix D, Desert Tortoise Mitigation Measures) to minimize potential impacts to desert tortoise and their habitat.
2. All mining and mineral activities are subject to mitigation and compensation requirements. Whenever feasible, existing pits would be utilized for sand and gravel operations.
3. In areas of high fire incidence or in years of heavy fuel loading, campfire closures are enforced.
4. Wildfire suppression occurs with the minimum surface disturbance practical in all habitats. Wildfires are suppressed using a mix of only the following methods in order to minimize habitat disturbance:
  - a. aerial attack,
  - b. crews using hand tools to create fire breaks,
  - c. mobile attack engines limited to public roads, designated open routes, and routes authorized for limited-use,
  - d. use of foam and/or fire retardant, and
  - e. earth-moving equipment or tracked vehicles (such as bulldozers) in critical situations to protect life, property, or high-value resource.
5. Post fire-suppression mitigation includes rehabilitation of firebreaks and other ground disturbances and obliteration of vehicle tracks sufficient to discourage future casual use. Hand tools are used for rehabilitation activities whenever feasible.
6. All major, new linear utilities are placed in existing, designated utility corridors consistent with the existing CDCA Plan Energy Production and Utility Element. To the extent feasible, existing routes are utilized to provide access for maintenance of new rights-of-way.
7. Existing wildlife guzzlers would be modified to minimize mortality to desert tortoises and other wildlife, and new guzzlers would incorporate appropriate design features to do the same.
8. Federal and state land managing and regulatory agencies would maintain a presence to enforce wildlife regulations, reduce illegal dumping, littering, arson, off-road vehicle travel, and vandalism, and otherwise identify problems and concerns in proposed DWMA's.
9. The BLM would cooperate with other groups and agencies to identify areas where uncontrolled dogs are causing desert tortoise mortality. In the event such a situation is discovered, BLM would encourage counties to adopt or enforce ordinances prohibiting uncontrolled dogs in those areas.

### **Planning for Area-Wide Decisions and Management Strategy**

Planning for area-wide decisions and management strategy common to the Proposed Plan and to Small DWMA Alternatives A and B includes the following:

1. A restoration performance bond would be required for projects that count against projects that would create a significant disturbance. The project proponent may be required to periodically maintain restoration work including repeat of initial work. Restoration work may include, but would be not limited to seeding, planting, surface preparation, treating weed species, fence repair and watering. For details on implementation of this measure, see Appendix E.
2. Restoration of areas disturbed by projects would vary from site to site by design, costs, and methods. Restoration would be guided by site planning and standard or experimental technologies as defined in publications and generally described in Appendix E.
3. Key segments of closed routes of travel (described in Appendix I) would be restored to meet two goals: (1) protection and enhancement of habitat and species, and (2) implement route closure decisions.
4. BLM will participate with other agencies in development and implementation of a region-wide desert tortoise public education program. The desert Information Resource Task Group Program Coordinator would coordinate the program under direction of the Desert Managers' Group. Until the new program is developed, implement the applicable elements of the public education program (Appendix F) presented in the California Statewide Desert Tortoise Management Policy.
5. Agencies would work with CalTrans to design and install separate, freestanding, interpretive kiosks with desert tortoise protection information at Interstate Highway rest areas (e.g., Sand Hills on I-8, Cactus City and Wiley's Well on I-10, and Fenner Valley on I-40).
6. A Northern and Eastern Colorado Desert Coordinated Management Plan Cooperator's Meeting would be held at least annually. The agenda would include a review of implementation actions in this plan, population trends as indicated by monitoring, progress in research actions, status of public education programs, and cumulative new surface disturbance. Each of the cooperating agencies--BLM, NPS, USMC, USFWS, CDFG--would have an official representative present at the meeting. Among these representatives, a meeting moderator selected would prepare an agenda and minutes and would ensure that an annual report would be assembled at least 10 days prior to the meeting. The general public, interest groups, and other agencies would be invited and would be given time on the agenda to comment on plan implementation. The managers may also establish a technical group to address elements such as monitoring and coordinated budget requests.
7. Public comment on critical issues would be solicited from the California Desert Advisory Council for actions on BLM lands and from the Joshua Tree National Park Commission for actions on Park lands. The NEPA process would be used to provide information to the public

and to solicit comments on proposed projects occurring on federally administered lands in the planning area.

8. The Managers Over-site Group would oversee activities of the Desert Tortoise Coordinator and would have approval for various tortoise technical procedures.
9. The Desert Managers Group would continue to provide strategic fiscal planning and would oversee activities of the Integrated Ecosystem Monitoring Coordinator, the Public Information Coordinator, and the Habitat Restoration Coordinator. The Desert Managers Group would address interagency relations in the planning area.
10. The BLM and USMC would develop an interagency agreement for management of the Chocolate Mountains Aerial Gunnery Range as required by the California Desert Protection Act (Title VIII).
11. The BLM will obtain, through consultation with USFWS under Section 7 of the Endangered Species Act, biological opinions covering the effects on listed species of the CDCA Plan as amended by the Proposed Plan. For the desert tortoise only, the BLM has proposed that for projects meeting the following criteria USFWS would prepare a "tiered biological opinion" under expedited consultation procedures. The criteria are as follows:
  - disturbs less than 100 acres of tortoise habitat
  - does not require an Environmental Impact Statement
  - does not require amendment of the CDCA Plan

The BLM would submit to USFWS a *Report on Proposed Action* (see Appendix D) for any qualifying project. The Report would include a description of the project, the location, and a list of standard mitigation measures to be applied. An environmental assessment, if any, would be attached to the Report. USFWS would respond within 30 days with an expedited biological opinion that would tier off of the CDCA Plan biological opinion. This project-specific, expedited biological opinion would address, at a minimum, (1) the relationship of the specific proposed action to the CDCA Plan, (2) an evaluation of the effects of the action with respect to recovery within the recovery unit, (3) an incidental take statement, and (4) reasonable and prudent measures and terms and conditions for the incidental take. Where unusual circumstances exist, the USFWS may prepare, at their discretion, a standard, non-expedited, non-tiered biological opinion.

NECO covers all federal lands in the planning area; however, the consultation and resulting biological opinion apply only to BLM's management. Subsequent to the completion of NECO, the USMC will develop a land use plan for natural resources for CMAGR that will adopt elements of NECO and obtain a biological opinion for its lands. CMAGR currently has a BO (issued 1996) that covers its operational activities. JTNP has a general management plan that complements NECO proposals; JTNP has obtained a biological opinion.

12. In working with local and state governments on land use authorizations within their jurisdictions, federal land management agencies would advocate the following with respect to reducing raven populations and their negative effects on the tortoise:
- reduce the availability of solid wastes at sanitary landfills,
  - reduce the availability of organic wastes (related to facilities and methods for trash service, dump stations, and composting practices) unrelated to landfills, and
  - reduce the availability of water (related to facilities and methods for sewage treatment, pool/pond design, and irrigation).
13. The Desert Managers Group and the NECO cooperators would hold a management review when the one percent surface disturbance limit has reached the halfway point on an individual tortoise recovery unit basis.

### **2.2.2 No Action Alternative**

#### **Objective a--Establish Desert Wildlife Management Areas**

##### *Northern Colorado Desert Recovery Unit*

- CM** Manage current Category I and II desert tortoise habitat (Map 2-3 Appendix A) according to the California Statewide Desert Tortoise Management Policy and current Multiple-Use Class designations (Map 2-2 Appendix A).

##### *Eastern Colorado Desert Recovery Unit*

- CM** Manage current Category I and II desert tortoise habitat (Map 2-2 Appendix A) according to the California Statewide Desert Tortoise Management Policy. Manage Chuckwalla Bench ACEC and Milpitas Wash HMP (Map 2-4 Appendix A) according to existing plans and MUC classes (Map 2-2 Appendix A).
- CM** Manage critical habitat on CMAGR with the current biological opinions.
- CM** Manage JTNP desert tortoise habitat according to JTNP's General Management Plan and with an emphasis on natural ecosystem management policies that provide adequate protection against potential habitat-altering activities.

#### **Objective b--Implement Management Actions within Category I and II Habitat**

##### *General Actions*

- CM** Proposed activities and projects which cause new surface disturbance are evaluated on a case-by-case basis.

- CM** Compensation for disturbance of public lands within Category I and II is required according to the California Statewide Policy. This formula requires compensation in a range between 4-6 acres compensation lands required for each 1 acre disturbed. Equivalent funds may be directed toward habitat enhancement or rehabilitation. All compensation would be directed to the recovery unit where the disturbance occurs. Compensation would be required for uses authorized to all entities.
- CM** Entry points to Areas of Critical Environmental Concern are signed and, in certain cases such as the Desert Lily Preserve, are fenced to protect sensitive habitats from impacts related to vehicular access.

***Grazing Management***

- CM** Management of the Chemehuevi Cattle Allotment (Map 2-5 Appendix A) would continue with current boundaries (which encompass 137,321 acres) and management practices.
- CM** Management of the Lazy Daisy Cattle Allotment (Map 2-5 Appendix A) would continue with current boundaries (which encompass 332,886 acres), forage allocation of 3,192 animal unit months (AUM), and management practices.
- CM** Cattle grazing would be permitted on ephemeral grazing authorizations as described in Appendix C.
- CM** Perennial plant utilization may not exceed 40 percent in any key area within desert tortoise habitat on the Lazy Daisy Allotment.
- CM** Table 2-3 indicates proposed range improvements.

**Table 2-3. Proposed Range Improvements for the No Action Alternative**

Allotment Name	Range Improvement	Quantity and Unit	Estimated Cost	Desert Tortoise Category
Chemehuevi	Fence	0.1 mile	\$1,000	III
	Water Site <sup>a</sup>	1 each	750	III
	Water Facility <sup>a</sup>	1 each	3,500	III
Lazy Daisy	Fence	5.5 miles	22,000	I
	Cattle-guard	1 each	3,760	I
	Water Site <sup>a</sup>	3 each	3,000	I
		1 each	1,000	III
	Water Facility <sup>a</sup>	4 miles of pipe	21,200	I
		4 each	4,000	I
		2 each	2,000	III
	Corrals	2 each	4,000	I
		1 each	2,000	III
<b>Total All Allotments</b>			<b>\$68,210</b>	

<sup>a</sup> Water sites include any water accessible to cattle, e.g., troughs, springs, and reservoirs. Water facilities include facilities associated with water sites such as windmills, water storage tanks, and pipeline.

***Vegetation Resources***

**CM** Permits for live vegetation harvest may be issued in non-wilderness areas after environmental review.

***Lands and Land-Use Authorizations***

**CM** Lands acquired through compensation or mitigation are classified Open for disposal or use, under the following authorities:

- Agricultural Land Laws (e.g., Desert Land Entry, Carey Act, Indian Allotment)
- Recreation and Public Purposes Act Lease or conveyance
- FLPMA Lease/Sale (exceptions may be considered for sale of hazardous material sites to potentially responsible parties)
- Airport Lease/Grant
- Non-protective withdrawals

***Transportation/Access***

**CM** Fencing of major highways and railroads is considered as mitigation when new construction projects are proposed.



- CM** Bridges and culverts are considered as mitigation when new construction projects are proposed.
- CM** Stopping, parking, and vehicle camping are allowed within 300 feet of a route except within sensitive areas (such as ACECs) where the limit would be 100 feet. Where a wilderness area is closer to a route than the indicated standard, stopping, parking and vehicle camping are allowed only to the wilderness boundary.
- Ref** See section 2.5, Issue: Designation of Routes of Travel for prescriptions relating to transportation and access.

***Recreation***

- CM** Use of firearms would be permitted and regulated according to state regulations and county ordinances.
- Ref** See section 2.5, Issue: Designation of Routes of Travel for prescriptions relating to recreation.

***Wild Horses and Burros***

- Ref** See section 2.4 Issue: Wild Horses and Burros for prescriptions relating to management of wild horses and burros.

**Objective c--Acquire Sufficient Habitat**

- CM** Federal agencies retain public lands within Category I, and exchanges in Category II habitat would be allowed only if an equivalent or greater amount of Category I or II habitat would be acquired in public ownership as a result of the exchange. Disposals through any methods may occur in Category III.
- Ref** See section 2.6, Issue: Land Ownership Pattern for federal land ownership management.

**Objective d--Reduce Tortoise Direct Mortality Due to Changes in Ecosystem Processes**

- CM** Raven management would be accomplished by evaluating projects on a case project by case basis and appropriate mitigation would be prescribed.

**Objective e--Mitigate Effects on Tortoise Populations Outside Category I and II Habitat**

- CM** Grazing within desert tortoise habitat but outside Category I and II habitat would be conducted under the terms and conditions of the 1994 biological opinions and the National Fallback Standards and Guidelines.

**Ref** Stopping, parking, and vehicle camping are allowed within 300 feet of a route except within sensitive areas (such as ACECs) where the limit would be 100 feet. Where a wilderness area is closer to a route than the indicated standard, stopping, parking and vehicle camping are allowed only to the wilderness boundary.

### 2.2.3 Proposed Plan

#### Objective a--Establish Desert Wildlife Management Areas

##### *Northern Colorado Desert Recovery Unit*

**Action** Designate the Chemehuevi DWMA an ACEC, as shown in Map 2-6 Appendix A to protect desert tortoise and significant natural resources including special status plant and animal species and natural communities; USFWS would modify desert tortoise critical habitat to coincide with the DWMA. This area encompasses about 874,843 acres and contains some exclusions to allow for existing and future development (i.e., freeway exits, towns). Table 2-4 shows the distribution of land ownership in this area for all alternatives considered.

**Table 2-4. Distribution of Land Ownership in the Chemehuevi DWMA**

Landowner	No Action Alternative (Category I, II)		Proposed Plan		Small DWMA Alternatives A and B	
	Acres	%	Acres	%	Acres	%
BLM	866,986	91	815,843	93	695,500	94
State Lands	23,782	3	25,193	3	20,230	3
Private/Other	59,271	6	33,807	4	25,710	3
<b>Total</b>	<b>950,039</b>	<b>100</b>	<b>874,843</b>	<b>100</b>	<b>741,440</b>	<b>100</b>

**Eastern Colorado Desert Recovery Unit**

**Action** Designate the Chuckwalla DWMA, an ACEC, as shown in Map 2-6 Appendix A to protect desert tortoise and significant natural resources including special status plant and animal species and natural communities; USFWS would modify desert tortoise critical habitat to coincide with the DWMA. This area encompasses about 820,077 acres covering lands managed by both BLM and CMAGR and contains some exclusions to allow for existing and future development (i.e., military targets, freeway exits, towns). Table 2-5 shows the distribution of land ownership in this area.

**Table 2-5. Distribution of Land Ownership in the Chuckwalla DWMA.**

Landowner	No Action Alternative (Category I, II and Critical Habitat in CMAGR)		Proposed Plan		Small DWMA Alternatives A and B	
	Acres	%	Acres	%	Acres	%
BLM	365,599	52	465,287	57	355,929	56
USMC	186,423	27	186,423	23	186,423	30
State Lands	14,146	2	19,882	2	13,958	2
Private/Other	129,170	19	147,093	18	74,392	12
<b>Total</b>	<b>695,338</b>	<b>100</b>	<b>818,685</b>	<b>100</b>	<b>630,702</b>	<b>100</b>

**Action** Designate JTNP as shown in Map 2-6 Appendix A as the Joshua Tree DWMA. The remainder of JTNP may be added to this DWMA through the West Mojave Coordinated Management Plan.

### **Objective b--Implement Management Actions within DWMA's**

#### *General Actions*

**Action** Delete Chuckwalla Bench ACEC and Milpitas Wash HMP which are captured inside the proposed Chuckwalla DWMA.

**Action** Re-designate all MUC M (Moderate Use) lands within the proposed DWMA's to MUC L (Limited Use) as shown on Map 2-7 Appendix A.

**Action** Designate proposed DWMA's as Category I Desert Tortoise Habitat.

**Action** Limit cumulative new surface disturbance on lands administered by federal agencies within any DWMA to 1 percent of the federal portion of the DWMA (Appendix G). The amount that may be disturbed would be proportional to the holding of the administering agency.

**Action** Compensation for disturbance of public lands within DWMA's would be required at a 5:1 ratio within desert tortoise habitat. Equivalent funds may be directed toward habitat enhancement or rehabilitation (only option for CMAGR). All compensation would be directed to the Recovery Unit where the disturbance occurs. Compensation would be required for uses authorized to all entities.

**Action** The periphery of DWMA's would be fenced, signed or patrolled to ensure that conflicts with adjacent land uses are controlled. Where there are open or limited routes of travel, fencing would not hinder access.

#### *Grazing Management*

**Action** Prescriptions (Appendix C) adapted from terms and conditions in the 1994 biological opinions would be added to the CDCA Plan Grazing Element as permanent requirements for cattle and sheep grazing in desert tortoise critical habitat and other tortoise habitat.

**Action** Perennial plant utilization may not exceed 40 percent in any key area.

**Action** For a grazing allotment partially within a DWMA, when ephemeral forage production is less than 230 pounds per acre, cattle shall be substantially removed from the DWMA from March 15 to June 15.

- a. In years of good winter precipitation and soil moisture presence, cattle may remain past March 15 in expectation of ephemeral forage production over 230 lbs./ac. If this level

of forage is not attained when weather conditions (e.g., warming of the soil) are appropriate, cattle must leave the DWMA until such time as 230 lbs./ac. ephemeral forage is achieved or June 15, whichever is earlier. This determination will be made based on the evaluation and judgement of the BLM authorized officer. If cattle must be removed, the operator will be given two weeks to remove them from the DWMA.

- b. In years of poor winter precipitation or absence of soil moisture, cattle must be removed from the DWMA by March 15 and remain out until such time as 230 lbs./ac. ephemeral forage is achieved or June 15, whichever is earlier.
- c. The term “substantially removed” recognizes that some cattle may wander into the area of seasonal closure despite the operator’s best efforts and regardless of management facilities (e.g., fences, water sources) that are in place.
- d. The grazing strategy will be developed within a year and implemented within two years of the Record of Decision. The strategy would be a written plan detailing the area of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management.

**Action** Ephemeral authorization would no longer be available for cattle use in the Lazy Daisy and Chemehuevi allotments. As a result, the Lazy Daisy “perennial/ephemeral” designation would be changed to “perennial only,” and the forage in Chemehuevi Allotment would be allocated to desert tortoise. In addition, temporary non-renewable use on Lazy Daisy Allotment within the DWMA would no longer be authorized.

**Action** Forage on 21,606 acres in that portion of the Lazy Daisy Cattle Allotment falling within the highest density of desert tortoise habitat would be allocated to desert tortoise. That area of the allotment would no longer be available for livestock use. (See Map 2-8 Appendix A).

**Action** The Lazy Daisy Allotment lessee may voluntarily relinquish all grazing use authorizations, thereby initiating a grazing decision to allocate all forage to desert tortoise and making the allotment no longer available for livestock use. All ownership of range improvements would be conveyed to BLM. The intent of this alternative would be to manage the DWMA for tortoise conservation, but grazing use would continue until the lessee desires to relinquish the lease.

**Action** All existing cattle guards would be modified to prevent entrapment of desert tortoises. New cattle guards would be designed to prevent entrapment of desert tortoise.

**Action** Table 2-6 indicates proposed range improvements to improve cattle distribution.

**Table 2-6. Proposed Range Improvements for the Proposed Plan**

Allotment Name	Proposed Range Improvement	Quantity and Unit	Estimated Cost, \$	Desert Tortoise Category/DWMA
Lazy Daisy	Fence	18 miles	72,000	DWMA
	Cattle guard	3 each	11,280	DWMA
	Water Site <sup>a</sup>	3 each	3,000	DWMA
		1 each	1,000	III
	Water Facility <sup>a</sup>	4 miles of pipe	21,200	DWMA
		4 each	4,000	DWMA
		2 each	2,000	III
	Corrals	2 each	4,000	DWMA
		1 each	2,000	III
<b>Total</b>			<b>\$120,480</b>	

<sup>a</sup> Water sites include any water accessible to cattle, e.g., troughs, springs, and reservoirs.  
Water facilities include facilities associated with water sites such as windmills, water storage tanks, and pipeline.

***Vegetation Resources***

**Action** Permits for live vegetation harvest may be issued after environmental review only within salvage areas where surface disturbance has been authorized.

***Lands and Land-Use Authorizations***

**Action** Lands acquired through compensation or mitigation would be classified as Closed to disposal and use, through the following authorities:

- Agricultural Land Laws (e.g., Desert Land Entry, Carey Act, Indian Allotment),
- Recreation and Public Purposes Act Lease or conveyance,
- FLPMA Lease/Sale (exceptions may be considered for sale of hazardous material sites to potentially responsible parties),
- Airport Lease/Grant, or
- Non-protective withdrawals .

***Transportation/Access***

**Action** Interstate Highways 40 and 10 would be fenced by CalTrans along their common boundaries with DWMA's to preclude tortoise mortality and limit other wildlife mortality. In addition State Highway 95 would be fenced by CalTrans in that section of the Chemehuevi DWMA in which the tortoise population density is >50 tortoises per square mile. On Highway 95, the fence would be installed only when highway upgrade occurs (washes are spanned with

bridges and culverts to complement the fencing). Everywhere that fencing would be installed, it would be placed on both sides of highways. Fencing would meet standard design and installation specifications. Placement of fencing would not affect driving on connecting or nearby routes designated "open" or "limited." Fencing would be installed in sections of varying lengths according to routine highway maintenance cycles. Map 2-9 Appendix A show the locations of fencing, and Table 2-7 presents the locations, amounts, and costs of fencing.

**Action** Bridges and culverts for animal passage would be required for new linear projects, such as roads and railroads.

**Action** Portions of DWMA's are designated as "washes closed zones" wherein vehicle use would be restricted to specific routes, including navigable washes, that are individually designated "open" or "limited" (Map 2-10 Appendix A).

**Action** Stopping, parking, and vehicle camping are allowed no more than 100 feet from the *centerline* of an approved route of travel within DWMA's. Where wilderness areas would be closer to an approved route than the indicated standard, stopping, parking, and vehicle camping are allowed only to the boundary.

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management transportation and access, which includes definitions of terms related to routes and washes.

#### ***Recreation***

**Action** Use of firearms would be permitted and regulated according to state and county ordinances.

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management prescriptions relating to recreation.

#### ***Wild Horses and Burros***

**Ref** See section 2.4, Issue: Wild Horses and Burros for management prescriptions related wild horses and burros.

### **Objective c--Acquire Sufficient Habitat**

**Action** Federal agencies would retain public lands within DWMA's and Category I Habitat.

**Ref** See section 2.6, Issue: Land Ownership Pattern for acquisition management.

**Objective d--Reduce Tortoise Direct Mortality Due to Changes in Ecosystem Processes**

**Action** Remove ravens that are known to prey on tortoises through selective shooting, poisoning, or trapping where there is evidence of raven predation in or within 1 mile of tortoise habitat.

**Action** Proposed projects on federal lands anywhere in the planning area which have a potential for increasing raven populations would be reviewed for design and operations features and would require mitigation measures to reduce or eliminate the opportunity for proliferation of ravens.

**Ref** Highway road kills as a raven food source would be reduced by fencing Interstate and state highways to limit animal access.

**Objective e--Mitigate effects on Tortoise Populations outside DWMA**

**Action** All existing Desert Tortoise Category I, II or III outside of DWMA boundaries would be converted to and managed as Category III habitat.

**Action** Grazing within desert tortoise habitat would be conducted under the livestock grazing prescriptions presented in Appendix C and the regional standards and guidelines.

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designations/Recreation. The "300-foot rule" for stopping, parking, and vehicle camping applied and is modified to reflect that the standard would be measured from the *centerline* of a route outside DWMA. Where a wilderness area is closer to a route than the indicated standard, stopping, parking, and vehicle camping are allowed only to the wilderness boundary.



**Table 2-7. Length and Estimated Costs of Proposed Fencing**

Highway or Railroad	Fencing for Both Sides of the Highway, Roads, or Railroads, in miles		
	Proposed Plan	Small DWMA-- A Alternative	Small DWMA-- B Alternative
<b>Chemehuevi DWMA</b>			
Interstate 40	68	40	18
Highway 95	28	46	28
Historic Routes 66	0	75	
Havasu Road	0	12	
Ward Valley	0	80	
ATSF Railroad	0	40	
<b>Subtotal</b>	<b>96</b>	<b>293</b>	<b>46</b>
<b>Chuckwalla DWMA</b>			
Interstate 10	112	102	12
Box Canyon Road	0	8	
Wiley Well / Milpitas Road	0	70	
Bradshaw Road	0	104	
<b>Subtotal</b>	<b>112</b>	<b>302</b>	<b>12</b>
<b>Joshua Tree DWMA</b>			
Cottonwood Road	0	60	0
<b>Total all DWMA's</b>	<b>208</b>	<b>637</b>	<b>58</b>
Estimated cost @ \$10/ft	\$10.9 million	\$33.6 million	\$3.0 million

#### 2.2.4 Small DWMA--A Alternative

##### Objective a--Establish Desert Wildlife Management Areas

###### *Northern Colorado Desert Recovery Unit*

**Action** Designate the Chemehuevi DWMA an ACEC, as shown in Map 2-11 Appendix A, to protect desert tortoise and significant natural resources including special status plant and animal species and natural communities; USFWS would modify desert tortoise critical habitat to coincide with the DWMA. This area encompasses about 741,440 acres and contains some exclusions to allow for existing and future development. This alternative DWMA was designed to minimize conflicts between tortoise habitat protection and grazing.

###### *Eastern Colorado Desert Recovery Unit*

**Action** Designate the Chuckwalla DWMA an ACEC, as shown in Map 2-11 Appendix A, to protect desert tortoise and significant natural resources including special status plant and animal species and natural communities; USFWS would modify desert tortoise critical habitat to coincide with the DWMA. This area encompasses about 632,094 acres covering land managed by both BLM and CMAGR and contains some exclusions to allow for existing and future development (e.g., military targets, freeway exits, towns). This alternative DWMA was designed to minimize conflicts between tortoise habitat protection and recreation, hunting, and high proportion of private land with many owners.

**Action** Designate JTNP as shown in Map 2-11 Appendix A as the Joshua Tree DWMA. The remainder of JTNP may be added to this DWMA through the West Mojave Coordinated Management Plan.

##### Objective b--Implement Management Actions within DWMA

###### *General Actions*

**Action** Delete the Chuckwalla Bench ACEC which is incorporated in the Chuckwalla DWMA.

**Action** Designate all Multiple-Use Class M (Moderate Use) lands in the proposed DWMA as Multiple-Use Class L (Limited Use) as shown on Map 2-12 Appendix A.

**Action** Designate DWMA as Category I Desert Tortoise Habitat.

**Action** There would be no threshold on new surface disturbance.

**Action** Compensation for disturbance of public lands within DWMA would be required according to the California Statewide Policy (for Category I). This formula would require compensation in range between 4-6 acres compensation lands required for each 1 acre

disturbed. Equivalent funds may be directed toward habitat enhancement or rehabilitation. All compensation would be directed to the Recovery Unit where the disturbance occurs. Compensation would be required for uses authorized to all entities.

**Action** The periphery of DWMA's would be fenced where there are conflicts with adjacent land uses and access cannot be otherwise controlled. Where there are open or limited routes of travel, fencing would not hinder access.

### *Grazing Management*

**Action** Ephemeral authorization would no longer be available for cattle use in the Chemehuevi Allotment. Forage would be allocated to the desert tortoise.

**Action** Forage on 140,357 acres in that portion of the Lazy Daisy Allotment within the boundaries of the proposed Chemehuevi DWMA would be allocated to the desert tortoise. That area of the allotment would no longer be available for cattle use. This would allow grazing use on 192,529 acres, and forage quantity would be set at 2,554 AUMs (Map 2-13 Appendix A).

**Action** Prescriptions adapted from terms and conditions in the 1994 biological opinions (Appendix C) would be added to the CDCA Plan Grazing Element as permanent requirements for cattle and sheep grazing in desert tortoise critical habitat and other tortoise habitat.

**Action** All existing cattle guards would be modified to prevent entrapment of desert tortoises. New cattle guards would be designed to prevent entrapment of desert tortoises.

**Action** Table 2-8 indicates proposed range improvements necessary to improve cattle distribution and to substantially remove cattle from the DWMA.

**Table 2-8. Proposed Range Improvements for the Small DWMA--A Alternative**

Allotment Name	Proposed Range Improvement	Quantity and Unit	Estimated Cost, \$	Desert Tortoise Category
Lazy Daisy	Fence	61.5 miles	246,000	I
	Cattle-guard	7 each	26,320	I
	Water Site <sup>a</sup>	3 each	3,000	I
		1 each	1,000	Non-category
	Water Facility <sup>a</sup>	4 miles of pipe	21,200	I
		4 each	4,000	I
		2 each	2,000	Non-category
	Corrals	2 each	4,000	I
		1 each	2,000	Non-category
<b>Total All Allotments</b>			<b>\$309,520</b>	

<sup>a</sup> Water sites include any water accessible to cattle i.e., troughs, springs, and reservoirs.  
Water facilities include facilities associated with water sites such as windmills, water storage tanks, and pipeline.

***Vegetation Resources***

**Ref** Same as the Proposed Plan.

***Lands and Land-Use Authorizations***

**Ref** Same as the Proposed Plan.

***Transportation/Access***

**Action** Portions of several interstate highways, state highways, maintained roads, and railroads in and adjacent to DWMA's would be fenced as recommended in the *Desert Tortoise Recovery Plan* to preclude tortoise mortality and limit other wildlife mortality. The work would be accomplished by various agencies and utility companies which have the operation and maintenance responsibilities for the indicated road/railroad. For highways scheduled to be elevated over washes, fences would be installed when highway upgrades occur. Installation along highways and roads which would never be elevated over washes may require design solutions which result in "leaky" fences and may incompletely reduce highway/road mortality. Where fencing would be installed, it would be placed on both sides of highways/roads. Fencing would meet standard design and installation specifications. Placement of fencing would not affect driving on connecting or nearby routes designated "open" or "limited." Fencing would be installed in sections of varying lengths according to routine highway maintenance cycles. Map 2-14 Appendix A and Table 2-7 show the locations, amounts, and costs of fencing.

**Action** Bridges and culverts for animal passage would be required for new linear projects, such as roads and railroads. Existing linear projects would be retrofitted with bridges and culverts.

**Action** All DWMA's are designated as "washed closed zones" wherein vehicle use would be restricted to specific routes, including navigable washes designated "open" or "limited."

**Action** Stopping and parking are allowed no more than 30 feet from the *centerline* of an approved route of travel within DWMA's. Vehicle camping would be allowed only in designated area. Where a wilderness area would be closer to an approved route than the indicated standard, stopping, parking, and vehicle camping are allowed only to the boundary.

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management of transportation and access.

**Recreation**

**Action** Discharge of firearms would not be allowed in DWMA's except for hunting of game between September 1 and March 1.

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management prescriptions related to recreation.

**Wild Horses and Burros**

**Ref** See section 2.4, Issue: Wild Horses and Burros for management prescriptions related to wild horses and burros.

**Objective c--Acquire Sufficient Habitat**

**Action** Federal agencies would retain public lands within DWMA's.

**Ref** See section 2.6, Issue: Land Ownership Pattern for acquisition management.

**Objective d--Reduce Tortoise Direct Mortality Due to Changes in Ecosystem Processes**

**Ref** Same as Proposed Plan with the following exception:

**Action** Ravens that are known to prey on tortoises may be removed through non-lethal means, only.

**Objective e--Mitigate effects on Tortoise Populations outside DWMA's**

**Ref** Same as the Proposed Plan.

### 2.2.5 Small DWMA--B Alternative

#### Objective a--Establish Desert Wildlife Management Areas

##### *Northern Colorado Desert Recovery Unit*

**Ref** Same as Small DWMA A Alternative.

##### *Eastern Colorado Desert Recovery Unit*

**Ref** Same as Small DWMA A Alternative.

#### Objective b--Implement Management Actions within DWMA's

##### *General Actions*

**Action** Delete the Chuckwalla Bench ACEC, which is incorporated in the Chuckwalla DWMA (Map 2-4 Appendix A).

**Action** Designate all Multiple-Use Class M (Moderate Use) in the proposed DWMA's as Multiple-Use Class L (Limited Use) as shown on Map 2-12 Appendix A.

**Action** Designate proposed DWMA's as Category I Desert Tortoise Habitat.

**Action** Limit cumulative new surface disturbance on lands administered by federal agencies within any DWMA to 3 percent of the federal portion of the DWMA (Appendix G). The amount that may be disturbed would be proportional to the holding of the administering agency. For projects over 40 acres, a restoration performance bond may be required for projects that count against the 3% DWMA disturbance limit. This may require the project proponent to periodically maintain restoration work including repeat of initial work. Work may include, but is not limited to: seeding/planting, surface preparation, mowing weed species, fence repair, watering, and road closure. For details on implementation of this measure, see Appendix D.

**Action** Compensation for disturbance of public lands within DWMA's would be required according to the California Statewide Policy (for Category I). This formula would require compensation in range between 4-6 acres compensation lands required for each 1 acre disturbed. Equivalent funds may be directed toward habitat enhancement or rehabilitation. All compensation would be directed to the Recovery Unit where the disturbance occurs. Compensation would be required for uses authorized to all entities.

**Action** Boundaries of DWMA's would not be fenced when there are conflicts with uses.

*Grazing Management*

**Action** Forage on 140,357 acres in that portion of the Lazy Daisy Allotment within the boundaries of the proposed Chemehuevi DWMA would be allocated to the desert tortoise. That area of the allotment would no longer be available for cattle use. This would allow grazing use on 192,529 acres. Forage quantity will be set at 2,554 AUMs (Map 2-15 Appendix A).

**Action** Forage on 36,480 acres in that portion of the Chemehuevi Allotment falling within the highest density of desert tortoise-habitat would be allocated to the desert tortoise. That area of the allotment would no longer be available for cattle use. This would allow grazing use on 100,841 acres (Map 2-15 Appendix A).

**Action** The Chemehuevi Allotment Lessee may voluntarily relinquish all grazing use authorizations, thereby initiating a grazing decision to allocate all forage to desert tortoise and making the allotment no longer available for livestock use. All ownership of range improvements would be conveyed to BLM. The intent of this alternative would be to manage the DWMA for tortoise conservation, but grazing use would continue until the lessee desires to relinquish the lease

**Action** Prescriptions adapted from terms and conditions in the 1994 biological opinions (Appendix C) would be added to the CDCA Plan Grazing Element as permanent requirements for cattle and sheep grazing in desert tortoise critical habitat and other tortoise habitat.

**Action** All existing cattle-guards would be modified to prevent entrapment of desert tortoises. New cattle-guards would be designed to prevent entrapment of desert tortoises.

**Action** Table 2-9 indicates anticipated range improvements proposed to improve cattle distribution.

**Table 2-9. Proposed Range Improvements for the Small DWMA--B Alternative**

Allotment Name	Proposed Range Improvement	Quantity and Unit	Estimated Cost, \$	Desert Tortoise Category/DWMA
Chemehuevi	Fence	15 miles	60,000	DWMA
	Cattle-guard	3 each	11,280	III
	Water Site <sup>a</sup>	1 each	750	III
	Water Facility <sup>a</sup>	1 each	3,500	
Lazy Daisy	Fence	5.5 miles	22,000	I
	Cattle-guard	1 each	3,760	I
	Water Site <sup>a</sup>	3 each	3,000	I
		1 each	1,000	Non-category
	Water Facility <sup>a</sup>	4 miles of pipe	21,200	I
		4 each	4,000	I
		2 each	2,000	Non-category
	Corrals	2 each	4,000	I
		1 each	2,000	Non-category
<b>Total All Allotments</b>			<b>\$138,490</b>	

<sup>a</sup> Water sites include any water accessible to cattle i.e., troughs, springs, and reservoirs.  
Water facilities include facilities associated with water sites such as windmills, water storage tanks, and pipeline.

***Vegetation Resources***

**Action** Permits for live vegetation harvest may be issued either after environmental review for creosote bush stems or for any plant within salvage areas where surface disturbance has been authorized.

***Lands and Land-Use Authorizations***

**Ref** Same as Small DWMA--A Alternative.

***Transportation/Access***

**Action** Portions of Interstate Highways 40 and 10 and State Highway 95 would be fenced by CalTrans along their common boundaries with DWMA's to preclude tortoise mortality and limit other wildlife mortality. Because of the high cost involved, fencing would be installed only where two criteria are met: (1) highways have more than 1,000 vehicles per day, and (2) the adjacent tortoise population is >50 per square mile. State Highway 95 fencing would be installed only when highway upgrades occur (washes are spanned with bridges and culverts to complement the fencing). Where fencing would be installed, it would be placed on both sides of highways. Fencing would meet standard design and installation



specifications. Placement of fencing would not affect driving on connecting or nearby routes designated “open” or “limited”. Fencing would be installed in sections of varying lengths according to routine highway maintenance cycles. Map 2-16 Appendix A and Table 2-7 show the locations, amounts, and costs of fencing.

**Action** Bridges and culverts for animal passage would be required for new linear projects, such as roads and railroads.

**Action** All DWMA's are designated as “washed closed zones” wherein vehicle use would be restricted to specific routes, including navigable washes that are individually designated “open” or “limited” (same as Small DWMA--A Alternative).

**Action** Stopping, parking, and vehicle camping are allowed no more than 300 feet from the *centerline* of an approved route of travel within DWMA's. Where a wilderness area is closer to a route than the indicated standard, stopping, parking, and vehicle camping are allowed only to the wilderness boundary.

**Ref** See section 2.5 Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management of transportation and access.

#### ***Recreation***

**Action** Discharge of firearms will not be allowed in DWMA's except for hunting of game between September 1 and March 1 (Same as Small DWMA--A Alternative).

**Ref** See section 2.5, Issue: Motorized-Vehicle Access/Routes of Travel Designation/Recreation for management of recreation.

#### ***Wild Horses and Burros***

**Ref** See section 2.4, Issue: Wild Horses and Burros for management prescriptions related to wild horses and burros.

#### **Objective c--Acquire Sufficient Habitat**

**Action** BLM may dispose of public lands within a DWMA (outside of wilderness areas) if it augments the overall management strategy.

**Ref** See section 2.6 Issue: Land Ownership Pattern for land acquisition management.

#### **Objective d--Reduce Tortoise Direct Mortality Due to Changes in Ecosystem Processes**

**Ref** Same as Small DWMA A Alternative with the following exception:

**Action** Ravens known to prey on desert tortoises may be removed through non-lethal measures only.

**Objective e--Management Actions Outside DWMA**

**Ref** Same as Small DWMA A Alternative.

## 2.3 Issue: Management of Special Status Animals and Plants and Natural Communities

This section is organized into three parts.

1. **Bighorn Sheep** are addressed separately because wildlife habitat management areas (WHMAs) are proposed which are particular to the bighorn sheep's complex geographic occurrence or metapopulation and needs.
2. **Desert Mule Deer** are addressed separately because their management is related to the aesthetic, education, and recreational uses rather than conservation as a special status species.
3. **Other Special Status Animals and Plants and Natural Communities** are grouped together into a proposed common set of WHMAs that are different than those proposed for bighorn sheep.

### 2.3.1 Desert Bighorn Sheep Conservation--Goals and Objectives

The overall goal of the desert bighorn sheep conservation strategy in the planning area is to ensure the long-term viability of the Sonoran Desert Bighorn Sheep Metapopulation and the Southern Mojave Desert Bighorn Sheep Metapopulation. To achieve this goal, the following sub-goals have been identified:

- maintain genetic variation in each metapopulation by conserving and enhancing individual bighorn sheep demes (subpopulations)
- maintain genetic variation in and viability of individual demes by improving or increasing usable habitat and by augmenting populations
- maintain habitat connectivity within and between demes

The objectives are to:

- a. identify and protect essential habitat for bighorn sheep (i.e., that habitat providing forage, water, cover, and space, including movement corridors, necessary for maintenance of a viable metapopulation),
- b. maintain, improve, and restore habitat quality within essential habitat, and
- c. reestablish lost demes or augment demes with less than 50 individuals by transplanting bighorn sheep as required.

### Desert Bighorn Sheep Strategy

The bighorn sheep populations within the Northern and Eastern Colorado Desert planning area would be managed as two metapopulations--the "Sonoran Desert Bighorn Sheep Metapopulation" and the "Southern Mojave Desert Bighorn Sheep Metapopulation"--through decisions made in this plan and more specific plans for these two meta-populations that the California Department of Fish and Game (CDFG) is developing (Map 2-17 Appendix A). The CDFG plans would contain considerably more detail and site-specific proposals. All objectives and actions that follow apply to both metapopulations unless specified otherwise. Most of the actions were taken from a draft management plan prepared by CDFG for the Sonoran Desert Bighorn Sheep

Metapopulation. Work on the Southern Mojave plan has not yet begun. At least one alternative in each action set implements BLM's Fish and Wildlife 2000 Plan entitled *Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska*.

### **Decisions and Policy Common to all Alternatives**

1. Federal agencies would not dispose of National Park lands, military lands, and wilderness lands within the planning area.
2. When sufficient numbers of bighorn sheep are available, demes that contain less than 50 adults and have sufficient habitat to support more than 50 adults would be augmented. At current population levels, these demes (Map 2-17 Appendix A) include the following:

#### **Sonoran Bighorn Sheep Metapopulation WHMA**

Chuckwalla Mountains  
Little Mule Mountains

#### **Southern Mojave Bighorn Metapopulation WHMA**

Coxcomb Mountains  
Granite Mountains  
Iron Mountains  
Palen Mountains

CDFG would complete applicable meta-population plans and prepare capture and relocation plans for each augmentation and would coordinate and direct operations. Approval of the BLM State Director and/ or NPS Superintendent would be required before augmentation.

3. CDFG would provide regulations, permitting systems, law enforcement, and other agency action to support a sport hunting program where sustainable and where consistent with metapopulation management goals. Hunting would be permitted on BLM-administered lands, but would not be permitted in JTNP or CMAGR.
4. CDFG would continue to construct, improve, and maintain new and existing natural and artificial water sources, including exclosures where required. CDFG would coordinate such work through other agencies and volunteer groups according to CDFG standards and MOUs with BLM and CMAGR on land managed by BLM and CMAGR. BLM and USMC, for their respective lands, would consult with USFWS for proposed projects in desert tortoise habitat.
5. Public comment on critical issues would be solicited from established advisory councils.
6. The Desert Managers Group would address interagency relations in the planning area.

7. The BLM and CDFG would coordinate all wildlife management activities in BLM wilderness areas under the MOU on "Wildlife Management Activities in Wilderness" signed in 1997.
8. Barriers to bighorn sheep movement within demes and between demes would be limited to the extent possible. Installation of new roads, fences, and other linear projects would be mitigated to consider passage of bighorn sheep.
9. BLM Park rangers and CDFG wardens would continue to inform public land visitors where appropriate about bighorn sheep conservation issues.

### **Planning Area-wide Decisions and Management Strategy Common to All Alternatives**

1. CDFG, BLM, and NPS would jointly develop a public education plan. Educational materials might include brochures, posters, interpretive displays, and signs. The BLM's Santa Rosa Mountains Visitor Center and the JTNP Visitor Center would be primary contact points for public education for the planning area. Interpretive programs at the Big Morongo Reserve, Thousand Palms Preserve, Dos Palmas Reserve, BLM Information/Field Office Centers and National Parks would include information on desert bighorn sheep.
2. Plan implementation and other activities would be coordinated through the annual Northern and Eastern Colorado Desert Coordinated Management Plan Cooperator's Meeting.
3. The BLM and USMC would develop an interagency agreement for management of the Chocolate Mountains Aerial Gunnery Range as required by the California Desert Protection Act.
4. Artificial waters proposed for construction in any given year would (1) be submitted by June 1 and considered as a group, by metapopulation, for both bighorn sheep and deer; and (2) be supported by two levels of monitoring--population trends, and impact trends to tortoise or other special status species. The latter should include both direct monitoring (water hazards) and indirect monitoring (population dynamics/ecosystem changes).

**Note:** Any waters built on private land in the area of overlap between the NECO and Coachella Valley Plans is outside the scope of NECO and would have to meet conditions articulated in the Coachella Valley MSCP. NECO only addresses needs south of I-10, and artificial waters would generally be approved conditional to indicated NEPA and monitoring support. The array of waters proposed is subject to change depending upon the gathering of additional information and conduct of the monitoring program. Regardless of the number of waters installed, at such time as monitoring indicates the total number of waters is adequate for bighorn sheep/deer goals, or NEPA review indicates it is creating local or landscape scale impact, the cooperating agencies would consider ending the installation program.

5. Enclosures would protect waters from burros to varying degrees in alternatives; however, no specific numbers are proposed in this plan. At such time as they are proposed, full NEPA review

would be conducted. All or the bulk of such consideration would occur in the course of developing herd management area plans (see section 2.4).

### 2.3.1.1 No Action Alternative

#### Objective a--Identify and Protect Essential Habitat

- CM** Continue implementation of current desert bighorn HMPs (Marble Mountains, Whipple Mountains, Sheep Hole Mountains, Chuckwalla Mountains, and Orocopia Mountains) as shown on Map 2-4 Appendix A.
- CM** Continue management of the Ford Dry Lake and Rice Valley domestic sheep allotments with current boundaries (49,682 and 85,565 acres, respectively) and grazing prescriptions (Map 2-5 Appendix A).
- Ref** See section 2.6, Issue: Land Ownership Pattern for acquisition management.

#### Objective b--Maintain, Improve, and Restore Habitat Quality

- CM** Proposals for new water developments would be considered on a case-by-case basis. Design, construction, and maintenance information is provided in Appendix M.
- Ref** See section 2.4, Issue: Management of Wild Horses and Burros for management of burros inside bighorn sheep range.

#### Objective c--Reestablish Demes

- CM** Proposals to reestablish lost demes on BLM lands are addressed on as case-by-case basis and require an HMP and State Director approval.

### 2.3.1.2 Proposed Plan

#### Objective a--Identify and Protect Essential Habitat

- Action** Designate Wildlife Habitat Management Area (WHMA) for both the Sonoran Desert Bighorn Sheep Metapopulation and the Southern Mojave Desert Bighorn Sheep Metapopulation as shown on Map 2-18 Appendix A.
- Action** Delete Herd Management Areas Plans for Marble Mountains, Whipple Mountains, Sheep Hole Mountains, Chuckwalla Mountains, and Orocopia Mountains (Map 2-4 Appendix A), all of which are captured inside the WHMAs.
- Action** Change the Multiple Use Class designation in the Eagle Mountains area on 20,600 acres of current MUC I (Intensive Use) to MUC L (Limited Use) (18,000 acres) and MUC

Unclassified (2,600 acres). The rationale for this change includes: (1) MUC L more appropriately supports the management goals and objectives for bighorn sheep while still allowing for the extraction of minerals; (2) MUC I supported open pit mining of iron which terminated over a decade ago, including the dismantling of the associated milling facility; (3) mineral market conditions are such that remaining mineral potential (mostly iron and gold) is currently uneconomical; and (4) gold deposits are in the form of veins, the extraction of which would most likely not involve the open pit methods. This applies to public lands only. See Map 2-7 Appendix A.

**Action** Fence potential hazards to bighorn sheep (e.g., canals, pitfalls) with substantial fencing materials (e.g., chainlink).

**Action** Ford Dry Lake sheep allotment (49,682 acres) would no longer be available for domestic sheep use because it is less than 9 miles from occupied bighorn range in the Palen Mountains.<sup>1</sup>

**Action** About 9,254 acres in the southern portion of the Rice Valley sheep allotment would no longer be available for domestic sheep use because it is less than 9 miles from occupied bighorn range in the Granite and Palen Mountains<sup>1</sup> (Map 2-15, Appendix A).

**Action** In areas managed for any combination of burros, deer, and bighorn sheep, natural waters would be allocated to each species on an equal shares basis. Such allocations would improve the opportunity of achieving viable populations of each species, prevent over-utilization of both forage and water by burros, reduce conflicts from contact, and improve the efficiency of gathering burros. This allocation addresses only the indicated species and does not mean fundamental exclusion of other elements of the ecosystem. Allocations would be achieved through installation of exclosures that allow access to waters for deer and bighorn sheep and prevent access to burros. However, a specific fencing proposal is not addressed in this plan but is deferred until the number of burros reaches appropriate management level and a monitoring base has been established to include such information as animal numbers and water and forage usage. Design, construction, and maintenance information for typical exclosures is provided in Appendix M.

**Ref** See section 2.5, Issue: Designation of Routes of Travel for description of route closures.

**Ref** See section 2.6, Issue: Land Ownership Pattern for description of land acquisition management.

**Ref** See section 2.2, Issue: Recovery of the Desert Tortoise for prescriptions relating to reduction of surface disturbance which cover parts of bighorn sheep range.

---

<sup>1</sup> BLM guidelines given in Appendix C of the BLM's *Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska* (see Appendix J) require a 9-mile buffer zone between bighorn sheep and domestic sheep unless there is a significant barrier to physical contact.

**Ref** See section 2.2, Issue: Recovery of the Desert Tortoise for terms and conditions for domestic sheep grazing.

**Objective b--Maintain, Improve, and Restore Habitat Quality**

**Action** New water developments would be constructed to expand usable habitat for bighorn sheep. Some existing artificial water sources would be removed over time as they age and otherwise become non-functional or inefficient. These would include all nine windmills (which are no longer functional) and some pipe-tank facilities which are old, high maintenance, have too little storage capacity, and are redundant to proposed new facilities. An unspecified number of those to be removed are located in wilderness areas. Map 2-19 Appendix A shows 87 prospective new water development areas in the Sonoran Bighorn Sheep WHMA as identified by CDFG with the assistance of bighorn conservation groups. Of these 87 prospective sites, 75 would be authorized through this action with application of appropriate siting NEPA review. There are 51 sites common to both deer and bighorn sheep. Design, construction, and maintenance information is provided in Appendix M. Proposed sites have been generally mapped. Twenty-two of the proposed sites are in wilderness areas. Ten of those twenty-two sites would be authorized at this time as noted above and as shown in Table M-1 of Appendix M. The remaining 12 waters in wilderness areas that would not be authorized at this time may be authorized at a later time without further amendment but must be supported with additional biological justification (e.g., the completion of the Sonoran Meta-Population Plan being developed by CDFG) and site-specific NEPA analysis.

**Ref** See section 2.4, Issue: Management of Wild Horses and Burros for management of burros inside bighorn sheep range.

**Objective c--Reestablish Demes**

**Action** After burro and domestic sheep conflicts are resolved and when sufficient numbers of bighorn sheep are available, reestablish the following lost demes (Maps 2-17 and 2-18 Appendix A) in the Sonoran Bighorn Sheep Metapopulation WHMA:

Cargo Muchacho Mountains  
Mule Mountains  
Palo Verde Mountains

CDFG would prepare a capture and relocation plan for each reestablishment and would coordinate and direct operations. Approval of the BLM State Director would be required prior to reestablishment.



### 2.3.1.3 Small DWMA--A Alternative

#### Objective a--Identify and Protect Essential Habitat

**Action** Designate Wildlife Habitat Management Areas (WHMA) of essential habitat for the Sonoran Desert Bighorn Sheep Metapopulation and the Southern Mojave Desert Bighorn Sheep Metapopulation as shown on Map 2-18 Appendix A.

**Action** Delete HMPs for Marble Mountains, Whipple Mountains, Sheep Hole Mountains, Chuckwalla Mountains, and Orocopia Mountains (Map 2-4 Appendix A), which are all captured inside WHMAs.

**Action** Change the Multiple Use Class designation in the Eagle Mountains area on 20,600 acres of current MUC I (Intensive Use) to MUC L (Limited Use) (18,000 acres) and MUC Unclassified (2,600 acres). The rationale for this change is (1) MUC L more appropriately supports the management goals and objectives for bighorn sheep while still allowing for the extraction of minerals; (2) MUC I supported open pit mining of iron which terminated over a decade ago, including the dismantling of the associated milling facility; (3) mineral market conditions are such that remaining mineral potential (mostly iron and gold) is currently uneconomical; and (4) gold deposits are in the form of veins, the extraction of which would most likely not involve the open pit methods. This applies to public lands only. See Map 2-12 Appendix A.

**Action** Where they occur and if necessary, wild burros may be fenced out of some or all natural and artificial waters within currently occupied range of the Sonoran Bighorn Sheep Metapopulation WHMA or the Southern Mojave Bighorn Metapopulation WHMA. Design, construction and maintenance information is provided in Appendix M.

**Action** Ford Dry Lake sheep allotment (49,682 acres) would no longer be available for domestic sheep use because it is less than 9 miles from occupied bighorn range in the Palen Mountains.

**Action** Rice Valley sheep grazing allotment (85,565 acres) would no longer be available for domestic sheep use in order to re-establish the Little Maria Mountain deme (Map 2-13 Appendix A). The allotment is within 9 miles of proposed deme.

**Ref** See section 2.5, Issue: Designation of Routes of Travel for description of route closures.

**Ref** See section 2.6, Issue: Land Ownership Pattern for description of land acquisition management.

**Ref** See section 2.2, Issue: Recovery of the Desert Tortoise for prescriptions relating to reduction of surface disturbance which cover parts of bighorn sheep range.

**Ref** See section 2.2, Issue: Recovery of the Desert Tortoise for terms and conditions for domestic sheep grazing.

**Objective b--Maintain, Improve, and Restore Habitat Quality**

**Ref** Same as the Proposed Plan.

**Objective c--Reestablish Demes**

**Ref** Same as the Proposed Plan.

**2.3.1.4 Small DWMA--B Alternative**

**Objective a--Identify and Protect Essential Habitat**

**Ref** Same as the Proposed Plan.

**Objective b--Maintain, Improve, and Restore Habitat Quality**

**Action** Construct new water developments outside of designated wilderness areas as generally described below (not shown on a map) to expand usable habitat in the Sonoran Bighorn Sheep Metapopulation WHMA:

<b>Location</b>	<b>Quantity</b>
Little Chuckwalla Mountains	1
Between Hwy 78 and I-8	3
Chocolate Mountains (west side)	3
Little Mule Mountains	1
Orocopia Mountains	1
Little Picacho Mountains	1
Chuckwalla Mountains (north side)	2
Mule Mountains (to reestablish deme)	3
Palo Verde Mountains (to reestablish deme)	3
Cargo Muchacho Mountains (to reestablish deme)	3

Some existing artificial water sources would also be removed over time. These include all nine windmills (which are no longer functional) and some pipe-tanks facilities which are old, high maintenance, have too little storage capacity, and are redundant to proposed new facilities. An unspecified number of those to be removed are located in wilderness areas. Fewer of these existing facilities would be removed than proposed in the Proposed Plan, however, because so few new waters are proposed. Some of these new water developments would benefit deer. Design, construction, and maintenance information is provided in Appendix M. Agencies would attempt to site new water developments at least 1/4 mile from open routes or washes.

**Ref** See section 2.4 Issue: Management of Wild Horses and Burros for management of burros inside bighorn sheep range.

**Objective c--Reestablish Demes**

**Ref** Same as the Proposed Plan.

**2.3.2 Desert Mule Deer Management--Goals and Objectives**

Desert mule deer is a native species, but not a special status species. Deer are included in this section primarily because they are managed as a game species and because artificial waters are proposed to support their population. Deer would potentially benefit from prescriptions related to protecting and enhancing habitat for both bighorn sheep and other special status animal and plant species. Nevertheless, management of mule deer is not dependent on designation of DWMA's or WHMA's.

The objective of this effort is to

- a. provide for the aesthetic, educational, and recreational uses of desert mule deer, to be accomplished by maintaining genetic variation in, and viability of, individual demes and by improving or increasing usable habitat and by augmenting populations

**Desert Mule Deer Strategy**

The desert mule deer populations within the Northern and Eastern Colorado Desert planning area would be managed as two populations identified by their current CDFG hunting zone designation: D-12 and D-17. Desert mule deer would continue to be conserved as a native species and would continue to be managed as a game species. CDFG is currently rewriting the deer conservation and management plan for both of these herds in a document known as the Deer Management Plan for Deer Assessment Unit 11. When completed the CDFG plan would contain considerably more detail and site-specific proposals. While deer is a native species found in JTNP and CMAGR, hunting is not allowed on those lands. In addition, in JTNP there would be no game management consideration for deer, including artificial waters, but there is in CMAGR in support of hunting that occurs outside CMAGR. Therefore, the bulk of this strategy would be limited to BLM and CMAGR lands.

**Decisions and Policy Common to all Alternatives**

1. Manage deer in deer habitat throughout its range as currently delineated in the state's D-12 Deer Action Unit and manage harvesting through hunting. CDFG would provide regulations, permitting systems, law enforcement, and other action to support a hunting program where sustainable and consistent with metapopulation management goals.
2. CDFG would continue to construct, improve, and maintain existing natural and artificial water sources and exclosures around them where required and coordinate such work through other

agencies and volunteer groups according to CDFG standards and MOUs with BLM and CMAGR.

3. Artificial waters proposed for construction would be considered as a grouped proposal as noted for waters proposed for bighorn sheep (see section 2.3) and addressed in a NEPA review on a yearly basis for administrative efficiency. A monitoring summary (population trends, and effects of waters) would be included to help support the annual proposal and the full strategic number and patter for the metapopulation as outlined in the Plan. Since about half of the proposed artificial waters for bighorn sheep and desert mule deer are mutually beneficial, they would also be considered simultaneously. In this plan new artificial waters are proposed only for the Sonoran Desert Bighorn Sheep Metapopulation. Proposals for the Southern Mojave Desert Bighorn Sheep Metapopulation, including JTNP, would be considered at a later date.

#### **2.3.2.1 No Action Alternative**

##### **Objective a--Provide for the aesthetic, educational, and recreational uses of desert mule deer**

**CM** Proposals for new water developments for burro deer are considered on a case-by-case basis. Design, construction, and maintenance information is provided in Appendix M.

#### **2.3.2.2 Proposed Plan**

##### **Objective a--Provide for the aesthetic, educational, and recreational uses of desert mule deer**

**Action** New water developments would be constructed to expand usable habitat for desert mule deer. Map 2-19 Appendix A shows 101 prospective areas for the new water developments in the Sonoran WHMA as identified by CDFG with the assistance of bighorn conservation groups. Of the 101sites, 53 are common to both deer and bighorn sheep. Design, construction, and maintenance information is provided in Appendix M. Proposed sites have been generally mapped. Nine sites are shown on Map 2-19 to be in wilderness areas, but only two of those nine are authorized at this time and are arrayed by wilderness area as shown in Table M-1 Appendix M. Many more are located near the boundaries of wilderness areas. This location pattern was developed to best meet the objective with the minimum necessary inclusion in wilderness areas. The remaining seven waters in wilderness areas not authorized at this time may be authorized at a later time without further amendment but must be supported with additional biological justification and site-specific NEPA analysis.

#### **2.3.2.3 Small DWMA--A Alternative**

##### **Objective a--Provide for the aesthetic, educational, and recreational uses of desert mule deer.**

**Action** Same as the Proposed Plan.

#### 2.3.2.4 Small DWMA--B Alternative

##### Objective a--Provide for the aesthetic, educational, and recreational uses of desert mule deer

**Action** Construct 21 artificial waters for deer over the next several years (Figures M-1 and M-2 Appendix M). Use would be common to both deer and bighorn sheep at all sites.

#### 2.3.3 Other Special Status Animal and Plant Species, Natural Communities, and Ecological Processes--Goals and Objectives

Goals for special status animal and plant species, natural communities, and ecological processes are as follows:

- **Plants and Animals.** Maintain the naturally occurring distribution of 28 special status animal species and 30 special status plant species in the planning area. For bats, the term "naturally occurring" includes those populations that might occupy man-made mine shafts and adits.
- **Natural Communities.** Maintain proper functioning condition in all natural communities with special emphasis on communities that a) are present in small quantity, b) have a high species richness, and c) support many special status species.
- **Ecological Processes.** Maintain naturally occurring interrelationships among various biotic and abiotic elements of the environment.

The objectives are to

- a. protect and enhance habitat
- b. protect connectivity between protected communities

#### Decisions and Policy Common to all Alternatives

- 1, Activities or projects authorized at or within 1 mile of a significant bat roost site would have applicable mitigation measures. Mitigation might include seasonal restrictions, light abatement, bat exclusion, and gating of alternate sites. If bats are to be excluded from an old mine prior to renewed mining, the exclusion must be performed at a non-critical time for the species present by a qualified bat biologist. Mitigation plans for large mines would consider retaining some shafts and adits or creating new ones as compensation.
2. Within suitable habitat within the distribution of flat-tailed horned lizard, all applicable actions in the Flat-tailed Horned Lizard (FTHL) Conservation Strategy (available in BLM Riverside and El Centro offices) would be applied. These include the following:

- a. Where occupied flat-tailed horned lizard habitat is identified, apply mitigation measures specified in the FTHL Strategy.
  - b. Require compensation for disturbance of habitat at 1 acre acquired for each acre disturbed, which is the rate outside of FTHL Management Areas.
  - c. Document all habitat disturbance according to an interagency protocol.
3. Public comment on critical issues would be solicited from the California Desert Advisory Council for actions on BLM lands and from the Advisory Commission for lands in JTNP. The NEPA process would be used to provide information to the public and to solicit comments on proposed projects occurring on federally administered lands in the planning area.
  4. The Desert Managers Group would continue to provide strategic fiscal planning and would oversee activities of the Integrated Ecosystem Coordinator, the Public Information Coordinator, and the Habitat Restoration Coordinator. The Desert Managers Group would address interagency relations in the planning area.
  5. The BLM and CDFG would coordinate all wildlife management activities in wilderness under the MOU (available in all BLM offices) on "Wildlife Management Activities in Wilderness" signed in 1997.

#### **Planning Area-wide Decisions and Management Strategy Common to All Alternatives**

Various actions to benefit desert tortoises would add protection to special status species and natural communities within DWMA's depending upon the alternative selected. Additionally, there are many other important issues which would add additional commitment to the conservation of special status species and natural communities. These include but are not limited to the following:

1. CDFG, BLM, and NPS would jointly develop a public education plan. Educational materials might include brochures, posters, interpretive displays and signs. The BLM's Santa Rosa Mountains Visitor Center and the JTNP Visitor Center would be primary contact points for public education for the planning area. Interpretive programs at Big Morongo Reserve, Thousand Palms Reserve, Dos Palmas Reserve, and National Parks would include topics such as needs of special status species, vegetation restoration, fire ecology, and off-highway vehicle use. BLM rangers, Park rangers, and CDFG wardens would continue to inform public land visitors on these issues.
2. A Northern and Eastern Colorado Desert Coordinated Management Plan Cooperator's Meeting would be held at least annually. The agenda would include a review of implementation actions in this plan, population trends as indicated by monitoring, progress in research actions, status of public education programs, and cumulative new surface disturbance. Each of the cooperating agencies--BLM, NPS, USMC, USFWS, CDFG--would have an official representative present at the meetings. The general public, interest groups, and other agencies would be invited and would be given time on the agenda to comment on plan implementation. The managers may also

establish a technical group to address some elements such as monitoring and coordinated budget requests.

3. The BLM and USMC would develop an interagency agreement for management of the Chocolate Mountains Aerial Gunnery Range as required by the California Desert Protection Act.
4. Within one year after completing the plan, BLM and NPS would jointly develop and submit a monitoring plan to USFWS to ensure that casual uses or other human activity are not affecting known occurrences of Coachella Valley Milkvetch.
5. During project construction, special effort would be made to avoid disturbance of populations of any special status plant. Avoidance would be strongly encouraged, but where plants cannot be avoided, the effects of the project on the species as a whole would be assessed. If the project is not likely to jeopardize the species or lead to the need to list a candidate or sensitive species, the project may be approved. Disturbance of a listed plant species would not be allowed. Consideration would be given to transplanting; seed collection and propagation; seed-bed removal and replacement; and long-term, rigorous post-project monitoring of plant population recovery. Where a project approaches a population of a special status plant, permanent or temporary fencing would be strongly considered.
6. NEPA documentation undertaken for project proposals considered under actions described in the following alternatives would address values and effects to specific special status species and general habitats and adhere to both state and federal guidance.

### **2.3.3.1 No Action Alternative**

#### **Objective a--Protect and enhance habitat**

- CM** Habitat of each special status species and each natural community would be protected using existing land use policies, designations such as existing MUC and ACECs (Bigelow cholla, Desert Lily Preserve, Chuckwalla Bench, Corn Springs, Chuckwalla Valley Dune Thicket and Dos Palmas), National Fallback Guidelines and by developing activity plans for proposed Habitat Management Plans from the CDCA plan that have not yet been prepared. These HMPs (Map 2-4 Appendix A) include: Chemehuevi Wash, Vidal Wash, Whipple Mountains, Eagle Mountains bighorn habitat, Coxcomb Mountains bighorn habitat, Granite/Palen Mountains bighorn habitat, Rice Valley Dunes, McCoy Wash, Ford Dry Lake, Palo Verde Mountains, and Indian Wash.
- CM** Impacts of proposed projects in suitable habitat, within the range of a special status species and within natural community types, would be mitigated using commonly applied mitigation measures.
- CM** Standard mitigation practices for protection of raptors throughout the planning area would be applied to construction of all new electric utility lines. Among these measures are the

following: conductor spacing greater than 5 feet and/or perch guards or artificial perches on metal or unsafe cross-arms. Mitigation techniques may be found in *Suggested Practices for Raptor Protection on Power Lines* (Olendorff 1981). In areas of heavy raptor use, electrical distribution lines would be retrofitted appropriately.

**CM** Mitigation measures protecting raptors (and other birds) throughout the planning area would be applied to cyanide-leaching mines. Measures would include, but are not limited to, the following: (1) piping of cyanide solutions, (2) placement of balls or nets over pregnant ponds, and (3) use of drip-irrigation with no standing water on leach pads.

**CM** The following dunes and playas (see Maps 2-20 and 3-3 Appendix A) in the planning area would be designated as "open" or "closed" to vehicle use regardless of the underlying multiple-use class. These are listed in Table 9 in the Motorized-Vehicle Access Element of the CDCA Plan and are listed here for information only.

Ford Dry Lake (portion of)	MUC M	Open
Cadiz Dunes	MUC L	Closed
Rice Valley Dunes (portion of)	MUC M	Open

#### **Objective b--Protect connectivity between protected communities**

**CM** The route designation process would consider fragment size. A fragment is defined as an area un-bisected by route or linear disturbance.

#### **2.3.3.2 Proposed Plan**

##### **Objective a--Protect and enhance habitat**

**Action** Designate seventeen multi-species WHMAs (totaling 555,523 acres) such that approximately 80 percent of the distribution of all special status species and all natural community types would be included in the Multi-species Conservation Zone (Map 2-21 Appendix A). See Appendix H for a description of the process used to define the WHMA and the concept of conservation zones.

**Action** Delete the following unwritten HMPs: Fenner/Chemehuevi Valleys, Chemehuevi Wash, Vidal Wash, Eagle Mountains, Granite-Palen Mountains, Rice Valley Dunes, McCoy Wash, Chuckwalla Bench, Ford Dry Lake, Palo Verde Mountains, Indian Wash, Milpitas Wash, Algodones Dunes (that portion within planning area) and Coxcomb Mountains.

**Action** Require mitigation of impacts of proposed projects in suitable habitat within the range of a special status species and within natural community types using commonly applied mitigation measures and conduct surveys in the proposed project area for special status species as follows (also see range maps 3-6a-f and 3-7a-f Appendix A):



- **Most Animals:** Only within Multi-species Conservation Zone.
- **Plants with mapped ranges:** Within ranges for species with range maps. (Ranges may be both in and outside Multi-species Conservation Zone).
- **Other:** At all species locations in the planning area (see CM for special status species and special measures below for selected species or species groups).

Special mitigation measures would be applied as given below for each species or species group.

**Action** Bat gates would be constructed on caves or mine roosts only where there would be significant potential for negative effects from human intrusion. Gates would be constructed according to the most recent techniques considering human and bat passage, susceptibility to vandalism, and cost. Gates would be inspected and maintained regularly. On BLM-managed lands, placement of gates would include right-of-way protection unless sites are already afforded such protection.

**Action** All riparian habitat or permanently flowing streams within 5 miles of a maternity roost for Townsend's big-eared bat would have a riparian proper functioning condition analysis and receive annual inspection and monitoring report. Those riparian/stream sites degraded by use or exotic plants or otherwise not functioning properly would receive treatment and/or protection to restore them to proper functioning condition.

**Action** Closure of any route within 1/4 mile of any significant bat roost would be strongly considered.

**Action** Throughout the Planning Area, closure of any route within 1/4 mile of a prairie falcon or golden eagle eyrie (cliff nests) would be strongly considered.

**Action** OHV races, construction activities, blasting, and similar activities would not be authorized within 1 mile of a prairie falcon or golden eagle eyrie between February 15 through June 15.

**Action** Habitat for elf owls at Corn Springs would be improved by removing tamarisk to elevate water table, controlling starlings, planting cottonwoods, adding nest boxes or wood poles until cottonwoods mature, and minimizing groundwater pumping. (Other special status species benefitting might include vermilion flycatcher and Gila woodpecker).

**Action** Limit construction activity period to September 1 - February 1 if burrowing owls are present in a project area.

**Action** Harvest of live vegetation, especially cactus and yucca, would be prohibited in the Multi-species Conservation Zone to protect perching and nesting sites for thrashers.

**Action** Limit construction activity period to July 1 - December 1, if Crissal thrashers are present in a project area.

**Action** The following dunes and playas (see Map 2-20 Appendix A) would be closed under CFR 8342 to vehicle use (except for routes designated open or limited) to protect essential blowsand habitat or sand source for populations of Mojave fringe-toed lizard. The following changes would be made to Table 9 in Motorized-Vehicle Access Element of the CDCA Plan:

Palen Dunes	MUC M	Closed
Rice Valley Dunes	MUC M	Closed
Ford Dunes	MUC M	Closed
Palen Dry Lake	MUC L & M	Closed
Ford Dry Lake (portion of)	MUC M	Closed

See Section 2.5 Objective a for additional information.

**Action** Special mitigation measures avoiding disturbance of Couch's spadefoot toad habitat would be strongly considered in all projects. Ephemeral impoundment areas would not be disturbed by vehicles or other activities in order to maintain soil percolation rates and preserve microfauna. Surface flow to such impoundments would not be blocked by projects.

**Action** Closure of any route within 1/4 mile of a site of known occurrence of Couch's spadefoot toad would be strongly considered.

**Action** Install permanent fencing where unauthorized vehicle use is observed in temporary impoundment areas for Couch's spadefoot toad. These areas have not yet been identified.

**Action** Closure of any route within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be strongly considered.

**Action** Closure of redundant routes would be strongly considered.

**Action** In the Multi-species WHMA, compensation for disturbance of Desert Dry Wash Woodland and Desert Chenopod Scrub communities as shown on Map 3-3 Appendix A would be required at 3 acres for each acre disturbed. Equivalent funds may be directed toward community enhancement or rehabilitation. For compensation for habitat disturbance within DWMA's, see Section 2.2 Issue: Recovery of the Desert Tortoise, Small DWMA--A Alternative.

**Action** In sand dune and playa communities (Map 3-3 Appendix A) that are closed to vehicle use, compensation for surface disturbance would be required at 3 acres for each acre disturbed. Compensation would not be required for existing salt mining operations on playas managed under MUC I. Equivalent funds may be directed toward community enhancement or rehabilitation. For compensation for habitat disturbance within DWMA's, see section 2.2 Issue: Recovery of the Desert Tortoise Recovery, Small DWMA A.

**Action** On those playas which are designated MUC I for salt mining (Bristol, Cadiz, and the western half of Danby), areas of playa habitat with little to no mining infrastructure would be managed through design and rehabilitation of mining operations and other uses to mitigate alteration of natural ecological processes--primarily episodes of water flooding and ponding. This prescription would serve until either (1) the level of mining operations is significantly increased from the relatively low, constant level of activity of the past five decades; or (2) the level of knowledge is increased about the natural history of the specific playa environments and effects of salt mining operations--positive or negative.

**Action** Spring and Seep communities in need of rehabilitation, or protection, would be improved through a number of means: removing tamarisk, controlling starlings, planting native species, adding nest boxes or wood poles until cottonwoods mature, adding fencing to exclude livestock and burros, discontinuing water diversions. These needs and measures would vary by the known or predicted occurrence of various species of concern. Where necessary, habitat improvements would be protected by right-of-way. Map 2-22 Appendix A indicates 45 sites are in need of tamarisk removal and 93 sites that may need enclosures for cattle and burros (those within leases or herd areas), although these numbers may vary somewhat after performing on-site evaluations.

**Action** Construction projects would not disturb springs and seeps during duration of project.

**Action** BLM would be interested in acquiring private and State Lands Commission (SLC) lands outside NPS with known occurrences of Coachella Valley Milkvetch where (1) there is a willing seller, (2) such lands would be manageable, and (3) such lands are not encumbered by highway, other right-of-way conflicts, or other conflicts. Acquisition would occur only where the action is consistent with obtaining and retaining lands in federal ownership and is consistent with current or future urban/agricultural lands uses in the Desert Center area

**Ref** See section 2.5 Issue: Designation of Routes of Travel for description of route closures.

**Ref** See section 2.6 Issue: Land Ownership Pattern for description of land acquisition management.

#### **Objectives b--Protect connectivity between protected communities**

**Action** The route designation process would consider fragment size. A fragment is defined as an area un-bisected by route or linear disturbance.

**Action** The fragmenting affects of projects should be considered in the placement, design, and permitting of new projects.

**Ref** See section 2.5 Issue: Designation of Routes of Travel for description of route closures.

### 2.3.3.3 Small DWMA--A Alternative

#### Objective a--Protect and enhance habitat

**Action** Same as Proposed Plan with following exceptions:

**Action** Designate eighteen Multi-species WHMAs (totaling 812,323 acres) such that approximately 80 percent of the distribution of all special status species and all natural community types are included in the Multi-species Conservation Zone (Map 2-23 Appendix A). See Appendix H for a description of the process used to define the WHMA and the concept of conservation zones.

**Action** Bat gates would be constructed on all caves or mine roosts where entry would pose a hazard to humans or bats outside of CMAGR. Gates would be constructed according to the most recent techniques considering human and bat passage, susceptibility to vandalism, and cost. Gates would be inspected and maintained regularly. On BLM-managed lands, placement of gates would include right-of-way protection unless sites are already afforded such protection.

**Action** All significant roost sites would be withdrawn, at generally 2.5 acres per site, from mineral entry, subject to valid existing rights.

**Action** In Sand Dune and Playa communities as shown on Map 3-3 Appendix A that are closed to vehicle use, compensation for surface disturbance would be required at 3 acres for each acre disturbed. Compensation would not be required for existing salt mining operations on playas managed under MUC I. Equivalent funds may be directed toward community enhancement or rehabilitation.

#### Objective b--Protect connectivity between protected communities

**Action** Same as Proposed Plan.

### 2.3.3.4 Small DWMA--B Alternative

#### Objective a--Protect and enhance habitat

**Action** Same as Proposed Plan with following exceptions:

**Action** Designate twelve Multi-species WHMAs (totaling 512,455 acres) such that approximately 50 percent of the distribution of special status species and natural community types are included in the following combined areas: (1) Joshua Tree National Park, (2) Chocolate Mountains Aerial Gunnery Range, (3) designated wilderness (4) proposed DWMAs (see section 2.2 Issue: Recovery of the Desert Tortoise Small DWMA B), and (5) the newly defined Multi-species WHMA (Map 2-24 Appendix A). These combined areas are hereafter

referred to as the Multi-species Conservation Zone. Actions applied to the Multi-species WHMA would generally be pro-active and use-guiding rather than use-prohibiting. See Appendix H for a more precise definition of the WHMA.

**Action** Construction would not be limited to the period between July 1 and December 1 in Conservation Zone when Crissal Thrashers are present.

**Action** Fencing would not be considered where unauthorized vehicle use is observed in temporary impoundment areas for Couch's spadefoot toad.

**Action** In the Multi-species WHMA, compensation for disturbance of Desert Dry Wash Woodland and Desert Chenopod Scrub communities as shown on Map 3-3 Appendix A would be required at 1 acre for each acre disturbed. Equivalent funds may be directed toward community enhancement or rehabilitation. For compensation for habitat disturbance within DWMA's, see section 2.2 Issue: Recovery of the Desert Tortoise Recovery, Small DWMA A.

**Action** In Sand Dune and Playa communities as shown on Map 3-3 Appendix A that are closed to vehicle use, compensation for surface disturbance would be required at 1 acre for each acre disturbed. Compensation would not be required for existing salt mining operations on playas managed under MUC I. Equivalent funds may be directed toward community enhancement or rehabilitation.

**Action** On Bristol Dry Lake (designated MUC I for salt mining), areas of playa habitat with little to no mining infrastructure would be managed through design and rehabilitation of mining operations and other uses to mitigate alteration of natural ecological processes--primarily episodes of water flooding and ponding. This prescription would serve until either (1) the level of mining operations is significantly increased from the relatively low, constant level of activity of the past five decades; or (2) the level of knowledge is increased about the natural history of the specific playa environments and effects of salt mining operations--positive or negative.

**Objective b--Protect connectivity between protected communities**

**Action** Same as Proposed Plan.

## 2.4 Issue: Wild Horses and Burros

Managing wild burros along the Colorado River is a joint responsibility for BLM offices in California and Arizona. Management is further complicated by a complex land ownership pattern which includes three national wildlife refuges, one state recreation area, private lands (which include farmlands), Metropolitan Water District lands, and the Chemehuevi and Colorado River Indian tribal lands. As these jurisdictions are mostly adjacent to the Colorado River, they tend to have concentrations of wild burros during the summer months when water availability is limited in upland areas. Burros that range both on and off BLM public lands are subject to the Wild, Free-Roaming Horse and Burro Act of 1971.

Two pairs of herd management areas (HMAs) lie on the west side of the Colorado River and either side of the CDCA boundary, just west of, and parallel to, the Colorado River. BLM offices in California and Arizona administer HMAs on their respective sides of the CDCA boundary (Map 2-25, Appendix A).

BLM's land use plans for the above-indicated California and Arizona BLM offices are proposed to be amended for their Wild Horses and Burros components because of the recommendations of *Desert Tortoise Recovery Plan*, the Pierson Report (see goal c), and conflicts with other uses.

The *Desert Tortoise Recovery Plan* recommends no burro grazing in DWMAs. The burros also share habitat with bighorn sheep and deer. There are increasing concerns over forage competition between burros and deer, and even greater concern over competition between burros and bighorn sheep for available water in the uplands. The reader is also referred to Issues 2.1 (Standards and Guidelines), 2.3 (Bighorn Sheep and Deer), and 2.2 (Recovery of the Desert Tortoise) for related issues and solutions.

No specific permanent management facilities for wild burros (burro drinkers, spring developments, exclosures) are proposed at this time. At such time as burro populations reach management levels prescribed for the herd management areas (HMAs), the need for these facilities would be evaluated. Currently, the BLM and California Department of Fish and Game are coordinating efforts to gather information on the seasonal distribution and extent of movements with radio collared burros in the Chocolate/Mule Mountains, Picacho and Cibola/Trigo Herd Management Areas. This data, along with water assessments, vegetative monitoring, and population census data (burro, bighorn sheep, and deer) would be used in the updated herd management area plans (HMAPs) to decide where development of these facilities would best achieve the management objectives and hold burros within the HMA boundaries. Exclosures would be used primarily around critical waters for bighorn sheep. In lieu of exclosures, fenced, wildlife guzzlers could be built. Exclosures around natural waters and mitigation for burros would be addressed in updated HMAPs. Methods, locations, and facilities related to the gathering and holding of captured burros, both temporary and permanent, would be utilized and specifically addressed in forthcoming updated herd management area plans (HMAPs) and gathering plans. Development of these documents also includes public review.

### 2.4.1 Goals and Objectives

The goals of wild burro management are to:

- Manage wild burro herds for healthy viable populations in a thriving natural ecological balance.
- Address the inconsistencies and complexities of management plans and program administration between California and Arizona BLM leading to better implementation the BLM's management responsibilities under Public Law 92-195 and accomplishing the missions and mandates which govern other administrated lands.
- Follow the recommendations from the Wild Horse and Burro Emergency Evaluation Team, commonly known as the Pierson Report. The team recommended combining multiple HMAs to recognize an entire herd and designate one field office responsible for herd census, burro removal, and monitoring actions. Each field office would still be responsible for the management of all other resources within their respective jurisdictions, including vegetation and waters management upon which herds are dependent.

The objective for wild burro management is to:

- a. Retain and combine common herds and management units for herd management units that are common to California and Arizona administrations, adjusting the boundaries and Appropriate Management Levels (AMLs) and designating a single BLM field office to manage the units, resolve management issues, and improve program administration.

### Change in Terminology and CDCA Plan

The following is a list of terms used to define wild horse and burro management. Some of this terminology represents a change in terminology used in the CDCA Plan as described in Chapter 3 (See section 3.7 for definitions and the relationships to the out-of-date terms). The correct terms used in planning documents developed by BLM in Arizona for that portion of the California Desert within its jurisdiction are: Herd Area (HA), Herd Management Area (HMA), Appropriate Management Level (AML), and Herd Management Area Plan (HMAP).

### Additional Points of Management

The following additional notes of management are provided to help clarify details of management not addressed in the NECO Plan but are related to land use plan implementation.

#### HMAs and Unitized Program Administration

Upon completion of the NECO Plan, new HMAPs would be written which would replace the current separate California and Arizona HMAPs. The plans will contain the details of managing herds of wild horses and burros which are not contained in land use plans. Along with the writing of HMAPs,

agreements would be developed between the BLM offices in California and Arizona for the combined program administration.

### Gathering Operations and Plans

Gathering plans would be written and approved prior to conducting gathering operations. These plans address the time of year of operations; the use of facilities and wranglers on horses; access into HMAs and other areas--including wilderness areas, refuges, lands managed by other agencies, and private lands-- and the use of water/air/wheeled craft to help herd and haul animals.

### Decisions Common to All Alternatives

**CM** Add historic burro range in the Chocolate Mountains-Cargo Muchacho Mountains area to the Chocolate Mountains HA. (This corrects a previous technical error in describing the HA.) (Map 2-25 Appendix A).

### 2.4.2 No Action Alternative

#### Objective a--Combine Common Herds and Management Units

**CM** Manage all HMAs with current boundaries and AMLs as separately set in current California and Arizona land use and program management plans. ( Table 2-10) (Map 2-25 Appendix A). Manage Piute Mountain HA for zero burros.

Table 2-10. Appropriate Herd Size

Herd Management Area (HMA)	Appropriate Management Level (AML)
Chemehuevi HMA (CA)	150 (a single herd and AML are common to both HMAs)
Havasu HMA (AZ)	
Chocolate/Mule Mountains HMA (CA)	22 (California), 190 (Arizona) (a single herd is common to both HMAs, each of which has separate AMLs)
Cibola/Trigo HMA (AZ)	
Picacho HMA (CA)	42 horses

### 2.4.3 Proposed Plan

#### Objective a--Combine and Adjust Common Herds and Management Units

**Action** Combine Chemehuevi and Havasu HMAs into a single burro HMA to be named Chemehuevi HMA and modify the new HMA boundary to reduce conflicts in the northern



portion of the Chemehuevi Indian Reservation, the Havasu National Wildlife Refuge (NWR), and with issues defined in sections 2.2 and 2.3. The new HMA would be reduced from a current combined 485,846 acres to 147,630 acres (Map 2-26 Appendix A). Reduce the current AML of 150 to a current management level of 108, which would remain in effect until a new AML is established through monitoring of habitat and population. AML reductions center primarily on the NWR and tribal land.

**Action** Eliminate the Picacho HMA for horses.

**Action** Combine the historical burro range (see Chapter 3) and the Chocolate/Mule Mountains and Cibola-Trigo HMAs into a single burro HMA to be named Chocolate/Mule Mountains HMA. Modify the boundary to more accurately reflect burro use and reduce conflicts in the Cibola and Imperial National Wildlife Refuges (NWRs), Fish and Wildlife Service lands, CMAGR, Picacho State Recreation Area (SRA), and with issues defined in sections 2.2 and 2.3. The HMA would be reduced from a current combined 422,598 acres to 223,542 acres (Map 2-26 Appendix A). Reduce the current combined AML of 212 to a single current management level of 121, which would remain in effect until an AML is established through monitoring of habitat and population. AML reductions are primarily in the NWRs and SRA.

#### 2.4.4 Small DWMA--A Alternative

##### Objective a--Combine and Adjust Common Herds and Management Units

**Action** Eliminate the Chemehuevi, Havasu, Chocolate/Mule Mountains, Cibola-Trigo and Picacho HMAs. This would eliminate conflicts stemming from a land pattern issue in which there are many entities that do not share burro management mandates (NWRs, SRA, CMAGR, private farmlands). (Map 2-27 Appendix A.)

#### 2.4.5 Small DWMA--B Alternative

##### Objective a--Combine and Adjust Common Herds and Management Units

**Action** Combine Chemehuevi and Havasu HMAs into a single burro HMA to be named Chemehuevi HMA. Modify the new HMA boundary to more accurately reflect burro use and reduce conflicts in the northern portion of the Chemehuevi Indian Reservation, the Havasu National Wildlife Refuge (NWR), and with issues defined in sections 2.2 and 2.3. The HMA would be reduced from a current combined 485,846 acres to 263,021 acres (Map 2-28 Appendix A). The current AML of 150 would remain in effect until a new AML is established through monitoring of habitat and population. The relatively small reduction in acres allows continuation of current management level.

**Action** Eliminate the Picacho HMA for horses.

**Action** Combine the historical burro range (see Chapter 3) and Chocolate/Mule Mountains and the Cibola-Trigo HMAs into a single burro HMA to be named Chocolate/Mule Mountains HMA. Modify its boundary to more accurately reflect burro use and reduce conflicts in the Cibola and Imperial National Wildlife Refuges (NWRs) and CMAGR, and with issues defined in sections 2.2 and 2.3. The HMA would be reduced from a current combined 422,598 acres to 274,811 acres (Map 2-28 Appendix A). Reduce the current combined AML of 212 to a single current management level of 138, which would remain in effect until an AML is established through monitoring of habitat and population.

**Action** Establish the *Piute Mountain HMA* (39,780 acres) at a current population level of 37 burros until an AML is established through monitoring of habitat and population (Map 2-28 Appendix A).

## 2.5 Issue: Motorized-Vehicle Access, Routes of Travel Designations, and Recreation

In the California Desert, motorized-vehicle access and recreation are closely related, particularly when motorized travel is the focus of recreational activities (e.g., driving for pleasure, participating in dual-sport motorcycle events, or racing in organized events). Motorized vehicle access is often required to get to recreation sites such as campgrounds and trail heads. Routes of travel designations directly influence opportunities for recreation and affect access for non-recreational pursuits. Accordingly, motorized-vehicle access, routes of travel designations, and recreation are addressed as a single issue.

### Casual Versus Authorized Use

Casual use of public lands in the context of motorized-vehicle access is defined as the use of routes not requiring a specific authorization. Authorized use is the use of routes approved through a permitting process for specific activities (e.g., rights-of-way issued for development of communication sites). The designation of routes as “open,” “limited,” and “closed” is generally applicable to both casual and authorized users of public lands. Where there is a requirement for occasional access associated with an authorized use and it is determined that unlimited casual use may cause undesirable resource impacts, routes would be designated “closed” and available for use only by the authorized party. In such circumstances, the authorized use of a “closed” route usually limits this use in some manner or requires mitigation in some form. Only a few routes would be in this group of “for use only by authorized parties.” Access for the use and enjoyment of private lands would be addressed on a case-by-case basis where private landowners are adversely affected by route designation decisions.

Map 2-29 Appendix A shows the current access network for all lands in the NECO planning area. Plan decisions would not address access on USMC or NPS lands. Accordingly, the following actions apply to BLM-managed lands only.

#### 2.5.1 Goals and Objectives<sup>2</sup>

The goals stated in the CDCA Plan’s Motorized-Vehicle Access Element (1985 Plan Amendment Six, approved January 15, 1987) are herein reiterated as goals of the NECO Plan for motorized-vehicle access and routes of travel designations:

- Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies.

---

<sup>2</sup> New, small off-highway vehicle recreation areas were suggested for various locations during the NECO planning process. Their consideration is deferred to another planning process, through adaptive management, and until additional, specific information is gathered on recreation needs as well as natural and cultural values which could be affected. Designation of additional motorized “open areas” requires a plan amendment (and would include an evaluation according to regulations at 43 CFR 8342.1), but was not part of the scope of issues identified at the beginning of the NECO planning process. Therefore, any inclusion of such proposals in NECO could not be adequately supported with data and science and is premature.

- When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources.
- Use maps, signs, and published information to communicate the motorized vehicle access situation to desert users. Be sure all information materials are understandable and easy to follow.

The goals in the CDCA Plan's Recreation Element (1985 Plan Amendment Six, approved January 15, 1987; and 1987 Plan Amendment Nine, approved August 23, 1988) are herein reiterated as goals of the NECO Plan for recreation:

- Provide for a wide range of quality recreation opportunities and experiences, emphasizing dispersed undeveloped use.
- Provide a minimum of recreation facilities. Those facilities should emphasize resource protection and visitor safety.
- Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.
- Emphasize the use of public information and education techniques to increase public awareness, enjoyment, and sensitivity to desert resources.
- Adjust management approach to accommodate changing visitor use patterns and preferences.
- Encourage the use and enjoyment of desert recreation opportunities by special populations, and provide facilities to meet the needs of those groups.

The objectives for motorized-vehicle access / routes of travel designations / recreation are to

- a. designate routes of travel consistent with the criteria at 43 CFR 8342.1
- b. provide for competitive off-highway vehicle events in a manner that protects desert resources
- c. establish stopping, parking, and vehicle camping limitations consistently

### **2.5.2 Decisions and Policy Common to all Alternatives**

Regardless of the alternative selected, public lands within the planning area would be managed in accordance with all applicable laws and regulations.

The CDCA Plan's motorized-vehicle access element was amended (1982 Plan Amendment Three, approved May 17, 1983) to conform with 43 CFR 8342.1 which requires route approval to be based on the following criteria:

- Areas and trails would be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- Areas and trails would be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention would be given to protect endangered or threatened species and their habitats.
- Areas and trails would be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- Areas and trails would not be located in officially designated wilderness areas or primitive areas. Areas and trails would be located in natural areas only if the authorized officer determines that vehicle use in such locations would not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

The biological parameters proposed in sections 2.2 and 2.3 are applicable to all alternatives in order to meet regulatory requirements at 43 CFR 8342.1(b). These parameters are summarized in Table 2-11.

**Table 2-11. Biological Parameters to Minimize Harassment of Wildlife and Disruption of Habitats**

Section	Parameters <sup>a</sup>
2.2	Portions of Desert Tortoise Recovery Units (No Action Alternative), portions of DWMA's (Proposed Plan), or DWMA's in their entirety (Small DWMA A and B Alternatives) would be designated as "washes closed zones" wherein vehicle use would be restricted to specific routes, including navigable washes, that are designated "open" or "limited." <sup>b</sup>
2.3	The route designation process would consider fragment size.
2.3	Closure of any route within 1/4 mile of any significant bat roost would be strongly considered. <sup>c</sup>
2.3	Closure of any route within 1/4 mile of prairie falcon and golden eagle eyries (cliff nests) would be strongly considered. <sup>c</sup>
2.3	Closure of any route within 1/4 mile of a site of known occurrence of Couch's spadefoot toad would be strongly considered. <sup>c</sup>
2.3	Closure of any route within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be strongly considered. <sup>c</sup>
2.3	Closure of "redundant" routes would be strongly considered. <sup>d</sup>

<sup>a</sup> Recognizing the value of a motorized recreational touring network, the following categories of routes on public lands are designated "open" as exceptions to the biological parameters described in this table: paved roads, maintained dirt roads, and recreational touring routes. In accordance with the CDCA Plan, as amended, a maintained road is defined as "regularly or frequently maintained by

continuous use (e.g., passage of vehicles) or machine maintenance.” For the NECO Plan, a maintained dirt road is generally one that is maintained periodically with the use of machines (e.g., motorized graders). A “recreational touring route” is one that, in combination with other such routes, provides important recreational access primarily to meet the needs of individuals who “drive for pleasure.”

<sup>b</sup> On public lands within “washes closed zones,” washes not specifically designated “open” or “limited,” despite their navigability, would not be available for vehicle use. Such washes are designated “closed” as a class. Outside “washes closed zones,” navigable washes within “washes open zones” are available for motorized-vehicle use as a class (unless it is determined that use in specific washes or wash zones must be further limited). In MUC L areas, navigable washes on public lands in “washes open zones” are designated “open” as a class. In MUC M areas and MUC I areas not designated “open” to motorized-vehicle access, navigable washes are considered “existing” routes (No Action Alternative only). No “washes limited zones” are proposed in the NECO Plan.

<sup>c</sup> Applying such “location-specific” biological parameters occasionally caused the designation of an entire route on public lands as “closed” rather than limiting the closure to a portion of the route. Such broadening of the parameters in this manner is generally based on judgments regarding potential for manageability. Conversely, in light of judgments regarding maintenance of a viable route network and potential for manageability, routes on public lands that occur within the prescribed distance as specified by the biological parameters are occasionally designated “open” or “limited.”

<sup>d</sup> Redundant routes are those deemed excess, or more than are needed. In identifying redundant routes, the following definition was used: A redundant route is one whose purpose is apparently the same, or very similar to, that of another route, inclusive of providing the same or very similar recreation opportunities or experiences. In some instances, elimination of redundant routes also reduces fragmentation of wildlife habitats. Identifying redundant routes requires that judgements be made relative to the uses and purposes of certain routes.

The criteria at 43 CFR 8342.1(a) require that damage to soil, watershed, vegetation, air, or other resources of the public lands be minimized where routes are available for use by motorized vehicles. Such “other resources” include cultural resources. The following approach to cultural resources in the context of route designation is developed in furtherance of these criteria:

**Cultural Resources.** For all alternatives, the BLM would propose an amendment to the California Desert Conservation Area Programmatic Agreement between BLM and the California State Historical Preservation Office (SHPO) to formalize the implementation of a phased cultural resource strategy for routes of travel. This proposed amendment will:

1. Define the nature of the undertaking and level of effort necessary to address effects on historic and cultural resources,
2. Allow the designation of routes to proceed,
3. Provide for phased identification and evaluation of historical and cultural sites over a specified period of time in consultation with SHPO, interested persons, and tribal entities, and
4. Provide remedies (route closure, mitigation) when eligible historical and cultural resources would be affected.

**Route Designation Definitions.** Route designation definitions of open, closed, and limited routes were established in the amended CDCA plan. The definition of a non-route was developed in the NECO planning effort. The definitions are shown here to aid the reader.

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

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

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

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

The same exceptions to motorized-vehicle use of closed routes also apply to limited routes.

**Non-Routes.** Non-routes are previously-existing routes that have been substantially reclaimed by the forces of nature. Some of these non-routes are delineated as existing routes on the most-recent versions of 1:24,000 USGS maps. Nevertheless, an on-the-ground survey revealed that such routes (1) cannot be located due to complete or near-complete reclamation, (2) are intermittently visible, thereby encouraging intermittent cross-country travel where evidence of the route disappears, and/or (3) have been re-vegetated to the extent that, although visible, travel upon them would require the crushing of substantial vegetation, i.e., destruction of natural features.

In some instances where only a portion of a route was declared to be a non-route at the time of the inventory, the entire route would be closed to preclude impacts to the non-route portion and allow natural reclamation to continue. Such routes are identified as “partial non-routes.” Where a portion of the route connects other open routes and is not declared to be a non-route, only the non-route portion would be closed.

All “non-routes” and “partial non-routes” identified for closure on public lands would be designated “closed.”

In reviewing the four alternatives, the following must be kept in mind:

- Route designations approved through the NECO Plan constitute CDCA Plan decisions; future changes to these decisions would require amending the CDCA Plan.
- Route designations apply only to routes and portions thereof on public lands; the designation of routes as “open,” “limited,” and “closed” is not applicable on non-public lands.

- Routes within Joshua Tree National Park are not subject to route designation through the NECO Plan; motorized-vehicle access is addressed through the Park’s General Management Plan and amendments thereto.
- The Chocolate Mountain Aerial Gunnery Range is closed to casual use; routes therein accordingly are not subject to the NECO Plan route designation process.
- Appendix L describes the route inventory process for the NECO Plan.

**Summary of Routes**

A comparison of routes open and closed for each alternative is presented in Table 2-12. It presents the miles of paved roads (672 miles), miles of Open and Closed unpaved routes, and the total mileage of routes. About 645 miles of routes were previously closed as a result of 1994 wilderness designations by Congress.

**Table 2-12. Comparison of Routes Open and Closed by Alternatives**

Alternative	Routes (miles)			
	Paved	Unpaved		Total
		Open	Closed	
No Action	672	4,743	239	<b>5,654</b>
Proposed Plan	672	4,743	239	<b>5,654</b>
Small DWMA A	672	4,134	848	<b>5,654</b>
Small DWMA B	672	4,222	760	<b>5,654</b>
Routes previously closed as a result of the 1994 wilderness designations				645

The areas of washes closed zones are compared for each alternative in Table 2-13. Washes closed zones are large areas that include mountains and many other features. Within these areas, washes are closed unless specifically designated open. For the three action alternatives, the acres and percent of the Chemehuevi and Chuckwalla DWMAs designated “washes closed zones” are presented. For the No Action Alternative, similar information is presented for Category I and II desert tortoise habitat in the Chemehuevi and Chuckwalla areas. Washes closed zones presented in this table add to the area of washes previously closed as a result of past designations for NPS, CMAGR, and BLM wilderness areas. These wilderness areas cover 45 percent of the NECO planning area.



Table 2-13. Size of Washes Closed Zones by Alternative

Alternative	New "Washes Closed Zones"					
	Chemehuevi		Chuckwalla		Total	
	Acres	% of Area	Acres	% of Area	Acres	% Planning Area
No Action	326,024	35	121,189	12	447,213	8
Proposed Plan	359,093	41	121,374	15	480,467	9
Small DWMA A	491,645	66	293,589	47	785,234	14
Small DWMA B	491,645	66	293,589	47	785,234	14

### 2.5.3 No Action Alternative

#### Objective a--Designate Routes of Travel

**CM** Motorized-vehicle access would be managed in accordance with Multiple-Use Class (MUC) guidelines established in the CDCA Plan, as amended (see section 3.9.4). Routes of travel are approved for motorized-vehicle use in accordance with Executive Orders 11644 and 11989 (issued on February 9, 1972, and May 24, 1977, respectively), and the criteria at 43 CFR 8342.1.

**Action** All "existing" routes (Map 2-29 Appendix A) on public lands that have been inventoried and mapped in MUC L (Limited Use) areas, including navigable washes that have been individually identified, would be designated "open" for motorized-vehicle use except where: (1) such use has already been limited or prohibited through publication of a final notice in the *Federal Register*, (2) specific biological parameters (Table 2-11) are applied to minimize harassment of wildlife and habitats relative to motorized-vehicle use, or (3) restrictions on use are required to protect other resource values of the public lands, to promote the safety of all users of the public lands, or to minimize conflicts among various uses of the public lands. All navigable washes not individually inventoried and mapped on public lands in MUC L areas would be designated "open" as a class, except where such washes occur within a "washes closed zone" (Maps 2-10 and 2-31 Appendix A).

All "existing" routes on public lands in MUC M and MUC I areas, whether non-wash routes or navigable washes, would be available for motorized-vehicle use except where such use has already been limited or prohibited, or where specific biological parameters identified in sections 2.2 and 2.3 are applied to minimize harassment of wildlife and significant disruption of wildlife habitats relative to motorized-vehicle use (Map 2-31 Appendix A).

Any route requiring construction through use of road construction equipment or establishment by repeated vehicular travel would require a specific authorization consequent to preparation of a project-specific environmental assessment.

### **Route-Specific Designations (No Action Alternative)**

Map 2-31 Appendix A depicts the following:

- open routes in MUC L areas
- “existing” routes available for use in MUC M and I areas
- limited routes
- closed routes
- routes proposed for addition to the route network to enhance recreational opportunities
- routes declared to be “non-routes” at the time of the inventory (April 1996 and thereafter) and, therefore, not available for use

### **Results of Route-Specific Designations**

A summary of the miles of routes open and closed for the No Action Alternative is presented in Table 2-14. Similar tables are presented for each alternative. For the No Action Alternative, a total of 4,743 miles would be available for use by motorized vehicles (not including 672 miles of open paved routes). A total of 239 miles of routes would be closed due to (1) proximity of bat roosts, prairie falcon or golden eagle eyries, or waters; (2) redundant route closures; and (3) other resources values, safety, and minimizing conflicts with various users. Additional routes proposed to enhance recreation total 3 miles. In designated wilderness areas, 645 miles were previously closed to casual access by the California Desert Protection Act of 1994.

**Table 2-14. Summary of Routes of Travel Designations for No Action Alternative<sup>a</sup>**

	Planning Area Subdivisions			Total
	Desert Tortoise Critical Habitat Units		Outside Desert Tortoise Critical Habitat Units	
	Chemehuevi	Chuckwalla		
<b>Open Routes<sup>b</sup>, in Miles</b>				
Open vehicle routes	431	591	1,020	2,042
“Existing” vehicle routes	329	526	1,846	2,701
Proposed New routes for recreation	3	0	0	3
<b>Closure of routes within 1/4 mile of:</b>	<b>Closed Routes, in Miles</b>			
Significant bat roosts	1	0	14	15
Prairie falcon or golden eagle eyries	0	2	0	2
Couch’s spadefoot toad	0	0	0	0
Water sources	3	9	18	30
<b>Closure of redundant routes</b>	29	42	62	133
Closed to protect other resources, promote safety and minimize conflicts <sup>c</sup>	2	2	55	59
<b>Total of Closed Routes</b>	35	55	149	<b>239</b>
<b>Area of Washes Closed Zone, Acres</b>	326,024	121,189	0	447,213
<b>Mileages indicated below are not included in the total miles of routes closed to motorized-vehicle use</b>				
Non-routes	105	22	205	332
Partial Non-routes	21	1	38	60
Vehicle Routes in Designated Wilderness Closed to Casual Motorized-Vehicle Use	estimated 645 miles <sup>d</sup>			

<sup>a</sup> Route designations apply only to routes and portions thereof on public lands. Nevertheless, in order to portray the actual extent of the access network on routes, mileages of routes cited in this table pertain to lengths of **unpaved routes** in their entirety regardless of land ownership. **Paved roads** total 672 miles and are not included in this table.

<sup>b</sup> These figures do not reflect the miles of wash routes on public lands designated “open” as a class in “washes open zones.” Limited routes (seasonal limitations on use) total about 4 miles, but are included in this table as “open” routes.

<sup>c</sup> Mileages reflect application of the route designation criteria at 43 CFR 8342.1 other than those at 43 CFR 8342.1(b). This mileage also reflects routes behind locked gates that were previously closed to public access.

<sup>d</sup> The actual mileage of routes in wilderness that were closed to casual motorized-vehicle use consequent to the California Desert Protection Act of 1994 is undetermined as a complete inventory of routes does not exist for these areas.

### **Implementation of Route Designation Decisions**

- Routes comprising a basic recreational access network within the NECO planning area would be individually signed in such a way as to signify their availability for use. This basic network is based on specific recreational touring routes identified for the NECO Plan.
- Information kiosks depicting the basic recreational access network would be installed at key locations throughout the NECO planning area. These kiosks would furnish information relating to access opportunities and limitations, resource protection, and visitor safety.
- Printed media (e.g., maps, brochures, etc.) depicting the basic recreational access network would be developed and distributed to the public. Information provided would be similar to that on the kiosks, but would likely be more comprehensive as space allows. Interpretive information may also be provided to enhance recreational experiences.
- Routes designated “closed” would be appropriately signed, barricaded, or rehabilitated as necessary to exclude access and allow the forces of nature to obliterate them, except where limited use is important to achieve resource management objectives (e.g., maintenance of small game guzzlers to support wildlife populations). In such cases, access would be controlled to exclude casual use by the general public yet allow continued administrative use.
- Routes that are not included in the basic recreational access network but are available for motorized-vehicle use (i.e., they have not been designated “closed”) would *not* be signed or depicted on information kiosks.

The intent of this strategy would be (1) to provide off-highway vehicle enthusiasts, especially novices, with well-defined, signed routes on which to explore the desert, and (2) to direct use to a limited number of primary routes, thereby decreasing use throughout the network of secondary routes. In general, it is anticipated that the identified primary routes would better accommodate higher levels of use with lower potential for adverse impacts to resource values than the secondary routes.

### **Implementation Priorities**

Implementation would occur first within MUC L areas and ACECs, then on the remaining public lands.

### Route-Specific Documentation

Route-specific decisions are displayed on the large format maps in the back-cover pouch for each alternative (Maps 2-31 through 2-35). The route of travel inventory is available on detailed maps (1:24,000 scale) for review at BLM offices in Needles, Palm Springs, El Centro, and Riverside. Documentation on a route-specific basis wherein all routes are listed by their assigned numbers along with their respective designations was not included in the DEIS. Route-specific documentation relative to the Proposed Plan is presented in Appendix R.

### Route Designation Revisions

Routes of travel designations would be revised in accordance with the CDCA Plan, as amended (see section 3.9.7).

### Objective b--Provide for Competitive Off-Highway Vehicle Events

**CM** Competitive off-highway vehicle events are allowed on competitive recreation routes established through the CDCA Plan, as amended.<sup>3</sup> Within the NECO Planning Area, these are the Johnson Valley to Parker and the Parker 400 routes (Map 2-30 Appendix A). These routes are established and approved exclusively for permitted competitive recreation use, and are not for access or casual recreation unless specifically approved for such use.

Before a competitive off-highway vehicle event within a designated competitive recreation route would be authorized, an event-specific environmental assessment (EA) would be completed. It can be assumed the BLM would issue permits *absent a change in the circumstances which led to the establishment of these corridors*. The purpose of the EA would be to determine if changes have occurred. The BLM may deny a permit for a race in a designated corridor if there is reason to believe that changes have, in fact, occurred and a competitive off-highway vehicle event would result in substantial impacts to resource values that cannot be avoided or mitigated.

Permits issued for the use of these corridors would include stipulations consistent with the Multiple-Use Class guidelines for the areas through which they pass. All competitive events would require appropriate resource, safety, and management stipulations. Stipulations for the Johnson Valley to Parker Motorcycle Race would include those developed specifically for the event through the 1980 Environmental Impact Statement (see Appendix K).

Competitive off-highway vehicle events outside the established competitive recreation routes are allowed in accordance with the Multiple-Use Class guidelines for the areas through

---

<sup>3</sup> The CDCA Plan identifies competitive recreation courses as "routes." Actions proposed in the NECO Plan require distinguishing between an existing route on which casual motorized vehicle travel occurs and which establishes the basic alignment of the competitive recreation route, and a "corridor" that would be comprised of the existing route and adjacent lands available for racing.

which they pass (see section 3.8.1 for guidelines). Before a competitive off-highway vehicle event outside a designated competitive recreation route would be authorized, an event-specific environmental assessment or environmental impact statement would be completed.

### **Objective c--Establish Stopping, Parking, and Vehicle Camping Limitations Consistently**

**CM** In accordance with the CDCA Plan, as amended, stopping, parking, and vehicle camping is allowed within 300 feet of a route, except within sensitive areas (such as ACECs) where the limit would be 100 feet.<sup>4</sup>

## **2.5.4 Proposed Plan**

### **Objective a--Designate Routes of Travel**

**Action** Amend the CDCA Plan to require that motorized-vehicle access would be managed in accordance with current MUC L guidelines irrespective of Multiple-Use Class, except in MUC C (wilderness) and areas designated “open” for vehicle use.

**Action** All “existing” routes on public lands that have been inventoried and mapped for the NECO Plan (Map 2-29 Appendix A), including navigable washes that have been individually identified, would be designated “open” for motorized-vehicle use with the following exceptions: (1) where such use has already been limited or prohibited through publication of a final notice in the *Federal Register*, (2) where specific biological parameters proposed through the NECO Plan are applied to minimize harassment of wildlife and significant disruption of wildlife habitats relative to motorized-vehicle use, or (3) where restrictions on use are required to protect other resource values of the public lands, to promote the safety of all users of the public lands, or to minimize conflicts among various uses of the public lands. All navigable washes not individually inventoried and mapped on public lands would be designated “open” as a class except where such washes occur within a “washes closed zone”<sup>5</sup> created to meet management goals in section 2.2 (Maps 2-10 and 2-32 Appendix A).

---

<sup>4</sup> The 1982 CDCA Plan Amendments Three and Forty-Nine, approved May 17, 1983, lend themselves to confusion regarding limitations on stopping, parking, and vehicle camping. Amendment Three, which revised the Motorized-Vehicle Access Element, specifies that stopping, parking, and vehicle camping are allowed within 300 feet of routes, and that specific parking or stopping areas may be signed “open” or “closed” to protect fragile or sensitive resources adjacent to the route. Accordingly, these activities would not be further limited until such time that it is determined to be necessary. On the other hand, Amendment Forty-Nine establishes the 300-foot limit “except within sensitive areas (such as ACECs).” Determinations of where these activities need to be further limited were not deferred to a later date in the case of ACECs and other recognized sensitive areas (although prohibiting parking and stopping in specific areas to protect fragile or sensitive resources, regardless of location, remains discretionary with the BLM). As the CDCA Plan in 1980 established a 100-foot limitation and Amendment Forty-Nine changes it to 300 feet *except* in sensitive areas, the 100-foot limitation still applies in ACECs.

<sup>5</sup> The configuration of the “washes closed zone” under this alternative is the same as for the No Action Alternative.

### **Route-Specific Designations (Proposed Plan)**

Appendix R and Map 2-32 Appendix A identify the following:

- open routes
- limited routes
- closed routes
- routes proposed for addition to the route network to enhance recreational opportunities
- routes declared to be “non-routes” at the time of the inventory (April 1996 and thereafter) and, therefore, not available for use

The 7.5-minute quadrangle sheet (topographic map) index for the NECO planning area is also shown on Map 2-32. This grid and callout of names of quadrangle sheet names are not repeated for the other alternatives (Maps 2-31, 2-33, and 2-24). When evaluating other alternatives, please refer to Map 2-32 for this information.

### **Results of Route Specific Designations**

A summary of the miles of routes open and closed for the Proposed Plan is presented in Table 2-15. Similar tables are presented for each alternative. For the Proposed Plan, a total of 4,743 miles of unpaved routes would be available for use by motorized vehicles. A total of 239 miles of routes would be closed due to (1) proximity of bat roosts, prairie falcon or golden eagle eyries, or waters; (2) redundant route closures; and (3) other resources values, safety, and minimizing conflicts with various users. Additional routes proposed to enhance recreation opportunities total 3 miles. In designated wilderness areas, 645 miles were previously closed to casual access by the California Desert Protection Act of 1994.

**Table 2-15. Summary of Routes of Travel Designations for Proposed Plan<sup>a</sup>**

	Planning Area Subdivisions				Total
	DWMAs		WHMAs	Outside DWMAs and WHMAs	
	Chemehuevi	Chuckwalla			
<b>Open Routes<sup>b</sup>, in Miles</b>					
Open vehicle routes	734	960	696	2,353	4,743
Proposed New routes for recreation	3	0	0	0	3
<b>Closure of routes within 1/4 mile of:</b>	<b>Closed Routes, in Miles</b>				
Significant bat roosts	0	0	3	12	15
Prairie falcon or golden eagle eyries	0	2	0	0	2
Couch's spadefoot toad	0	0	0	0	0
Water sources	3	9	12	6	30
<b>Closure of redundant routes</b>	25	40	39	29	133
Closed to protect other resources, promote safety and minimize conflicts <sup>c</sup>	3	2	2	52	59
<b>Total of Closed Routes</b>	31	53	56	99	<b>239</b>
<b>Area of Washes Closed Zone, Acres</b>	359,093	121,374	0	0	480,467
<b>Mileages indicated below are not included in the total miles of routes closed to motorized-vehicle use</b>					
Non-routes	95	26	62	149	332
Partial Non-routes	0	2	15	43	60
Vehicle Routes in Designated Wilderness Closed to Casual Motorized-Vehicle Use	Same as the No Action Alternative (estimated 645 miles) <sup>d</sup>				

<sup>a</sup> Route designations apply only to routes and portions thereof on public lands. Nevertheless, in order to portray the actual extent of the access network on routes, mileages of routes cited in this table pertain to lengths of **unpaved routes** in their entirety regardless of land ownership. **Paved roads** total 672 miles and are not included in this table.

<sup>b</sup> These figures do not reflect the miles of wash routes on public lands designated "open" as a class in "washes open zones." Limited routes (seasonal limitations on use) total about 4 miles, but are included in this table as "open" routes.

<sup>c</sup> Mileages reflect application of the route designation criteria at 43 CFR 8342.1 other than those at 43 CFR 8342.1(b). This mileage also reflects routes behind locked gates that were previously closed to public access.



<sup>d</sup>The actual mileage of routes in wilderness that were closed to casual motorized-vehicle use consequent to the California Desert Protection Act of 1994 is undetermined as a complete inventory of routes does not exist for these areas.

### **Implementation of Route Designation Decisions**

Same as the No Action Alternative except for implementation priorities.

### **Implementation Priorities**

Implementation would occur first within DWMAs, followed by WHMAs, then on the remaining public lands.

### **Route-Specific Documentation**

See discussion under the No Action Alternative.

### **Route Designation Revisions**

Same as the No Action Alternative.

## **Objective b--Provide for Competitive Off-Highway Vehicle Events**

**Action** The section entitled "Organized Competitive Vehicle Events" in the Recreation Element of the CDCA Plan would be amended as follows:

- The Parker 400 competitive recreation route (corridor) would be eliminated.
- Competitive events in the Johnson Valley to Parker route would be permitted in accordance with requirements set forth in the CDCA Plan (see Section 3.8.4) and stipulations from the 1980 Environmental Impact Statement (see Appendix K) except for the following changes and additional requirements (some elements listed below provide clarification of existing requirements):
  - The Johnson Valley to Parker route would be available for casual recreation use except on days when competitive events are conducted.
  - The Johnson Valley to Parker route would be designated "open" except where cross-country travel within the Johnson Valley to Parker corridor is permitted.<sup>6</sup>

---

<sup>6</sup> Cross-country portions of the Johnson Valley to Parker route--sections where no established route exists--will not be available to the casual user. Only race participants and race officials may use cross-country portions of the race route when a competitive event is approved; race officials may also use these portions of the route for purposes related to administration of the event. The Johnson Valley to Parker route designated "open" refers to the established route available for casual use; lands adjacent to the established route and within the race corridor are not available for casual use except for the purposes of stopping, parking, and vehicle camping unless such uses are otherwise restricted.

- The maximum number of participants in any one event would be 500.
  - Participation would be limited to motorcycles and all-terrain vehicles (ATVs).
  - The start area must be located sufficiently within and distant from the boundary of the Johnson Valley Off-Highway Vehicle Recreation Area to allow the field of participants to narrow (given the differing speeds of the various contestants) such that the event could continue within the confines of the established race corridor outside the “open area.”<sup>7</sup>
  - The maximum width of the race corridor outside the Johnson Valley Off-Highway Vehicle Recreation Area would be 200 feet.<sup>8</sup>
  - Where the Johnson Valley to Parker route establishes the boundary of a DWMA or WHMA, or the boundary of a wilderness area is less than 100 feet from the *centerline* of the designated route, the race corridor would not extend beyond the route’s edge on that side, nor would it extend farther than 100 feet from the *centerline* of the route opposite these special areas. Identification of other sensitive areas (e.g., those containing significant cultural resources) may locally restrict corridor width to protect resource values.
  - Pits would be limited to locations identified in the NECO Plan. All pit activities, including parking of service vehicles, would be restricted to the designated pit areas. Only race participants, support crews, and race officials would be allowed in pit areas; spectators would be prohibited in the pits.
  - Participants may officially finish at any pit area.
  - Access by race officials for delineating the route, monitoring events, and conducting post-event actions would be limited to the established corridor and other routes of travel normally available to the casual user.
- 
- Before a competitive off-highway vehicle event in the Johnson Valley to Parker corridor would be authorized, an event-specific environmental assessment would be completed. It can be assumed the BLM would issue a permit *absent a change in the circumstances which led to establishment of the corridor*. The purpose of the EA is to determine if changes have occurred. The BLM may deny a permit for a race in the corridor if there is reason to believe that changes have, in fact, occurred and a competitive off-highway vehicle event would result in substantial impacts to resource values that cannot be avoided or mitigated.
  - Competitive motorized-vehicle events in which speed is the primary competitive factor would be prohibited except on approved competitive recreation routes (e.g., Johnson Valley to Parker route) and within Off-Highway Vehicle Recreation Areas.

---

<sup>7</sup> Depending on the number of participants, two or more starting waves may be necessary to meet this requirement.

<sup>8</sup> Where an existing route establishes the alignment of the race corridor, the boundaries of the corridor would be no more than 100 feet from the *centerline* of the route.

### Objective c--Establish Stopping, Parking, and Vehicle Camping Limitations Consistently

**Action** The section entitled “Stopping and Parking” in the Motorized-Vehicle Access element of the CDCA Plan, as amended, would be modified such that stopping, parking, and vehicle camping are allowed within 300 feet from the *centerline* of an approved route except within sensitive areas (such as ACECs) where the limit would be 100 feet.<sup>9</sup> This slight modification of current management would provide consistency as regards the width of the stopping, parking, and vehicle camping corridor along approved routes of travel.

**Ref** See section 2.2 Issue: Recovery of the Desert Tortoise. In accordance with the Proposed Plan, stopping, parking, and vehicle camping would be allowed no more than 100 feet from the *centerline* of a route within DWMA.

### 2.5.5 Small DWMA--A Alternative

#### Objective a--Designate Routes of Travel

**Action** Same as the Proposed Plan except that open vehicle routes within DWMA would be limited to (1) paved routes, (2) maintained dirt routes, and (3) recreational touring routes identified for the NECO Plan (Map 2-33 Appendix A).

#### Route-Specific Designations (Small DWMA--A Alternative)

Map 2-33 Appendix A depicts the following:

- open routes
- limited routes
- closed routes
- routes proposed for addition to the route network to enhance recreational opportunities
- routes declared to be “non-routes” at the time of the inventory (April 1996 and thereafter) and, therefore, not available for use.

#### Results of Route Specific Designations

A summary of the miles of routes open and closed for the Small DWMA--A Alternative is presented in Table 2-16. Similar tables are presented for each alternative. For the Small DWMA--A Alternative, a total of 4,134 miles would be available for use by motorized vehicles. A total of 848 miles of routes would be closed due to (1) proximity of bat roosts, prairie falcon or golden eagle eyries, or waters; (2) redundant route closures; and (3) other resources values, safety, and minimizing conflicts with various users. Additional routes proposed to enhance recreation opportunities total 3 miles. In designated wilderness areas, 645 miles were previously closed to casual access by the California Desert Protection Act of 1994.

---

<sup>9</sup> Under this alternative, the “300-foot rule” would be applicable outside DWMA only.

**Table 2-16. Summary of Routes of Travel Designations for Small DWMA--A Alternative<sup>a</sup>**

	Planning Area Subdivisions				Total
	DWMAs		WHMAs	Outside DWMAs and WHMAs	
	Chemehuevi	Chuckwalla			
<b>Open Routes<sup>b</sup>, in Miles</b>					
Open vehicle routes	342	239	1,123	2,430	4,134
Proposed new routes for recreation	3	0	0	0	3
<b>Closure of routes within 1/4 mile of:</b>	<b>Closed Routes, in Miles</b>				
Significant bat roosts	0	0	3	12	15
Prairie falcon or golden eagle eyries	0	2	0	0	2
Couch's spadefoot toad	0	0	0	0	0
Water sources	0	7	14	9	30
<b>Closure of redundant routes</b>	18	27	56	32	133
Closed to protect other resources, promote safety and minimize conflicts <sup>c</sup>	3	1	2	53	59
Closed according to management prescriptions under this alternative	250	359	-	-	609
<b>Total of Closed Routes</b>	271	396	75	106	<b>848</b>
<b>Area of Washes Closed Zone, Acres</b>	491,645	293,589	0	0	785,234
<b>Mileages indicated below are not included in the total miles of routes closed to motorized-vehicle use</b>					
Non-routes	85	26	72	149	332
Partial Non-routes	12	2	4	42	60
Vehicle Routes in Designated Wilderness Closed to Casual Motorized-Vehicle Use	Same as the No Action Alternative (estimated 645 miles) <sup>d</sup>				

<sup>a</sup> Route designations apply only to routes and portions thereof on public lands. Nevertheless, in order to portray the actual extent of the access network on routes, mileages of routes cited in this table pertain to lengths of **unpaved routes** in their entirety regardless of land ownership. **Paved roads** total 672 miles and are not included in this table.

<sup>b</sup> These figures do not reflect the miles of wash routes on public lands designated "open" as a class in "washes open zones." Limited routes (seasonal limitations on use) total about 4 miles, but are included in this table as "open" routes.

<sup>c</sup> Mileages reflect application of the route designation criteria at 43 CFR 8342.1 other than those at 43 CFR 8342.1(b). This mileage also reflects routes behind locked gates that were previously closed to public access.

<sup>d</sup> The actual mileage of routes in wilderness that were closed to casual motorized-vehicle use consequent to the California Desert Protection Act of 1994 is undetermined as a complete inventory of routes does not exist for these areas.

### **Implementation of Route Designation Decisions**

Same as the Proposed Plan.

### **Route-Specific Documentation**

See discussion under the No Action Alternative.

### **Route Designation Revisions**

Same as the No Action Alternative.

## **Objective b--Provide for Competitive Off-Highway Vehicle Events**

**Action** The section entitled "Organized Competitive Vehicle Events" in the Recreation Element of the CDCA Plan would be amended as follows:

- The Johnson Valley to Parker and Parker 400 competitive recreation routes (corridors) would be eliminated.
- Competitive off-highway vehicle events in which speed is the primary competitive factor would be restricted to Off-Highway Vehicle Recreation Areas. Events in these "open areas" would be permitted in accordance with MUC I guidelines and event-specific requirements as formulated by the authorized officer.

## **Objective c--Establish Stopping, Parking, and Vehicle Camping Limitations Consistently**

**Action** Same as the Proposed Plan.

**Ref** See section 2.2 Issue: Recovery of the Desert Tortoise. In accordance with the Small DWMA--A Alternative, it is proposed that stopping and parking be limited to an area no more than 30 feet from *centerline* of an approved route within DWMA's. Vehicle camping would be allowed only in designated areas within DWMA's.

### **2.5.6 Small DWMA--B Alternative**

#### **Objective a--Designate Routes of Travel**

**Action** Same as the Small DWMA--A Alternative except that redundant routes on public lands outside DWMA's would be designated "open" (Map 2-34 Appendix A).

#### **Route-Specific Designations (Small DWMA--B Alternative)**

Map 2-34 Appendix A depicts the following:

- open routes
- limited routes
- closed routes
- routes proposed for addition to the route network to enhance recreational opportunities
- routes declared to be "non-routes" at the time of the inventory (April 1996 and thereafter) and, therefore, not available for use

#### **Results of Route-Specific Designations**

A summary of the miles of routes open and closed for the Small DWMA--B Alternative is presented in Table 2-17. Similar tables are presented for each alternative. For the Small DWMA--B Alternative, a total of 4,222 miles would be available for use by motorized vehicles. A total of 760 miles of routes would be closed due to (1) proximity of bat roosts, prairie falcon or golden eagle eyries, or waters; (2) redundant route closures; and (3) other resources values, safety, and minimizing conflicts with various users. Additional routes proposed to enhance recreation opportunities total 3 miles. In designated wilderness areas, 645 miles were previously closed to casual access by the California Desert Protection Act of 1994.

**Table 2-17. Summary of Routes of Travel Designations for Small DWMA--B Alternative<sup>a</sup>**

	Planning Area Subdivisions				Total
	DWMAs		WHMAs	Outside DWMAs and WHMAs	
	Chemehuevi	Chuckwalla			
<b>Open Routes<sup>b</sup>, in Miles</b>					
Open vehicle routes	342	239	763	2,798	4,134
Additional routes for recreation	3	0	0	0	3
Additional routes per management prescriptions under this alternative	-	-	35	53	88
<b>Closure of routes within 1/4 mile of:</b>					
<b>Closed Routes, in Miles</b>					
Significant bat roosts	0	0	0	15	15
Prairie falcon or golden eagle eyries	0	2	0	0	2
Couch's spadefoot toad	0	0	0	0	0
Water sources	0	7	13	10	30
<b>Closure of redundant routes</b>	18	27	0	0	45
Closed to protect other resources, promote safety and minimize conflicts <sup>c</sup>	3	1	1	54	59
Closed according to management prescriptions under this alternative	250	359	-	-	609
<b>Total of Closed Routes</b>	271	396	14	79	<b>760</b>
<b>Area of Washes Closed Zone, Acres</b>	491,645	293,589	0	0	785,234
<b>Mileages indicated below are not included in the total miles of routes closed to motorized-vehicle use</b>					
Non-routes	85	26	28	193	332
Partial Non-routes	12	2	4	42	60
Vehicle Routes in Designated Wilderness Closed to Casual Motorized-Vehicle Use	Same as the No Action Alternative (estimated 645 miles) <sup>d</sup>				

<sup>a</sup> Route designations apply only to routes and portions thereof on public lands. Nevertheless, in order to portray the actual extent of the access network on routes, mileages of routes cited in this table pertain to lengths of **unpaved routes** in their entirety regardless of land ownership. **Paved roads** total 672 miles and are not included in this table.

<sup>b</sup> These figures do not reflect the miles of wash routes on public lands designated “open” *as a class* in “washes open zones.” Limited routes (seasonal limitations on use) total about 4 miles, but are included in this table as “open” routes.

<sup>c</sup> Mileages reflect application of the route designation criteria at 43 CFR 8342.1 other than those at 43 CFR 8342.1(b). This mileage also reflects routes behind locked gates that were previously closed to public access.

<sup>d</sup> The actual mileage of routes in wilderness that were closed to casual motorized-vehicle use consequent to the California Desert Protection Act of 1994 is undetermined as a complete inventory of routes does not exist for these areas.

### **Implementation of Route Designation Decisions**

Same as the Proposed Plan.

### **Route-Specific Documentation**

See discussion under the No Action Alternative.

### **Route Designation Revisions**

Same as the No Action Alternative.

## **Objective b--Provide for Competitive Off-Highway Vehicle Events**

**Action** The section entitled “Organized Competitive Vehicle Events” in the Recreation Element of the CDCA Plan would be amended as follows:

- The Parker 400 competitive recreation route (corridor) would be eliminated.
- Competitive motorized-vehicle events in the Johnson Valley to Parker corridor would be managed consistent with the requirements described for the Proposed Plan except the maximum number of participants in any one event would be 800.
- The following *additional* criteria for competitive motorized-vehicle events in which speed is the primary competitive factor would be included except for such events occurring entirely within Off-Highway Vehicle Recreation Areas:
  - Competitive motorized-vehicle events may occur only on routes designated “open” for casual use; routes designated “limited” or “closed” may not be used for such events.
  - Participation would be limited to motorcycles and ATVs.
  - Start areas would be located within Off-Highway Vehicle Recreation Areas. The start area must be located sufficiently within and distant from the boundary of the Off-Highway Vehicle Recreation Area to allow the field of participants to narrow



(given the differing speeds of the various contestants) such that the event could continue within the confines of the established race corridor outside the “open area.”

- The maximum width of the race corridor would be 200 feet.<sup>10</sup>
- Competitive motorized-vehicle events would not be allowed in ACECs, critical habitat designated by the USFWS, identified cultural resource sites or districts, riparian areas, and other sensitive areas. Course design would not include trails and roads that (a) are on or eligible for the National Register of Historic Places, (b) are designated as National Historic Trails or eligible for such designation, or (c) have been otherwise specially designated.
- Where the “open” route utilized for a competitive event establishes the boundary of a DWMA or WHMA, or the boundary of a wilderness area is less than 100 feet from the *centerline* of the route, the race corridor would not extend beyond the route’s edge on that side, nor would it extend farther than 100 feet from the *centerline* of the route opposite these special areas.
- Pits would be limited to suitable sites in MUC M and I areas. All pit activities, including parking of service vehicles, would be restricted to the designated pit areas. Only race participants, support crews, and race officials would be allowed in pit areas; spectators would be prohibited in the pits.
- Finish and spectator areas would be limited to suitable sites in MUC M or I areas.
- Access by race officials for delineating the route, monitoring events, and conducting post-event actions would be limited to the established corridor and other routes of travel normally available to the casual user.
- Written permission from landowners to cross private property would be provided to the BLM.
- Permits issued for competitive motorized-vehicle events would include appropriate resource, safety, and management stipulations.
- Before a competitive off-highway vehicle outside an approved competitive recreation route or Off-Highway Vehicle Recreation Area would be authorized, an event-specific environmental assessment would be completed.

---

<sup>10</sup> Where an “open” route establishes the alignment of the race corridor, the boundaries of the corridor would be no more than 100 feet from the *centerline* of the route.

**Objective c--Establish Stopping, Parking, and Vehicle Camping Limitations Consistently**

**Action** Same as the Proposed Plan.

**Ref** See section 2.2 Issue: Recovery of the Desert Tortoise. In accordance with the Small DWMA--B Alternative, stopping, parking, and vehicle camping would be allowed within 300 feet from *centerline* of an approved route within DWMA's.

## 2.6 Issue: Land Ownership Pattern

Eighty-one percent of the land within the planning area is in federal (public) ownership (Map 1- 3 Appendix A). The remainder is divided primarily among state land grants, railroad lands, private holdings, and other properties. There are zones of mixed or “checkerboard” ownership outside of JTNP and CMAGR where federal management and private agendas are difficult to pursue due to this pattern. Without an adjustment to the land ownership pattern, BLM would continue to be at a disadvantage concerning the management of sensitive resources which are not constrained by property lines. Currently there is little development pressure on private lands within the planning area.

### 2.6.1 Goals and Objectives

The goal is to adjust the land ownership pattern through acquisition and disposal of selected lands (1) to improve opportunities for both the management of areas and conservation of natural resources within DWMA, WHMA and existing wilderness; and (2) to facilitate the use of public and private lands in areas of low natural resource values for private, commercial or social purposes, including the opportunity for community expansion. Acquisition of Catellus and State Lands Commission (SLC) lands (as well as other private lands) in wilderness areas is a continuing independent process requiring no specific action through the NECO planning process. All acquired lands would automatically be managed under the same criteria as the surrounding public lands.

The objectives of adjusting the land ownership pattern are to

- a. acquire habitat within DWMA and WHMA (limited application in bighorn sheep corridors), to ensure long-term manageability of these areas for conservation of biological ecosystems
- b. dispose of public lands to private ownership for community expansion where environmentally suitable
- c. acquire lands for protection of threatened and endangered species, where prudent

### Planning Area-wide Decisions and Management Strategy Common to All Alternatives

Public ownership within DWMA and WHMA would be retained according to the guidelines of multiple use classes, ACECs, wilderness areas and other federal requirements unless there is a compelling reason for disposal as determined through NEPA and land use plan amendments. Where decisions may be made to dispose of federal lands, the following considerations would contribute to developing a pattern of use and conservation to protect special status species and the habitats and ecological processes they depend upon:

- location of springs and artificial waters
- known/predicted occurrence of special status plants and wildlife species
- corridors for movement of bighorn sheep and other species
- flow of water and movement of sand and soil and other ecological processes

Federal lands available for private acquisition (disposal) come from the remainder of lands outside CMAGR, JTNP, BLM wilderness, DWMAAs and WHMAAs. The design of DWMAAs and WHMAAs included consideration (i.e., exclusions) for freeway exits and lands in and adjacent to urban and agricultural centers. "Fixed-site" special status species and habitats (e.g., rare plants, bats, springs) which lie outside DWMAAs and WHMAAs would also be retained in public ownership to the extent practical.

Acquisition of private lands would be accomplished as much as possible and practical through exchange to reduce the impact of loss of tax base to counties and only from willing sellers.

Acquisition within DWMAAs, WHMAAs, and wilderness areas would be generally prioritized as follows:

**DWMAAs**

- high risk of development in areas of greatest habitat value (i.e., high tortoise density, populations connectivity points)
- large acreage parcels
- high tortoise density
- high species richness
- all others

**WHMAAs**

- special habitat value
- high development risk
- large acreage parcels
- high species richness
- all others

**Wilderness Areas**

- high development risk
- special habitat value (e.g., springs, bat sites, bighorn sheep lambing areas)
- all others

In all areas, lands with Coachella Valley milkvetch would be areas of acquisition interest. Acquisition methods would generally be applied as follows, but subject to variation in application as follows:

- 1-owner sections (640 acres)--exchange/Land and Water Conservation Fund (LWCF)
- 2-5 owners/section--LWCF/exchange/compensation
- 6-19 owners/section--compensation/LWCF
- 20+ owners/section--compensation, conservancy support, donation, assembled exchange

## 2.6.2 No Action Alternative

### Objective a--Acquire Habitat within DWMA's and WHMA's

**Action** BLM and JTNP would seek to acquire state or private lands within some ACECs, tortoise Category I and II, and wilderness areas through purchase, donation, or exchange according to scheduled priorities. Low priority lands would be acquired only on a passive basis, i.e., federal funding would not be sought; acquisitions would occur through means which do not require expenditure of federal funds (i.e., compensation, donation). Examples of low priority lands are (1) lands with little opportunity or support for private development; or (2) lands with a high density of owners where probability of acquisition of a manageable unit would be low, and the cost of implementing such acquisitions high. Additional guidance is in the California Statewide Desert Tortoise Management Policy.

### Objective b--Dispose of Public Lands into Private Ownership

**Action** Identify public lands suitable for disposal (low biological sensitivity and other management value) into private ownership where consolidation and location of private land both promotes private development and increases tax base for local governments. Federal lands potentially suitable for disposal under this action could include lands along freeways and freeway exists; lands adjacent to urban, agricultural, and industrial centers; lands in checkerboard ownership outside other sensitive areas; lands in unclassified areas; and other lands deemed to be unmanageable under federal ownership. Although exchange would be the BLM's preferred method of disposal, the sale of lands could be considered.

## 2.6.3 Proposed Plan

### Objective a--Acquire Habitat within DWMA's and WHMA's

**Action** BLM and JTNP would actively seek to acquire lands or interests in lands within DWMA's, and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to scheduled priorities. In DWMA's this includes both private and State Lands Commission (SLC) lands. In WHMA's this includes only private lands. This action adds to existing policy to acquire both private and State Lands Commission (SLC) lands in wilderness areas. Table 2-18 presents acreage of private lands involved. Table O-4 in Appendix O presents the acres of land to be acquired from State Lands Commission. The location of state and private lands is shown on Map 2-35 of Appendix A.

### Objective b--Dispose of Public Lands into Private Ownership

**Action** BLM would dispose of lands in areas outside wilderness, DWMA's, and WHMA's which do not containing known occurrences of rare plants, springs, bat or other special status species, and where such action supports consolidation and location of private land to promote private development and increase tax base for local governments. Federal lands potentially suitable

for disposal under this action could include lands along freeways and freeway exits, lands adjacent to urban, agricultural, and industrial centers, lands in checkerboard ownership outside other sensitive areas, lands in unclassified areas, and other lands deemed to be unmanageable under federal ownership. Although exchange would be the BLM's preferred method of disposal, the sale of lands could be considered.

**Table 2-18. Private Lands in Management Areas for Proposed Plan, in Acres**

Management Area	Acres by Density Class (Owners or Parcels per Section)				
	1	2-5	6-19	20+	Total
Chemehuevi DWMA	13,236	4,353	5,387	9,866	<b>32,840</b>
Chuckwalla DWMA	56,563	12,931	25,030	39,159	<b>133,684</b>
Joshua Tree DWMA	18,881	300	8	42	<b>19,231</b>
BLM wilderness outside DWMA's	33,361	5,267	11,020	4,666	<b>54,314</b>
Bighorn Sheep and Multi-species WHMA's outside all above <sup>a</sup>	89,457	11,669	7,052	5,216	<b>113,394</b>
<b>Total</b>	<b>211,497</b>	<b>34,521</b>	<b>48,497</b>	<b>58,948</b>	<b>353,463</b>
<b>Total by County</b>					
Imperial	61,011	9,690	10,315	22,468	<b>103,484</b>
Riverside	84,545	15,456	21,905	24,294	<b>146,200</b>
San Bernardino	65,941	9,375	16,277	12,186	<b>103,779</b>

<sup>a</sup> excluding Bighorn Sheep corridors

**Objective c--Acquire lands for Protection of Coachella Valley Milkvetch**

**Action** BLM would be interested in acquiring private and State Lands Commission (SLC) lands outside NPS with known occurrences of Coachella Valley Milkvetch where (1) there is a willing seller, (2) such lands would be manageable, and (3) such lands are not encumbered by highway, other right-of-way conflicts, or other conflicts. Acquisition would occur only where the action would be consistent with obtaining and retaining lands in federal ownership and would be consistent with current or future urban/agricultural lands uses in the Desert Center area.

**2.6.4 Small DWMA--A Alternative**

**Objective a--Acquire Habitat with DWMA's and WHMA's**

**Action** BLM and JTNP would actively seek to acquire lands or interests in lands within DWMA's and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to scheduled priorities. In DWMA's this includes both private and State Lands Commission (SLC) lands. In WHMA's this includes only private lands. This action also adds to existing policy to acquire both private and SLC lands in wilderness areas. Table 2-19 presents acreage of private lands involved. Table O-4 in Appendix O presents the acres of land to be acquired from State Lands Commission. The location of state and private lands is shown on Map 2-36 of Appendix A.

**Table 2-19. Private Lands in Proposed Management Areas Under Small DWMA--A Alternative**

Management Area	Acres by Density Class (Owners or Parcels per Section )				
	1	2-5	6-19	20+	Total
Chemehuevi DWMA	10,435	3,074	4,308	6,895	<b>24,712</b>
Chuckwalla DWMA	23,594	5,659	14,469	17,327	<b>61,050</b>
Joshua Tree DWMA	18,881	300	8	42	<b>19,231</b>
BLM wilderness outside DWMA's	34,980	5,574	11,398	7,177	<b>59,128</b>
Bighorn Sheep and Multi-species WHMA's outside all above <sup>a</sup>	123,571	19,864	18,242	27,411	<b>189,093</b>
<b>Total</b>	<b>211,461</b>	<b>34,470</b>	<b>48,431</b>	<b>58,852</b>	<b>353,214</b>
<b>Total by County</b>					
Imperial	65,939	9,648	10,254	22,379	<b>108,220</b>
Riverside	84,543	15,447	21,900	24,288	<b>146,178</b>
San Bernardino	60,979	9,375	16,277	12,185	<b>98,816</b>

<sup>a</sup> excluding Bighorn Sheep corridors

**Objective b--Dispose of Public Lands into Private Ownership**

**Action** Same as Proposed Plan.

**Objective c--Acquire Lands for Protection of Coachella Valley Milkvetch**

**Action** Same as Proposed Plan.

**2.6.5 Small DWMA--B Alternative**

**Objective a--Acquire Habitat within DWMA's and WHMA's**

**Action** BLM and JTNP would actively seek to acquire lands or interests in lands within DWMA's and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to scheduled priorities. In DWMA's this includes both private and State Lands Commission (SLC) lands. In WHMA's this includes only private lands. This action also adds to existing policy to acquire both private and SLC lands in wilderness areas. Table 2-20 presents acreage of private lands involved. Table O-4 in Appendix O presents the acres of land to be acquired from State Lands Commission. The location of state and private lands is shown on Map 2-37 of Appendix A.

**Table 2-20. Private Lands in Proposed Management Areas Under Small DWMA--B Alternative**

Management Area	Acres by Density Class (Owners or Parcels per Section )				
	1	2-5	6-19	20+	Total
Chemehuevi DWMA	10,435	3,074	4,308	6,895	<b>24,712</b>
Chuckwalla DWMA	23,572	5,624	14,468	17,304	<b>60,968</b>
Joshua Tree DWMA	18,881	300	8	42	<b>19,231</b>
BLM wilderness outside DWMA's	34,980	5,574	11,398	7,177	<b>59,128</b>
Bighorn Sheep and Multi-species WHMA's outside all above <sup>a</sup>	92,438	14,576	17,257	27,270	<b>151,541</b>
<b>Total</b>	<b>180,305</b>	<b>29,148</b>	<b>47,439</b>	<b>58,688</b>	<b>315,580</b>
<b>Total by County</b>					
Imperial	59,522	9,066	15,285	12,038	<b>95,911</b>
Riverside	72,658	10,986	21,900	24,288	<b>129,832</b>
San Bernardino	48,125	9,096	10,254	22,362	<b>89,837</b>

<sup>a</sup> excluding Bighorn Sheep corridors



**Objective b--Dispose of Public Lands into Private Ownership**

**Action** Same as No Action Alternative.

**Objective c--Acquire lands for protection of Coachella Valley Milkvetch**

**Action** Same as Proposed Plan.

## 2.7 Access to Resources for Economic and Social Needs

No plan actions are described, but there are some important points to note. While no specific action is included here, this public scoping issue has provided fundamental guidance in developing decisions that address other issue items. The intent in developing this plan was to address all the major issues on an equal basis to meet the goal of Public Land Health with the least expense to access and use of resources. A summation of the decisions proposed for these other issue items in Chapter 2 and the cumulative effects described in Chapter 4 would suggest to what extent this intent has been achieved.

Since the public scoping meetings were held and issue conclusions developed for the Plan, the CDPA passed (October, 1994). The CDPA had a considerable effect on this subject. It created new data, analyses, and obvious areas for protection of species and habitats. It also reduced access and heightened the sensitivity on this issue.

The emphasis that this issue provides is translated into the following guidance:

- Utilize existing Congressional and protective land use designations as much as possible to develop areas of conservation emphasis for the desert tortoise and other species and habitats and minimize the need for additional area for this purpose.
- Develop management areas with management emphases that are commensurate with the issues contained--i.e., the degree of restriction and cost of use should be in line with what is appropriate the array of species issues.
- Manage species and habitats by increasing the cost of doing business as opposed to imposing additional restrictions.
- Decisions based on science and science-based judgement, on regional and long-term perspectives, and on cooperative approaches have the best chance of standing the test of time, minimize further need for restrictive management, and maximize possible future relaxation of current restrictions and expenses.

## 2.8 Incorporation of Changes to the California Desert Conservation Area (CDCA) Plan Created by the California Desert Protection Act (CDPA)

The Congressionally created CDPA created 23 new BLM wilderness areas in the planning area, added lands to and changed Joshua Tree National Monument to a Park, and created new wilderness areas in JTNP. The new wilderness designations must also be incorporated into JTNP and BLM land use plans. This has already occurred for JTNP, but would occur through NECO for BLM lands. For BLM lands an additional land use change associated with their creation is required as is described below under the heading “MUC Remnants,” below. The changes are required and allow for no choice (except as noted below), so what is described below is the same for all alternatives.

### 2.8.1 No Action Alternative

Not addressed.

### 2.8.2 Proposed Plan

**Action** Incorporate 23 CDPA-designated wilderness areas into the CDCA Plan.<sup>11</sup> Wilderness areas would be managed according to law, regulations, policies and manuals for wilderness management. Additionally, wilderness areas would be designated MUC C (Controlled Use). These areas are listed below (from north to south) and depicted on Map 2-38 Appendix A:

- Bigelow Cholla Garden
- Clipper Mountains
- Stepladder Mountains
- Whipple Mountains
- Old Woman Mountains
- Sheephole Valley
- Rice Valley
- Palen/McCoy
- Orocopia Mountains
- Little Chuckwalla Mountains
- Indian Pass
- Little Picacho Peak
- Piute Mountains
- Trilobite
- Chemehuevi Mountains
- Turtle Mountains
- Cadiz Dunes
- Riverside Mountains
- Big Maria Mountains
- Mecca Hills
- Chuckwalla Mountains
- Palo Verde Mountains
- Picacho Peak

### MUC Remnants

The new set of BLM wilderness areas overlaid all or portions of previously designated MUC C, L, and M areas. Wilderness designation supercedes any previous MUC designation. However, the “edge fit” of the

---

<sup>11</sup> All BLM wilderness study areas that were identified under the wilderness review requirements of section 603 of FLPMA have been released and no longer exist.

wilderness areas over the previous designations--even areas proposed for wilderness--was not an exact fit in many cases. The result would be that many small portions of previously large MUCs extend beyond wilderness boundaries. These small areas are referred to as "remnants." All the wilderness areas in the NECO planning area have gone through the boundary refinement process and approval. Most remnants are small, extremely long and narrow, and are unmanageable as independent MUCs. They lie between the various wilderness areas and some different adjacent MUC areas. In the case of remnant MUC C areas, the CDCA Plan directs that they automatically and temporarily be reassigned as MUC L until such time as they are permanently assigned a MUC through the plan amendment process. Because the boundaries of wilderness areas cannot be changed, the compelling solution for reassigning most remnants is to assign them to the adjacent non-wilderness MUC as described in the action below. Reassignments vary among alternatives depending upon the nature of DWMA and other proposals. The scope of this action **does not** include (1) large MUC L and M remnants which can stand alone, or (2) access road "cherry stems" into wilderness areas.

As a reminder and as noted in the Desert Plan, MUCs C, L, M, and I designations apply only to federal lands, so this subject and the action below has no effect on private lands.

**Action** Reassign all "remnant" MUCs identified on Map 2-2 of Appendix A to new MUCs, as indicated on Map 2-7 of Appendix A.<sup>12</sup>

### **2.8.3 Small DWMA--A Alternative**

**Action** Reassign all "remnant" MUCs identified on Map 2-2 to new MUCs, as indicated on Map 2-12 of Appendix A.<sup>13</sup>

### **2.8.4 Small DWMA--B Alternative**

**Action** Reassign all "remnant" MUCs identified on Map 2-2 to new MUCs, as indicated on Map 2-12 of Appendix A.<sup>13</sup>

---

<sup>12</sup>The smallest sized remnants are too small to be observable on this map. More information and details are available at the Riverside Office of the Bureau of Land Management.

## **2.9 Comparison of Alternatives**

Actions for each of the four alternatives are compared in Table 2-21. Chapter 4 analyzes the impacts of the alternatives and Table 4-27 summarizes the impacts of the four alternatives.

**Table 2-21. Comparison of Alternatives**

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Standards of Public Land Health and Guidelines for Grazing Management</b>			
Manage ecosystem health with the National Fallback Standards.	Manage ecosystem health with the Regional Standards.	Same as the Proposed Plan.	Same as the Proposed Plan.
Manage grazing activities with national fallback guidelines.	Manage grazing activities with specific regional guidelines.	Same as the Proposed Plan.	Same as the Proposed Plan.
<b>Recovery of the Desert Tortoise</b>			
Manage current Category I and II desert tortoise habitat in the Chemehuevi area.	Designate 874,843 acres as the Chemehuevi DWMA.	Designate 741,440 acres as the Chemehuevi DWMA.	Same as the Small DWMA--A Alternative.
Manage current Category I and II desert tortoise habitat and the Chuckwalla Bench ACEC in the Chuckwalla area.	Designate 720,077 acres as the Chuckwalla DWMA.	Designate 632,094 acres as the Chuckwalla DWMA.	Same as the Small DWMA--A Alternative.
JTNP is managed according to the General Management Plan and with an emphasis on natural ecosystem management policies.	Designate JTNP as the JTNP DWMA.	Same as the Proposed Plan	Same as the Proposed Plan.
Manage Chuckwalla Bench ACEC and Milpitas Wash HMP according to existing plans.	Delete Chuckwalla Bench ACEC and Milpitas Wash HMP which are incorporated into proposed DWMA.	Delete Chuckwalla Bench ACEC which is incorporated into the proposed DWMA.	Same as the Small DWMA--A Alternative.
Retain existing Multiple-Use Class designations.	Designate all MUC M (Moderate Use) lands in proposed DWMA as MUC L ( Limited Use).	Same as the Proposed Plan.	Same as the Proposed Plan.
Retain existing Category I, II, and III Desert Tortoise Habitat area.	Designate proposed DWMA as Category I Desert Tortoise Habitat.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Recovery of the Desert Tortoise, continued</b>			
Evaluate surface-disturbing projects on a case-by-case basis.	Limit cumulative new surface disturbance to 1 percent within DWMA's.	Same as the No Action Alternative.	Limit cumulative new surface disturbance to 3 percent within DWMA's.
Compensation required according to California Statewide Policy.	Compensation for disturbance of public lands within DWMA's would be required at a 5:1 ratio.	Same as the No Action Alternative.	Same as the No Action Alternative.
ACECs entry points are signed and, in certain cases, fenced.	Fence, sign, or patrol the periphery of DWMA's to control conflicts with adjacent land uses.	Fence periphery of DWMA's only where there are conflicts with adjacent land uses to control conflicts.	The periphery of the DWMA's would not be fenced.
Boundary of Lazy Daisy Allotment would remain unchanged.	Allocate forage on 21,606 acres of Lazy Daisy Allotment to desert tortoise.	Allocate forage on 140,357 acres of Lazy Daisy Allotment to desert tortoise.	Same as the Small DWMA A Alternative.
Boundary of Chemehuevi Allotment would remain unchanged.	Ephemeral authorization on Chemehuevi lease is allocated to the desert tortoise and unavailable for Livestock	Same as the Proposed Plan.	Portion of Chemehuevi Cattle Allotment falling within the highest-density tortoise habitat would be would be allocated for desert tortoise
Not addressed.	Prescriptions adapted from terms and conditions of the 1994 BO would be added to the CDCA Plan Grazing Element.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Cattle allotment lessee may voluntarily relinquish all grazing authorizations.	Not addressed.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Recovery of the Desert Tortoise, continued</b>			
Perennial plant utilization may not exceed 40 percent in any key area.	When ephemeral forage production is less than 230 pounds per acre, cattle would be substantially removed for the DWMA.	Not addressed.	Same as the No Action Alternative.
Permits for live vegetation harvest may be issued in non-wilderness areas after environmental review.	Permits for live vegetation harvest may be issued after environmental review only within salvage areas inside where surface disturbance has been authorized.	Same as the No Action Alternative.	Permits for live vegetation harvest may be issued after environmental review for creosote bush stems or any plant within salvage areas where surface disturbance has been authorized.
Lands acquired through compensation or mitigation are classified OPEN for disposal or use.	Land acquired through compensation or mitigation would be classified CLOSED for disposal or use.	Same as the Proposed Plan.	Same as the Proposed Plan.
Fencing of major highways and railroads would be considered as mitigation for new construction projects.	Total of 208 miles of fencing along highways, and railroads.	Total of 63 miles of fencing along highways, and railroads.	Total of 58 miles of fencing along highways, and railroads.
Bridges and culverts would be considered mitigation when new construction projects are proposed.	Bridges and culverts for animal passage would be required for new linear projects.	Bridges and culverts for animal passage would be required for new linear projects, and existing linear projects would be retrofitted.	Same as the Proposed Plan.



No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Recovery of the Desert Tortoise, continued</b>			
Stopping, parking, and camping within proposed DWMA's would be allowed only within 100 feet of a route.	Stopping, parking, and vehicle camping within DWMA's would be allowed only within 100 feet of the centerline of a route.	Stopping and parking, within DWMA's would be allowed only within 30 feet of the centerline of a route. Vehicle camping within DWMA only in designated areas.	Stopping, parking, and vehicle camping within DWMA's would be allowed only within 300 feet of the centerline of a route.
Not addressed.	Portions of DWMA's would be designated as "washes closed zones" wherein vehicle use would be restricted to identified open routes.	DWMA's in their entirety would be designated as "washes closed zones" wherein vehicle use would be restricted to identified open routes.	Same as the Small DWMA A Alternative
Federal agencies would not dispose of public lands within Category I habitat.	Federal agencies would not dispose of public lands within proposed DWMA.	Same as the Proposed Plan.	BLM may dispose of public lands within proposed DWMA if it augments the overall management strategy.
Raven management is accomplished by evaluating projects on a case by case basis, and appropriate mitigation is prescribed.	Proposed projects that potentially increase raven populations within five miles of DWMA's would require mitigation measures to reduce or eliminate proliferation of ravens.	Same as the Proposed Plan.	Same as the Proposed Plan.
Raven management is accomplished by evaluating projects on a case-by-case basis, and appropriate mitigation is prescribed.	Remove ravens that are known to prey on tortoise through selective shooting, poisoning, or trapping and euthanization where there is evidence of raven predation in or within 1 mile of tortoise habitat.	Ravens that are known to prey on tortoise would be removed through non-lethal means only.	Same as the Small DWMA A-Alternative.
Not addressed.	Raven management is accomplished by evaluating projects on a case-by-case project basis and appropriate mitigation is prescribed.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Recovery of the Desert Tortoise, continued</b>			
Manage Categories with current boundaries.	All Desert Tortoise Category I, II, and III habitat outside of DWMA boundaries would be converted to, and managed as, Category III habitat.	Same as the Proposed Plan.	Same as the Proposed Plan.
<b>Special Status Animals and Plants and Natural Communities--Desert Bighorn Sheep</b>			
Continue implementation of current HMPs.	Designate essential habitat for the Sonoran Desert Bighorn Sheep and the Southern Mojave Desert Bighorn Sheep as WHMAs (Map 2-18).	Same as the Proposed Plan.	Same as the Proposed Plan.
Continue implementation of current HMPs.	Delete all current bighorn sheep HMPs that are captured inside WHMAs.	Same as the Proposed Plan.	Same as the Proposed Plan.
Retain current Multiple Use Class designation in the Eagle Mountains area.	Change MUC designation in the Eagle Mountains area from MUC I to MUC L (Intensive to Limited Use).	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Fence potential hazards to bighorn sheep with substantial fencing materials.	Areas with potential hazards to bighorn sheep would not be fenced.	Same as the Proposed Plan.
Manage the Ford Dry Lake Allotment with current boundaries and management practices.	Ford Dry Lake Sheep allotment would be no longer available for domestic sheep because it is less than 9 miles from occupied bighorn sheep range.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Special Status Animals and Plants and Natural Communities--Desert Bighorn Sheep, continued</b>			
Manage the Rice Valley Allotment with current boundaries and management practices.	9,264 acres of the Rice Valley sheep allotment would be no longer available for domestic sheep because it is within 9 miles of current occupied bighorn sheep range.	The Rice Valley sheep allotment would be no longer available for domestic sheep because it would be less than 9 miles from the Little Maria Mountain deme which would be reestablished.	Same as the Proposed Plan.
Not addressed.	In areas managed for burros, deer, and bighorn sheep, natural water sites would be designated to each on an equal shares basis.	Wild burros would be fenced out of all natural and artificial waters within currently occupied bighorn sheep range in the WHMA.	Same as the Proposed Plan.
Proposals for new water developments would be considered on a case-by-case basis.	Construct 75 new waters to expand usable habitat including 10 in wilderness areas. Add up to 12 more in wilderness area based on future biological justification.	Same as the Proposed Plan.	Construct 21 new water developments to expand usable habitat outside of wilderness areas.
Proposals to reestablish lost demes on BLM lands are addressed on a case-by-case basis and require an HMP and State director approval.	Reestablish the following lost demes: <ul style="list-style-type: none"> <li>• Cargo Muchacho Mountains</li> <li>• Mule Mountains</li> <li>• Palo Verde Mountains</li> </ul>	Same as the Proposed Plan.	Same as the Proposed Plan.
<b>Special Status Animals and Plants and Natural Communities--Desert Mule Deer</b>			
Proposals for new water developments are considered on a case-by-case basis.	Construct 101 new waters, 53 of which would also provide water to bighorn sheep, to expand usable habitat.	Same as the Proposed Plan.	Construct 21 new water developments to expand usable habitat outside of wilderness.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Other Special Status Animals and Plants and Natural Communities</b>			
Habitat of each special status species and each natural community would be protected using existing land use policies, designations and fallback guidelines.	Designate 555,523 acres as multi-species WHMA (Map 2-21) such that ~80% of special status species are within DWMA's and WHMA's.	Designate 812,323 acres as Multi-species WHMA (Map 2-23) such that ~80% of special status species are within DWMA's and WHMA's.	Designate 512,455 acres as Multi-species WHMA (Map 2-24) such that ~50% of special status species are within DWMA's and WHMA's.
Mitigate impacts of proposed projects using commonly applied mitigation.	Require mitigate impacts of proposed projects using commonly applied mitigation measures and surveys.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Bat gates would be constructed on caves or mine roost only where there is significant potential for negative effects.	Bat gates would be constructed on all caves or mines roost where entry would pose a hazard to humans or bats outside CMAGR.	Same as the Proposed Plan.
Not addressed.	Not addressed.	All significant bat roost sites would be withdrawn from mineral entry, subject to valid existing rights.	Not addressed.
Not addressed.	All riparian habitat or permanently flowing streams within 5 miles of a maternity roost for Townsend's big-eared bat would have a riparian proper functioning condition analysis.	All significant roost sites would be withdrawn, at generally 2.5 acres per site, from mineral entry, subject to valid existing rights.	Same as the Proposed Plan.
Not addressed.	Closure of any route within 1/4 mile of any significant bat roost would be strongly considered.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Other Special Status Animals and Plants and Natural Communities, continued</b>			
Not addressed.	OHV races, construction activities, blasting and similar activities would not be authorized within 1 mile or a prairie falcon or golden eagle eyrie between February 15 through June 15.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Closure of any route within 1/4 mile of a prairie falcon or golden eagle eyrie would be strongly considered.	Same as the Proposed Plan.	Same as the Proposed Plan.
Remove and control tamarisk and add four nest boxes.	Habitat for elf owl at Corn Springs would be improved by removing tamarisk to elevate water table, controlling starlings, planting cottonwoods, adding nest boxes and minimizing ground water pumping.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Limit construction activity period to September 1-February 1 if burrowing owls are present.	Same as the Proposed Plan.	Same as the Proposed Plan.
Permits for live vegetation harvest may be issues in non-wilderness areas after environmental review.	Harvest of live vegetation would be prohibited in the Multi-species Conservation Zone to protect perching and nesting sites for thrashers.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Limit construction activity period to July 1 - December 1 if Crissal thrashers are present in a project area.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Other Special Status Animals and Plants and Natural Communities, continued</b>			
<p>The following dunes and playas are designated as “open” or “closed” to vehicle use:</p> <ul style="list-style-type: none"> <li>• Ford Dry Lake (portion of) (Open)</li> <li>• Cadiz Dunes (Closed)</li> <li>• Rice Valley Dunes (portion of) (Open)</li> </ul>	<p>The following dunes and playas would be closed to vehicle use:</p> <ul style="list-style-type: none"> <li>• Palen Dunes</li> <li>• Rice Valley Dunes</li> <li>• Ford Dunes</li> <li>• Palen Dry Lake</li> <li>• Ford Dry Lake (portion of)</li> </ul>	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Special mitigation measure avoiding disturbance of habitat of Couch’s spadefoot toad would be strongly considered on all projects.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Closure of any route within 1/4 mile Couch’s spadefoot toad site would be strongly considered.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Install permanent fencing where unauthorized vehicle use is observed in temporary impoundment areas for Couch’s spadefoot toad.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Closure of any route within 1/4 mile of a natural or artificial water source would be strongly considered.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Closure of redundant routes would be strongly considered.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Other Special Status Animals and Plants and Natural Communities, continued</b>			
Acquisition is primarily focused within some ACECs, tortoise Category I and II habitat, and wilderness areas.	Acquire private and SLC lands outside NPS with known occurrences of Coachella Valley Milkvetch.	Same as the Proposed Plan.	Same as the Proposed Plan.
Compensation for disturbance in Desert Dry Wash Woodland and Desert Chenopod Scrub communities is not required.	In the Multi-species WHMA, compensation for disturbance of Desert Dry Wash Woodland and Desert Chenopod Scrub communities would be required at 3 acres for each acre disturbed.	Same as the Proposed Plan.	Same as the Proposed Plan.
Compensation for disturbance in Sand Dune and Playa communities that are closed to vehicle use, is not required.	In Sand Dune and Playa communities that are closed to vehicle use, compensation for surface disturbance would be required at 3 acres for each acre disturbed.	In Sand Dune and Playa communities that are closed to vehicle use, compensation for surface disturbance would be required at 1 acre for each acre disturbed.	Same as the Small DWMA A-Alternative.
Not addressed.	Selected Spring and Seep communities would be improved to enhance habitat for special status bird species.	Same as the Proposed Plan.	Same as the Proposed Plan.
Not addressed.	Construction projects would not disturb Spring and Seep communities during the duration of the project.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Wild Horses and Burros</b>			
<p>Manage the Chemehuevi and Havasu HMAs with current boundaries and AML of 150 burros as set in the CDCA Plan and the Arizona BLM HMAPs.</p>	<p>Combine Chemehuevi and Havasu Herd Management Areas into one named Chemehuevi HMA consisting of 147,630 acres and AML is reduced from 150 to a current management level of 108 burros until an AML is established through monitoring of habitat.</p>	<p>Eliminate the Chemehuevi, Havasu (California side), Chocolate/Mule Mountain, Cibola-Trigo (California side) and Picacho HMAs.</p>	<p>Combine Chemehuevi and Havasu Herd Management Areas into one named Chemehuevi HMA consisting of 263,021 acres and AML is reduced from 150 to a current management level of 108 burros until an AML is established through monitoring of habitat.</p>
<p>Manage the Picacho and Chocolate/Mule Mountains HMAs with current boundaries and AML as set in the CDCA Plan of 42 horses and 22 burros, respectively. The Arizona BLM Cibola/Trigo HMA would be managed with current boundaries and AML as set in their HMAP of 190 burros.</p>	<p>Eliminate the Picacho HMA for horses. Combine historical burro range, Chocolate/Mule Mountains, and Cibola-Trigo Herd Areas into one named Chocolate/Mule Mountains HMA. Reduce AML of 212 burros to a current level of 121 burros which would remain in effect until an AML is established through monitoring.</p>	<p>Eliminate the Chemehuevi, Havasu (California side), Chocolate/Mule Mountain, Cibola-Trigo (California side) and Picacho HMAs.</p>	<p>Eliminate the Picacho HMA for horses. Combine historical burro range, Chocolate/Mule Mountains HA and the Cibola-Trigo HA and HMA for burros to be named Chocolate/Mule Mountains HA and HMA. Manage for a current level of 138 burros until an AML is established through monitoring.</p>
<p>Manage the Piute Mountain HA for zero burros, removing current population.</p>	<p>Same as the No Action Alternative.</p>	<p>Same as the No Action Alternative.</p>	<p>Establish the Piute Mountain HMA (39,780 acres) at current population level of 37 burros until an AML is established through monitoring.</p>



No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Motorized-vehicle Access/Routes of Travel Designation</b>			
<p>Routes would be closed in accordance with the biological parameters established in the NECO Plan regardless of Multiple-use Class.</p>	<p>Motorized-vehicle access would be managed in accordance with current MUC L guidelines irrespective of Multiple-Use Class, except in MUC C and areas designated "open" for vehicle use. Routes would be closed in accordance with the biological parameters established in the NECO Plan regardless of Multiple-use Class.</p>	<p>Same as the Proposed Plan Alternative except that routes designated "open" within DWMA's would be limited to paved roads, maintained dirt roads, and recreational touring routes.</p>	<p>Same as the Small DWMA A Alternative except that redundant routes outside DWMA's would be designated open.</p>
<p>All "existing" routes in MUC L areas that have been inventoried and mapped including navigable washes would be designated "open" for motorized-vehicle use except as noted.</p>	<p>All "existing" routes that have been inventoried and mapped including navigable washes would be designated "open" for motorized-vehicle use except as noted.</p>	<p>Same as the Proposed Plan Alternative.</p>	<p>Same as the Proposed Plan Alternative.</p>
<p>Competitive off-highway vehicle events are allowed on competitive recreation routes established through the CDCA Plan, as amended and in accordance with MUC guidelines outside these routes.</p>	<p>Eliminate the Parker 400. Events on the Johnson Valley to Parker route would be permitted in accordance with specified parameters.</p>	<p>Eliminate the Parker 400 and the Johnson Valley to Parker routes.</p>	<p>Eliminate the Parker 400. Events on the Johnson Valley to Parker route would be permitted in accordance with specified parameters.</p>

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Land Ownership Pattern</b>			
<p>Federal agencies would seek to acquire state or private lands within some ACECs, tortoise Category I and II, and wilderness acres through purchase, donation, or exchange according to ranked priorities.</p>	<p>Federal agencies would actively seek to acquire lands or interests in lands within DWMA's and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to ranked priorities.</p>	<p>Federal agencies would actively seek to acquire lands or interests in lands within DWMA's and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to ranked priorities.</p>	<p>Federal agencies would actively seek to acquire lands or interests in lands within DWMA's and WHMA's (except within Bighorn Sheep corridors) through purchase, donation, or exchange according to ranked priorities.</p>
<p>Identify public lands suitable for disposal of low biological sensitivity into private ownership where consolidation and location of private land both promotes private development and increases tax base for local governments.</p>	<p>BLM would dispose of lands in areas outside wilderness, DWMA's, and WHMA's and not containing known occurrences of rare plants, springs, bat or other special status species and where such action supports consolidation and location of private land to promotes private development and increases tax base for local governments.</p>	<p>Same as the No Action Alternative.</p>	<p>Same as the No Action Alternative.</p>

(This page intentionally left blank.)

## Chapter 3–Affected Environment

This chapter describes those physical, biological, social, and economic characteristics of the land, water, and air resources affected by the issues and management concerns within this plan. Much of the material in this chapter summarizes information developed in the *California Desert Conservation Area Plan* (CDCA Plan) and the current Desert Tortoise Management Status in the Northern and Eastern Colorado Desert planning area.

This chapter serves as baseline data for identifying and analyzing the impacts of the four alternatives in the plan. The alternatives are described in Chapter 2, while the effects of these alternatives on the environment are described in Chapter 4. The following material describes the resources affected by this plan.

### 3.1 Air Quality

Air quality is affected by the amount of contaminants emitted into the atmosphere, topography, and meteorological conditions. In the eastern Colorado Desert, stable atmospheric conditions, low mixing heights, and light winds during evening and morning hours result in contaminants accumulating. In addition, the Los Angeles Air Basin contributes photochemical smog such as ozone (O<sub>3</sub>) to most of the planning area through long-distance transport.

The Clean Air Act established National Ambient Air Quality Standards for concentrations and durations of pollutants which may cause adverse health effects. National primary ambient air quality standards define levels of air quality, with an adequate margin of safety, to protect public health. National secondary ambient air quality standards define levels of air quality, with an adequate margin of safety, to protect the public welfare from any known or anticipated adverse effects of pollutants.

Carbon monoxide is produced primarily by incomplete fuel combustion in motor vehicles. The major effects of carbon monoxide occur near its sources (busy streets and freeways). In the planning area, carbon monoxide standards have not been exceeded due to the low levels of traffic and development.

The primary contributor of particulate matter less than 10 microns (PM<sub>10</sub>) is fugitive dust, occurring both naturally in a desert environment and from human causes such as mining operations, OHV use, and grazing. The latter are largely responsible for excesses of both the national and state PM<sub>10</sub> Air Quality Standards within the planning area (see Figure 3-1).

Ozone is produced through a series of chemical reactions. Reactive hydrocarbons and nitric oxides emitted by motor vehicles react to form nitrogen dioxide and other compounds. The formation of nitric oxide and an oxygen atom follows the photodissociation of the nitrogen dioxide by sunlight. The oxygen atom then combines with oxygen molecules to form ozone. Ozone is an irritant of the respiratory system and inhibits proper functioning of the lungs. The primary source of ozone is from the Los Angeles Basin and additionally from traffic throughout the area. Currently all of the NECO Planning area is in non-attainment with both federal and state Ambient Air Quality Standards for ozone (Figure 3-2).

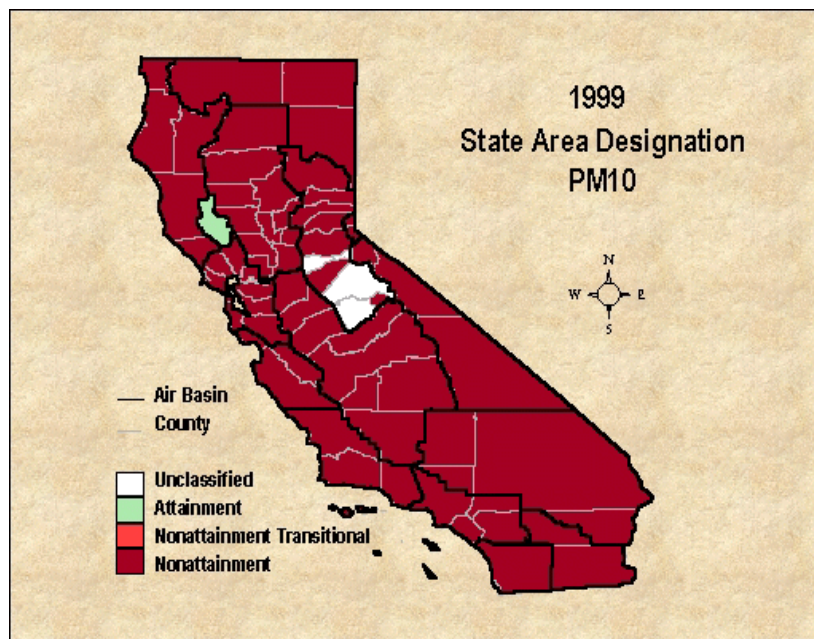


Figure 3-1. State Area Designation, PM10

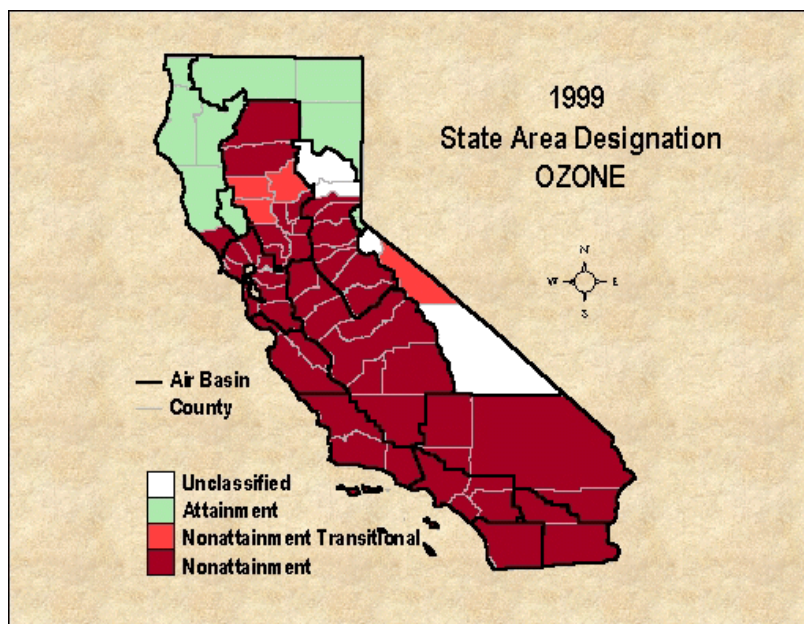


Figure 3-2. State Area Designation, Ozone

Air pollutants have the potential to affect several components of the environments including, but not limited to, humans, wildlife, fish, and vegetation. Air pollutants affect wildlife through inhalation, adsorption and/or ingestion. Populations can be directly affected through injury or death or indirectly through contamination of their food chain or loss of habitat.

Visibility is generally referred to as the relative ease with which objects can be seen through the atmosphere under various conditions. Particulate matter and gases introduced into the atmosphere either absorb or scatter the light, reducing the amount of light a person can receive from a viewed object. Visibility is impaired by dust (especially fine particulates such as PM<sub>10</sub>) and sulfates. Impact to visibility from pollutants transported from the major urban centers takes the form of widespread regional haze and frequently impairs visibility in the vicinity of Joshua Tree National Park (JTNP).

Local pollution in the desert is primarily particulate matter from off-road vehicles, windblown soil, mining operations, and agricultural activities.

### **3.2 Water Quality**

The planning area contains portions of six watersheds: Havasu-Mohave Lakes, Piute Wash, Southern Mojave, Imperial Reservoir, Southern Mojave, Salton Sea, and the Lower Colorado. There is little information about the water quality in the planning area.

Since there are no perennial streams, wildlife seek out natural springs for water during times of drought and low rain months. Guzzlers (man-made springs) also are used by wildlife. These guzzlers have been designed with an underground vault to catch and store water runoff for wildlife. Washes, springs, and guzzlers are located throughout the planning area with the highest concentration of guzzlers and springs in the mountains and washes distributed throughout the planning area (Map 3-2 Appendix A). Some springs and seeps are susceptible to fecal coliform contamination from livestock grazing, wild horses, burros, and wildlife.

Other water issues include human consumption for agriculture, as in the Coachella Valley and in Blythe, and development demands that require water wells. Human use of water could cause the water table to become lowered in vegetated areas such as Desert Dry Wash Woodland.

The amount and seasonal distribution of precipitation is the most important physical condition in the Sonoran desert. Most parts of the Sonoran desert receive less than 10 inches of rainfall per year. Most of the region's water is taken from the ground or diverted from the Colorado River.

For plants there is a wide difference between rainfall events. The increase in soil moisture content by a brief torrential downpour is much less than that from a gradual rain of the same amount (Shreve, Wiggins 1964). Of particular importance to plants are the number and duration of drought periods, which may be defined as periods without rain or not enough rain to affect the soil moisture. Drought periods lasting 30 to 60 days occur almost every year in the Sonoran desert. Large nonsucculent perennials are able to survive using moisture deep in the soils.

Rainfall during the heavy summer monsoons flows downstream through a system of desert washes. Surface water can occur in bedrock controlled channels (Graf 1988).

### 3.3 Soil Quality

Two major processes shape the desert landscape: (1) erosion by wind and water and (2) deposition of aeolian or fluvial sediments. Erosion is a natural and important process in the desert. Due to the lack of vegetation in desert systems, erosion is a major cause of changes in land forms. Erosion also affects biostatic processes such as nutrient cycling and biogeochemical cycling in soil and water. Factors affecting temporal and spatial variation in erosion are rainfall, vegetation, soils, and slope.

Erosion by water results in high sediment loads in desert streams. Sediment is derived from direct contributions from slopes and materials from the bed and banks. Large streams tend to carry more of the slope materials, small streams more bed and bank material. Sediments are largely sand and gravel with little silt, clay, or large debris.

Sediment transport in desert streams can reveal much about a stream channel's processes. Particle size, shape, and deposition pattern reflect distance traveled, strength and duration of flood, and volume of water moved. Smaller particles are moved farther than large boulders. Large assemblages of boulders indicate past catastrophic flooding. Deposition of fine particles increases as water moves down valley in desert streams. Infiltration and evaporation increase as sandy substrate and width of wetted channel increase, such that flood peaks and total discharge eventually decrease to zero (Graf 1988).

Sediment that is carried by desert washes and flood plains contribute to the nutrition and moisture content of the soil. In turn, this richer, moister soil supports unique vegetation communities such as dry wash woodlands that support associated fauna such as migrant birds. Map 3-3 Appendix A shows the vegetation coverage with the desert dry woodlands being represented by the light green color.

An example of a landform that has been shaped by water and erosion is desert pavement. The desert pavement surface is generally flat and smooth and lacks fine particles such as sand in its upper layers. Desert pavements originated as stream deposits millions of years ago, perhaps during the Tertiary period (Peel 1960). The surface of these deposits has been leveled and lowered over time by wind and water erosion of finer sediments creating the "pavement" of larger stones on the surface that we see today.

Other landforms that can be found in the planning area are sand-covered alluvial fans, dissected alluvial fans, mountains, hills, pediments, sand dunes, playas, river washes, lava flows, plateaus, and plains (Map 3-4 Appendix A).

### 3.4 Biological Resources

Biological resources of the NECO Planning Area are described in this section. The section is divided into four main subsections: management tools, special status wildlife, special status plants, and natural community types.

#### 3.4.1 Biological Resources Management Tools

The CDCA Plan outlines management tools available to meet the objectives of managing species and habitats. These tools include the designation of multiple-use classes, designation of Areas of Critical Environmental

Concern (ACECs), Habitat Management Plans (HMPs), and Special Areas (SA). This section describes these designated areas, as well as research and monitoring, desert tortoise management, and bighorn sheep management.

Wilderness Areas, enacted through the Wilderness Act of 1964, can be considered advantageous to species and habitats because the uses are limited to non-motorized and low-impact recreation. The areas are a minimum of five thousand acres, and the management goals of wilderness are consistent with the needs of many species and habitats (see section 3.5 Wilderness Management).

### **Multiple-Use Classes**

Four multiple-use classes (MUC) were developed in the CDCA Plan:

MUC C	Controlled
MUC L	Limited
MUC M	Moderate
MUC I	Intensive

Each describes a different type and level or degree of use which is permitted within that particular geographic area. The multiple-use guidelines were set up to provide for uses in areas that would enhance those inherent values (BLM 1980). In areas with high sensitive, natural, scenic, ecological, or cultural resource values, low intensive use is appropriate to enhance these values. In areas where intensive use such as mining or motor-vehicle recreation was present, an intensive value would be assigned. The classes are detailed in Section 3.8.1.

### **Areas of Environmental Concern**

There are six ACECs (Map 2-4 Appendix A) which are managed for biological resources within the planning area. They include, Bigelow Cholla ACEC, Chuckwalla Bench ACEC, Dos Palmas ACEC, Desert Lily Preserve, Chuckwalla Valley Dune Thicket, and Corn Spring ACEC. The prescriptions applied to an ACEC direct the types of uses and protection that a specific area will have. Although an ACEC might limit uses to benefit a single species such as the desert tortoise or the desert lily, many species that co-exist with these plants or animals also benefit. A good example of this is the Chuckwalla Bench ACEC, which consists of 92,592 acres in southeastern Riverside County. The CDCA Plan designated this ACEC primarily for desert tortoise and big horn sheep in the Chuckwalla Mountains. Many other species such as burro deer and a wide variety of birds have overlapping habitats that are conserved by the ACEC designation.

ACECs have a multiple-use Class L. However, there are exceptions where conflicts or pre-existing uses exist.

### **Habitat Management Plans**

There are five HMPs (Map 2-4 Appendix A) that prescribe management for species and habitats in the planning area. Orocopia HMP, Marble Mountain HMP, Whipple Mountain HMP, and Sheephole Mountain HMP are plans that address big horn sheep and are in wilderness areas. Milpitas HMP is a multi-species habitat management plan located in Imperial County. This 180,800 acre HMP is approximately one third



multiple-use Class M, and the remaining two thirds is Class L. Management objectives include consolidation, protection, and enhancement of wildlife habitat and habitat for plants of special management concern, expansion of habitat used by burro deer and other native wildlife species, consideration of all wildlife species in development and management decisions, and obtaining “good” ecological condition for 70 percent of the HMP.

Proposed HMPs from the CDCA plan that have not been initiated include Fenner/Chemehuevi Valleys, Chemehuevi Wash, Stepladder Mountains, Vidal Wash, Whipple Mountains, Cadiz Dunes, Eagle Mountains, Coxcomb Mountains, Granite Palen Mountains, Rice Valley Dunes, McCoy Wash, Ford Dry Lake, Palo Verde Mountains, and Indian Wash.

The Orocopia Mountains Habitat Management Plan and Chuckwalla Mountains Native Ungulate Habitat Management Plan include management actions addressing needs of burro deer and bighorn sheep. The two plans cover 80,000 and 296,000 acres, respectively (Map 2-4 Appendix A). The Orocopia Mountains HMP proposed five new water developments, improvements to existing springs, tamarisk removal, monitoring, and improved coordination among agencies. The Chuckwalla Mountains Native Ungulate HMP proposed new and improved water developments, improvements to tenajas (natural rock basins), mitigations for mining, reduction of the Ford Dry Lake Allotment (accomplished), and monitoring. These plans were prepared and implemented in cooperation with the California Department of Fish and Game (CDFG).

### **Research and Monitoring**

The CDCA Plan outlined a research and “monitoring system” that would gauge the effectiveness and overall success of wildlife management and the entire plan. Baseline studies and research needs included:

- The impact of approved access routes, particularly in habitats of officially listed species, sensitive species, and raptors;
- Effectiveness of increased surveillance in controlling vandalism;
- Effects of grazing practices on desert bighorn sheep and desert tortoise and their habitats;
- Effects of burro populations and reductions on species such as the desert bighorn sheep;
- Conditions of fish and wildlife water sources, particularly those used by people, livestock, horses and burros, and mining interests;
- Effects of continued vehicle use on wildlife habitats and populations in areas designated as “open” for vehicle free play;
- Condition and trends for officially listed, sensitive, and certain other species; and
- Effectiveness of HMPs and ACECs in stabilizing or improving populations and habitats for officially listed, sensitive, and certain other species and their habitats.

Although the monitoring plan has never been fully developed and implemented, there are individual monitoring and research efforts going on throughout the planning area.

### **Desert Tortoise Management**

Each of the three federal land management agencies (BLM, NPS, USMC) has land use plans or programs that incorporate some type of zoning and special management prescriptions. For the BLM, the land use plan is

the California Desert Conservation Area Plan (BLM 1980). For Joshua Tree National Park (JTNP), there is a General Management Plan (NPS 1999). For the Chocolate Mountains Aerial Gunnery Range (CMAGR) there is a Final Environmental Impact Statement for the Yuma Training Center Complex (USMC 1999). All of these plans address desert tortoise needs to some degree.

In addition, the BLM has a Rangewide Plan entitled *Desert Tortoise Habitat Management on the Public Lands: A Rangewide Plan* (BLM 1988). This plan sets forth a series of 14 management objectives and policies to be implemented on public lands in the range of the desert tortoise. The Rangewide Plan established the Desert Tortoise Management Oversight Group (MOG) consisting of top-level managers from most land management and wildlife agencies in the tortoise range. The Rangewide Plan directed BLM to categorize desert tortoise habitat into three zones reflecting BLM's tortoise management goals.

The BLM also has a Statewide Policy for desert tortoise management; it is entitled *California Statewide Desert Tortoise Management Policy* (BLM 1992). The Statewide Policy established a desert tortoise Category (Map 2-3 Appendix A), which has also been incorporated into the CDCA Plan. BLM has about 1,040,000 acres in Category I habitat and about 211,000 acres in Category II habitat in the NECO Planning Area. BLM's goal in Category I and II habitat is to maintain viable populations of desert tortoise .

In 1994 the U.S. Fish and Wildlife Service (USFWS) designated critical habitat for the desert tortoise Mojave Population (USFWS 1994) (see Map 3-5 Appendix A). At that time Joshua Tree National Monument was not included as critical habitat because USFWS believed that current management policies provided adequate protection for the desert tortoise. Subsequently, the Monument was designated a National Park and was expanded. Hence, it now includes some desert tortoise critical habitat. Table 3-1 shows the total amount of critical habitat and the amount in various ownerships and jurisdictions. Critical habitat encompasses 42 percent of the planning area. Federal agencies are required to conserve critical habitat, and federal agencies and all others must comply with USFWS requirements before disturbing critical habitat.

**Table 3-1. Acres and percentages of desert tortoise critical habitat in various federal and state jurisdictions and private ownership**

Landowner	Acres in critical habitat	Percent of critical habitat	Percent of planning area
<b>Federal</b>			
BLM	1,275,316	69	25
JTNP	161,691	7	3
CMAGR	186,423	9	3
<b>State</b>			
CDFG	5,776	<1	<1
State Lands Commission	62,762	2	1
<b>Private</b>			
Catellus	132,578	2	1
Metropolitan Water Dist.	10,607	1	<1
Cadiz Land Company	3,526	<1	<1
Other	192,159	9	3
Total Private	338,870	12	4
<b>Total in NECO Planning Area</b>	<b>2,332,960</b>	<b>100</b>	<b>36</b>

Several diseases occur in desert tortoises (Jacobson 1993, Homer et al. 1994, 1996). At least two diseases--upper respiratory tract disease (URTD) and shell disease--and perhaps others are significantly affecting wild populations of desert tortoise. To prevent the spread of disease, the BLM, USFWS, CDFG, and other agencies have developed policies on tortoise handling and relocation of tortoises. USGS and others are conducting research on diseases to determine the pathology and epidemiology of tortoise diseases.

Only about nine tortoises from the planning area have been tested for URTD. Several, including two from JTNP, showed clinical signs of URTD and tested positive for the Mycoplasma causative agent.

Two shell diseases have been identified in the planning area: cutaneous dyskeratosis (Homer et al. 1994, 1996, Jacobson et al. 1994), and shell necrosis (Homer et al. 1994, 1996). The causes of these diseases are not known. Cutaneous dyskeratosis is present in higher frequencies in the planning area than in other areas

of California. It is believed to be associated with population declines in Chuckwalla Bench and Upper Ward Valley (Berry 1988, unpubl.).

Compared to other parts of the state, there are relatively few fires in the planning area and most are small. In the 15 years between 1980 and 1995, a handful of fires burned a total of about 6,000 acres. Of this amount, about 900 acres in the Chemehuevi Critical Habitat Unit and about 11 acres in the Chuckwalla Critical Habitat Unit burned. No fires have been reported from CMAGR in the last 10 years. Most fires in the desert are caused by lightning or vehicles.

BLM and NPS have collaborated in the development of the *Fire Management Activity Plan (FMAP) 1996 for the California Desert*. The FMAP brings together fire management goals for biological resources, wilderness, and other sources and establishes fire management standards and prevention and protection programs. The FMAP includes limitations on fire suppression methods in critical habitat and other tortoise habitat; the limitations are designed to limit habitat disturbance while keeping fires small.

The BLM outlined its desert tortoise *Public Education Plan* in the Statewide Policy (BLM 1992). Much of that plan has been implemented, but some is continuing. The Public Education Plan recognized the contributions of other federal and state agencies and private organizations, such as the Desert Tortoise Council, Desert Tortoise Preserve Committee, and California Turtle and Tortoise Clubs. The plan consists of brochures, slide presentations, public tours, videos, children's printed materials, signs, kiosks, and public forums and conferences.

BLM and JTNP rangers and CDFG wardens conduct an active public contact program informing visitors about the desert tortoise. JTNP provides an education program presented to about 12,000 children per year, and over a million people a year visit the visitor center where there is information about the desert tortoise. The BLM has tortoise educational displays at visitor centers at the Santa Rosa Mountains Visitor Center just outside the NECO Planning Area.

Included in the mitigation measures for all projects in desert tortoise habitat is a worker education program. Workers view a presentation or video describing tortoise ecology and threats, legal status, etc. Aircrews and visitors to CMAGR participate in a similar environmental program.

In 1979 and 1980, the BLM established four population distribution permanent study plots, each one square mile in size, for measuring trends in tortoise populations size and changes in age and size structures. Table 3-2 shows the plot locations and years surveyed. The plots have provided valuable data on general biology and impacts. Survey responsibilities on the plots have been transferred to U.S. Geological Survey (USGS).

**Table 3-2. List of desert tortoise permanent study plots in the planning area and the years surveyed using standard protocols.**

<b>Study plot name (Plot No.)</b>	<b>Years surveyed</b>
Upper Ward Valley (16)	1980, 87, 91, 95
Chemehuevi Wash (20)	1979, 81, 88, 92, 99
Chuckwalla Bench (23)	1979, 82, 88, 90, 92, 97
Chuckwalla Valley II (26)	1980, 87, 91

In JTNP, one permanent study plot was surveyed in 1978 according to standard protocols. In subsequent years (e.g., 1991-1996) various surveys were done using non-standard methods. About 10 other plots of varying sizes were surveyed on an experimental basis throughout JTNP.

A revised monitoring program using a distance-sampling methodology has been approved by the Desert Tortoise Management Oversight Group (MOG). The new methodology has been initiated on CMAGR, but it has not yet been implemented on other areas due to funding constraints.

### **Desert Bighorn Sheep Management**

There are five BLM/CDFG habitat management plans in the NECO Planning Area that address habitat needs of bighorn sheep (Map 2-4 Appendix A, and Table 3-3). All five plans were prepared and implemented in cooperation with CDFG. The Whipple Mountains HMP prescribed three new water developments and the reintroduction of bighorn sheep. This plan was fully implemented. The Sheephole Mountains HMP prescribed population augmentation and monitoring. This plan has been fully implemented. The Orocopia Mountains HMP prescribed five new water developments, improvements to existing springs, tamarisk removal, monitoring, and improved coordination among agencies. The Chuckwalla Mountains Native Ungulate HMP prescribed new and improved water developments, improvements to tenajas (natural rock basins), militations for mining, reduction of the Ford Dry Lake Allotment (accomplished), and monitoring. The Marble Mountains HMP prescribed one new water development, monitoring, hunting, and coordination. Other HMPs were proposed in the CDCA Plan for bighorn sheep in the Eagle Mountains, Coxcomb Mountains, and Granite/Palen Mountains. These plans will not be prepared because the first two are now largely in JTNP and the last has a low priority for bighorn sheep planning.

**Table 3-3. Existing bighorn sheep habitat management plans in the NECO Planning Area**

<b>Bighorn sheep HMP (year approved)</b>	<b>Size (ac.)</b>
Whipple Mountains HMP (1982)	64,000
Sheephole Mountains HMP (1984)	6,000
Orocopia Mountains HMP (1986)	80,000
Chuckwalla Mountains Native Ungulate HMP (1989)	296,000
Marble Mountains HMP (1989)	102,000

BLM guidance for management of bighorn sheep throughout its range is contained in *Mountain Sheep Ecosystem Management Strategy (EMS) in the 11 Western States and Alaska* (BLM 1995). For California, eight desert bighorn sheep metapopulations are identified. The NECO Planning Area includes the eastern two thirds and 60 percent of the animals of the Southern Mojave metapopulation and all of the Sonoran metapopulation (Torres *et al.* 1994, 1995). The EMS's aim is to "ensure sufficient habitat quality and quantity to maintain and enhance viable big game [including bighorn sheep] populations, and to sustain identifiable economic and social contributions to the American people." "Viable populations" of bighorn sheep are defined as those having a 99 percent chance of surviving for 30 years. The Strategy presents goals and recommended strategies addressing partnerships, planning, habitat inventory, habitat monitoring, land tenure adjustment, habitat protection, habitat improvement, research, and outreach.

In 1997, BLM and CDFG signed a Memorandum of Understanding (MOU) for Wildlife Management Activities in Wilderness. The purpose was to establish a framework for cooperation and procedures for CDFG maintenance of wildlife facilities, wildlife management activities, and research in BLM wilderness where vehicles and mechanical equipment are needed. These activities in wilderness are authorized specifically by the California Desert Protection Act of 1994 (Sec. 103(f)). The MOU aids in maintaining a strong partnership between BLM, CDFG, and bighorn sheep and deer conservation groups.

Throughout the planning area, numerous artificial waters have been developed, generally at remote, mountainous sites, to stabilize and increase populations of bighorn sheep by providing not only more water but also access to useable forage through nearby water (see proposals and discussion for bighorn sheep in Chapters 2 and 4 and Map 3-1 Appendix A). The work has gone on for decades. The need is created in part by human intrusions on a landscape scale, including development along the Colorado River, barriers to movement created by freeways, and sheep losses to drowning in the Coachella Canal. Almost 80 of these artificial waters are located south of I-10. The designs of these developments include spring boxes, complicated pipe-tanks, windmills-tanks, and modifications of natural tenajas. Some of the waters are highly visible, are old and worn out, and require high maintenance. Nine waters are wells, all of which no longer produce water. Most of these facilities are now located deep into wilderness areas.

Habitat fragmentation and hazards have greatly increased over the years for bighorn sheep throughout the planning area. Prior to the imposition of modern day intrusions (e.g., freeways, canals, farming, various forms of recreation, and tamarisk vegetation along the Colorado River) bighorn sheep were able to range

across the landscape as a common herd. Today interstate freeways (I-10 and I-40) have effectively fragmented and isolated the population into the Sonoran metapopulation and Southern Mojave metapopulation. The Coachella Canal and tamarisk along the Colorado River provide additional artificial conditions. Bighorn sheep will not attempt to penetrate the uniformly dense tamarisk thickets to feed, drink, or migrate. Long stretches of the Canal, which attract bighorn sheep to drink, are unfenced and serve as death traps. Additional developments and permanent and transitory human occupations reduce the occurrence of bighorn sheep movement. Finally, the presence and management of wild burros and some domestic sheep grazing add more stresses through competition for water and forage and possible disease transmission (sheep to sheep). All together, these factors and forces diminish the ability of bighorn sheep to survive on a metapopulation level.

Table 3-4 shows the acres and percent of the occupied range, unoccupied former range, and movement corridor in the four livestock grazing allotments (Map 2-5) in the NECO Planning Area. None of these allotments has an allotment management plan.

**Table 3-4. Acres (and percent of area) for three categories of bighorn sheep use in livestock grazing allotments in the NECO Planning Area**

Bighorn Sheep Use Categories	Lazy Daisy Cattle	Chemehuevi Cattle	Rice Valley Sheep	Ford Dry Lake Sheep
Occupied Range	125,644 ( 7)	2,643 (<1)		
Unoccupied Former Range			195 (<1)	
Movement Corridor	105,438 (18)	61,942 (10)		

### 3.4.2 Wildlife

The desert that makes up the NECO Planning Area is a large and diverse region containing parts of two major deserts and a complex combination of soil, topographic, vegetation, and climatic types. This intermingling across the length and breadth of the planning area has produced a number of major ecosystems, resulting in the species occurrences discussed briefly here. Special status species include the following (see Appendix N for further species information):

#### **Desert bighorn sheep (*Ovis canadensis subspecies nelsoni*)**

There are two metapopulations of bighorn sheep in the NECO Planning Area: the Southern Mojave and Sonoran (Map 2-17 Appendix A). Bighorn sheep metapopulations have been fragmented by highways, roads, railroads, and aqueducts. Major barriers to bighorn sheep movements are Interstate 10 and Interstate 40. Bighorn sheep likely do not cross these major interstate highways and apparently do not travel under bridges of these high-traffic-volume highways. The Colorado River Aqueduct is a major barrier in those places where it is above ground.

Within these metapopulations, bighorn sheep occur in small, isolated subpopulations known as demes. There are about nine demes in the Sonoran Metapopulation and about 28 demes in the Southern Mojave Metapopulation (Map 2-17 Appendix A). The size of demes can range from about 10 to 200 individuals, depending on many factors. Specific population trend data for the demes are not available, but some have declined in recent years (Vern Bleich, CDFG, pers. comm.).

Demes consisting of few sheep are more likely to experience extirpation than larger demes. Although the possibility of inbreeding in small demes exists, stochastic events are more likely to influence small populations than are genetic factors. Bighorn sheep move between demes, resulting in gene flow between demes, and provide opportunities for recolonization of vacant or formerly occupied areas. These movements between demes are considered vital to the maintenance of genetic variability necessary to sustain a viable metapopulation (Bleich et al. 1990, Schwartz et al. 1986) and to recolonizing of extirpated demes.

Transportation corridors of Highways 66, 62, 177, 95, and 78, the AT&SF Railroad (parallel to Old Highway 66) and the Eagle Mountain Railroad (scheduled for reactivation) inhibit bighorn sheep movements between demes. Nevertheless, bighorn sheep are known to cross these and other linear features such as transmission lines and fences (Vern Bleich, CDFG, pers. comm.). They even cross broad valleys (Bleich et al. 1990).

Desert bighorn sheep is a BLM California Sensitive Species, a State Fully Protected Species, and a State Game Species.

#### **Burro deer (*Odocoileus hemionus eremicus*)**

Burro deer is a subspecies of mule deer found in the Colorado Desert of Southern California (Map 3-7 Appendix A). They are found primarily along the Colorado River and in Desert Wash Woodland communities away from the River. Some burro deer are resident along the Colorado River, but a significant portion move into desert areas in response to water and forage. During the hot summers, water is critical, and deer concentrate along the Colorado River or the Coachella Canal where water developments have been installed and where the microphyll woodland is dense and provides good forage and cover. With late summer thundershowers and cooler temperatures, deer move away from the River and Canal up the larger washes into mountains or wash complexes in the foothills.

#### **Mountain Lion (*Felis concolor*)**

In the planning area, mountain lions inhabit primarily the low mountains and extensive microphyll washes in and around Chuckwalla Bench, Chuckwalla Mountains, Chocolate Mountains, Picacho Mountains, Milpitas Wash, Vinagre Wash, and other washes in that area (Map 3-6c Appendix A). Mountain lions generally require extensive areas of riparian or shrubby vegetation interspersed with irregular terrain, rocky outcrops, and community edges.

Within the planning area mountain lions are restricted to the southern Colorado Desert from Joshua Tree National Park south and east to the Colorado River. They are found in very low numbers primarily in the mountains and wash systems in Imperial County. Burro deer, the primary prey, are known to spend the hot summer and fall in riparian areas along the Colorado River and in dense microphyll woodlands near the Coachella Canal. In winter and spring they move up major washes north from the Coachella Canal and west



from the Colorado River. Presumably, mountain lions respond to these movements. It may be that mountain lions in the planning area are merely transient individuals wandering out of other areas and not part of a resident population of mountain lions.

Habitat fragmenting factors, such as Interstate Highways (especially Interstate 10) and aqueducts (especially the Coachella Canal), that affect the distribution and movements of burro deer are probably important to the distribution of mountain lions in the planning area. Deer populations along the Colorado River have declined as tamarisk has replaced native riparian vegetation. Mountain lion numbers have probably declined with this primary prey.

The mountain lion in the planning area is sometimes referred to as Yuma puma (f.c. browni). Under that name it is a State Species of Special Concern.

#### **California leaf-nosed bat (*Macrotus californicus*)**

California leaf-nosed bats occur in the deserts of California, southern Nevada, Arizona and south to northwestern Mexico. In California, they are now found primarily in the mountain ranges bordering the Colorado River Basin, with some records occurring as far west as the Eagle Mountains. In California, surveys showed about 20 maternity colonies and about the same number of winter roosts (Map 3-6c Appendix A). The two largest roosts (each sheltering 1500 bats in winter) are in mines in extreme southeastern California.

California leaf-nosed bats occur in lowland desert habitat in California in close proximity to desert wash vegetation. They are dependent on either caves or mines for roosting habitat. All major maternity, mating, and overwintering sites are in mines or caves.

Due to restrictive temperature requirements, California leaf-nosed bats seek out mines that provide roost temperatures of approximately 80°F. In the Colorado River Basin, all known winter roosts are in geothermally heated mine workings, and the areas used by the bats may be over a half-mile underground.

The primary factors responsible for the declines are roost disturbance, the closure of mines for renewed mining and hazard abatement, and the destruction of foraging habitat. The combination of limited distribution, restrictive roosting requirements, and the tendency to form large, but relatively few colonies make this species especially vulnerable.

California leaf-nosed bat is a State Species of Special Concern.

#### **Occult little brown bat (*Myotis lucifugus subspecies occultus*)**

Occult little brown bat is a medium-sized myotis that is difficult to distinguish from other *Myotis* species. In California, they are associated with desert riparian vegetation along the Colorado River. Females form large maternity roosts. Although males have been found associated with colonies in late summer, they are not present when the females are rearing a single young. They forage close to water and riparian vegetation, primarily on flies, moths, beetles, and other small flying insects.

They have a relatively limited distribution from the southwestern United States to central Mexico. In California, they are known from only a few localities along the Colorado River between Needles and Yuma (Map 3-6c Appendix A). The only maternity colony in California was located under a bridge near Blythe until 1945 when the bridge was demolished. It was the largest maternity colony ever known for this species. The species has not been seen in California since 1969. Occult little brown bats are probably extirpated from California, even though the species is the most common bat in the U.S.

In addition to destruction of its major roost site in California, the loss of riparian vegetation to agriculture and tamarisk along the Colorado River may also be a factor in the species' decline.

Occult little brown bat is a State Species of Special Concern.

#### **Cave myotis (*Myotis velifer*)**

Cave myotises are relatively large bats that occupy desert scrub, desert succulent shrub, microphyll woodland, and desert riparian habitats along the Colorado River (Map 3-6c Appendix A). They roost primarily in caves and mines but have also been found in buildings and under bridges.

Most historic records in California are from abandoned mines in the Riverside Mountains. The mines that once housed these large colonies no longer have them. Up to the 1950's, very large colonies were present in these mines from early April through August. Despite extensive survey work in the planning area over the past 25-30 years, there are currently only two known maternity roosts for cave myotis along the Colorado River: one with approximately 300 animals, and the other about 200. A mine in the Cargo Muchacho Mountains and a mine in the Riverside Mountains have large deposits of cave myotis guano, but surveys in 1993 showed none and few bats, respectively, at these sites.

The loss of extensive native vegetation to agriculture and tamarisk along the Colorado River may explain the dramatic declines of this species in California. The use of pesticides in the agricultural areas could have reduced the prey base and/or poisoned the bats.

Cave myotis is a USFWS Species of Special Concern.

#### **Fringed myotis (*Myotis thysanodes*)**

Fringed myotises are widespread in much of the West. They occur irregularly throughout the state, primarily in pinyon-juniper woodlands, coniferous forests, and oak woodlands, except in the Central Valley and the deserts, where they are known from only a few places. In the planning area, only two roosts in the Old Woman Mountains have been found. One of these is a significant maternity roost (Map 3-6d Appendix A).

Closure of mines could disturb the few desert sites known for the species. They are easily disturbed at roosting sites.

Fringed myotis has no special status.

**Pallid bat (*Antrozous pallidus*)**

Pallid bats are known from Cuba, Mexico, and throughout the southwestern and western United States (Map 3-6b Appendix A). Population trends are not well known, but there are indications of decline. Urbanization, destruction of old buildings, disturbance in caves and old mines, and eradication as a pest are threats to the species.

Pallid bat is a State Species of Special Concern.

**Townsend's big-eared bat (*Plecotus townsendii*)**

Townsend's big-eared bats are distributed throughout the western United States. Recent surveys show marked population declines for this species in many areas of California (Map 3-6b Appendix A). A combination of restrictive roost requirements and intolerance of roost disturbance or destruction has been primarily responsible for population declines of Townsend's big-eared bats in most areas. The tendency for this species to roost in highly visible clusters on open surfaces near roost entrances makes them highly vulnerable to disturbance. Roost loss in California has usually been linked directly to human activity (e.g., demolition, renewed mining, entrance closure, human-induced fire, renovation, or roost disturbance). The loss of foraging habitat is also a probable factor in declines of populations along the Colorado River, where the native floodplain community has been lost to agriculture and tamarisk infestation.

Townsend's big-eared bat is a State Species of Special Concern.

**Pocketed free-tailed bat (*Tadarida femorosaccus*)**

Despite only a limited number of records, pocketed free-tailed bats are known to occur in the desert from March through August, when they then migrate out of the area. They have an uneven distribution in the southwestern United States and Mexico. In California, they are found primarily in creosote bush and chaparral habitats in proximity to granite boulders, cliffs, or rocky canyons. Recent observations in California show that this species occurs at only isolated locations in the southern third of the state (Map 3-6b Appendix A).

Rockclimbing and pesticide spraying may be threats, but specific information is lacking.

Pallid bat is a State Species of Special Concern.

**Western mastiff bat (*Eumops perotis*)**

Historical records for the western mastiff bat were primarily in southern California between the Colorado River to the coast, but populations are now known to occur throughout the state (Map 3-6b Appendix A). Current population trends are not known. They are found in a variety of plant communities, but they roost in cliff faces of granite, sandstone, or basalt.

Potential threats to the roosting and foraging habitat of western mastiff bats include urban expansion, rockclimbing, blasting, vandalism, extermination for pest control, and pesticide spraying. These large, noisy bats are vulnerable to the hysteria which often surrounds bat colonies.

Western mastiff bat is a State Species of Special Concern.

#### **Colorado Valley Woodrat (*Neotoma albigula venusta*)**

The range of Colorado Valley woodrat is from southern Nevada, southeastern California, northeastern Baja California, to western Arizona (Map 3-6c Appendix A). Historically, the range of the Colorado Valley woodrat appears to have changed little, even though portions of the range are lost to agriculture and urban development.

Colorado Valley woodrats (California subspecies of White-throated woodrat) are found in a variety of habitats including low desert, pinyon-juniper woodlands, and desert-transition chaparral. Areas such as washes where organic debris gathers are particularly attractive. They are often found where prickly pear cactus and mesquite occur. In rocky areas, they prefer using crevices in boulders for cover and nest sites.

The most important threats are the loss of habitat and reduction in habitat quality by removal of nest material such as cactus and woodland. Habitat quality could be reduced by fires or conversion to exotic annuals.

The Colorado Valley woodrat is a state Species of Special Concern.

#### **Mountain Plover (*Charadrius montanus*)**

Mountain plovers do not breed in California, but they winter from northern California south to north-central Mexico and east to central Texas. In California they are found in the Central Valley, Antelope Valley, San Jacinto Valley, Imperial Valley, and Palo Verde Valley (Map 3-6d Appendix A). They begin to arrive on their wintering grounds in southern California in October. On their wintering grounds plovers forage for ground insects in loose flocks ranging from 2 to over 1,000 birds. Individuals change flocks and foraging areas frequently during the winter. Mountain plovers run or freeze from perceived harm rather than fly. Most individuals head northward around mid-February to mid-March. Migratory routes are unknown.

The Mountain Plover is proposed for federal listing as a threatened species.

#### **Golden eagle (*Aquila chrysaetos*)**

Golden eagles are the largest raptor in the planning area. They forage over rolling foothills and valleys and nest on cliffs in mountainous terrain (Map 3-6e Appendix A). Golden Eagles are found throughout North America. They are uncommon, permanent residents throughout the state, but they are most common in Southern California. In the NECO Planning Area only a few eyries are known.

Some golden eagles migrate through the NECO Planning Area in spring and fall. Some may winter in and near mountains. A few nest in the NECO Planning Area. Nests, referred to as eyries, are usually on secluded

cliffs with overhanging ledges. The large platform of sticks at the eyrie may be used for many years. Usually two young are raised in late spring and early summer.

The major threat is disturbance at the eyrie, especially in the early stages of nesting.

Golden eagle is a State Species of Special Concern and is protected by the Bald Eagle Protection Act.

#### **Ferruginous hawk (*Buteo regalis*)**

Ferruginous hawks do not breed in California. They migrate from their breeding grounds in the plains of Canada and the U. S. south to wintering grounds in eastern Colorado and western Kansas to southern Texas. They winter in very low numbers throughout the West. They are known to migrate through California in September and April. They overwinter in very small numbers from mid-October to mid-March in the lower Colorado River Valley, Yuma Basin, West Mesa, and the agricultural areas of Imperial Valley (Map 3-6e Appendix A).

Ferruginous hawk is a State Species of Special Concern.

#### **Prairie Falcon (*Falco mexicanus*)**

Prairie falcons breed throughout the arid West from southern Canada to central Mexico. The overall distribution appears to be stable. In the 1970's, 35 eyries were found within the California Desert District with approximately 12 in the planning area. It is unknown whether these eyries are currently occupied.

Prairie falcons are uncommon residents and migrants of open grassland, savannah, and desert scrub habitats. They are found in areas of the dry interior where cliffs provide secure nesting sites. In the desert they are found in all vegetation types, although sparse vegetation provides the best foraging habitat (Map 3-6d Appendix A).

Within the planning area it is not known to what extent they move seasonally, but wintering populations in the planning area are larger than breeding populations.

Historic impacts have included eggshell thinning from pesticide residues, conversion of habitat to agriculture, robbing of eyries by falconers, and shooting.

Prairie falcon is a State Species of Special Concern.

#### **Elf owl (*Micrathene whitneyi*)**

The elf owl breeding range extends from southwestern California east to Texas and south into Mexico. Historically, the elf owl was found along the lower Colorado River and at oases as far west as Cottonwood Springs in Joshua Tree National Park (1940-1970) and Corn Spring (latest in 1994) in the Chuckwalla Mountains. Currently, its California range is only along the Colorado River from just north of Needles to Imperial Dam. They are very rare in California and occur only in spring and summer along the Colorado

River Valley (Map 3-6d Appendix A). Most of the suitable riparian habitat has been cleared for agriculture or lost to tamarisk since the mid-1970's.

The loss of mature, riparian habitat is the most important reason for this species' decline. Habitat loss has consisted of clearing and flooding for agriculture and water management and invasion by tamarisk. Frequent fires have also reduced suitable habitat and increased tamarisk.

The elf owl is state-listed as an endangered species.

#### **Burrowing owl (*Speotyto cunicularia*)**

Burrowing owls range from Texas west to California and from southern Canada south into Mexico. In northern climates they migrate south into the area in the winter. Burrowing owls were formerly common throughout much of California prior to the 1940's, but populations in central and southern California have declined in many areas due to agricultural development and urbanization. Little is known of the status of the burrowing owl in the California desert. Concentrations probably occur in agricultural drainage ditches of the planning area, just as they do throughout the Imperial and Coachella Valleys (Map 3-6e Appendix A).

Threats to burrowing owls are habitat conversion and destruction of ground squirrel burrows. Other threats may be accumulated pesticides, direct mortality from ground squirrel poisons, roadside shooting, and burrow destruction from canal and road maintenance.

The burrowing owl is a State Species of Special Concern and a USFWS Sensitive Species.

#### **Gila woodpecker (*Melanerpes uropygialis*)**

Gila woodpeckers range from the extreme southeast of California through Arizona south into western Mexico. They were formerly found along the entire lower Colorado River and in cottonwood groves in Imperial Valley. Now the species is found only at scattered locations along the Colorado River from Needles to Yuma, and they have disappeared in the Imperial Valley, except for a few pairs in Brawley. Within the planning area, Gila woodpeckers were known to occur in desert riparian washes (microphyll woodland) extending from the Colorado River as far as one mile away, but they are currently known only from scattered groups on the riparian corridor of the Colorado River (Map 3-6d Appendix A). They are more widespread in Arizona.

Major threats to Gila woodpecker are loss of habitat to agricultural development, urbanization, tamarisk infestation, and competition with European starlings for nest sites.

The Gila woodpecker is state-listed as an Endangered Species.

#### **Vermilion flycatcher (*Pyrocephalus rubinus*)**

Vermilion flycatchers are small flycatchers with the male having a brilliant vermilion-colored front and head. They live in large riparian areas with a high canopy and grassland under-story. They are sometimes found in parks and golf courses that have this same structure.

Habitat loss is the primary reason for declines in California. Nest parasitism by cowbirds may also be a factor.

Vermilion flycatcher is a State Species of Special Concern.

**Willow flycatcher (*Empidonax traillii*) and Southwestern willow flycatcher (*Empidonax traillii extimis*)**

Willow flycatchers are found throughout most of the U.S. The southwestern subspecies nests in southern California, Arizona, New Mexico, western Texas, and northwestern Mexico. Little is known about migration or wintering in the NECO Planning Area.

Southwestern willow flycatchers have declined precipitously throughout the southwest. Major causes for decline are the loss of riparian habitat to urbanization, agriculture, and tamarisk infestation. On the breeding grounds, brood parasitism by cowbirds is common.

The Southwestern willow flycatcher is a federally Endangered Species, and the willow flycatcher is a State-listed Endangered Species.

**Bendire's Thrasher (*Toxostoma bendirei*)**

Bendire's thrashers arrive in the breeding area from late March to early April. Some leave the breeding grounds by the end of July, with others departing through August. They migrate to southern Arizona, southwestern New Mexico, or Mexico for the winter. Wintering individuals have also been observed at the Salton Sea, coastal California, Bard, and Lancaster.

The largest breeding area in California lies just east of Essex from the south side of the Piute Mountains to the center of the Old Woman mountains. It is disjunct from another large breeding area near Cima Dome. The Essex population area lacks Joshua trees, but has dense stands of Mojave yucca and other succulents. There are a few records of Bendire's thrashers from JTNP in the planning area.

Bendire's thrasher is a State Species of Special Concern.

**Crissal Thrasher (*Toxostoma crissale*)**

Crissal thrashers occur from southwestern Utah, southern Nevada, and southeastern California east to southern New Mexico and southwestern Texas and south into Sonora. They are found along the Colorado River Valley, but elsewhere in California populations are highly local and uncommon (Map 3-6e Appendix A). Crissal thrashers are also found in Milpitas Wash, Indian Wash, and Chuckwalla Bench and in the Chuckwalla Dune Thicket. Inventory data elsewhere are scant. Agricultural and urban development have greatly reduced the distribution in the Coachella and Imperial Valleys.

Agricultural development, urbanization, and tamarisk invasion have greatly reduced numbers. The species is highly vulnerable to noise and other disturbances. Crissal thrashers can be parasitized by brown-headed cowbirds, but they will eject cowbird eggs from their nests.

Crissal thrasher is a State Species of Special Concern.

**LeConte's Thrasher (*Toxostoma lecontei*)**

Le Conte's thrashers are distributed from the Mojave Desert east into southern Utah and northern Arizona, and south into northern Mexico. A disjunct population occurred in the San Joaquin Valley, but most of that range has been lost to agricultural and urban development. Le Conte's thrashers are distributed throughout the planning area, but many areas with suitable habitat are unoccupied (Map 3-6e Appendix A).

LeConte's thrasher is a State Species of Special Concern.

**Yellow warbler (*Dendroica petechia*)**

Yellow warblers formerly nested in the Colorado River Valley, but they no longer breed there or elsewhere in the planning area. They migrate commonly through the planning area near the end of March through mid-April and again in September and October (Map 3-6e Appendix A). These migrants will stop at any size woodland or oases. Regularly spaced woodlands and oasis with open water for drinking are essential for migrants. A few yellow warblers spend the winter in the planning area. Found throughout the U.S., populations in the West have experienced severe declines. For example, they have been totally extirpated from the California side of the Colorado River Valley.

Yellow warbler is a State Species of Special Concern.

**Chuckwalla (*Sauromalus obesus*)**

Chuckwallas occur throughout the Mojave and Colorado Deserts in California, Nevada, Utah, Arizona, and Mexico. They are found in appropriate habitat throughout the planning area (Map 3-6a Appendix A). Little is known about population size or trends. Primary threats to the species are from overcollecting and destruction of habitat by collectors.

The Chuckwalla has no special designations.

**Colorado desert fringe-toed lizard (*Uma notata*)**

Colorado desert fringe-toed lizards are found from northeast San Diego County southward through Imperial County, east to the Colorado River, and south into Baja California. Within the planning area they occur only in the extreme south adjacent to the Algodones Dunes (Map 3-6a Appendix A). Little is known about trends in population size or distribution.

Their sandy habitats are fragile and have been heavily impacted by off-road vehicles. Their diving-under-sand escape response makes them particularly vulnerable to injury from off-road vehicles. Potential indirect impacts on habitat are associated with the disruption of ecosystem processes involving sand sources, wind transport, and sand corridors.

Colorado desert fringe-toed lizard is a State Species of Special Concern.



### **Mojave fringe-toed lizard (*Uma scoparia*)**

Mojave fringe-toed lizards are found only in California and a small area of western Arizona, where they are restricted to dune habitats in the deserts of Los Angeles, Riverside, and San Bernardino Counties in California and La Paz County in Arizona. In the planning area they are known from the following areas: Bristol Dry Lake, Cadiz Dry Lake, Dale Dry Lake, Rice Valley, Pinto Basin, Palen Dry Lake, and Ford Dry Lake (Map 3-6a Appendix A).

Impacts are similar to those described for the Colorado Desert fringe-toed lizard. Mojave fringe-toed lizard is a State Species of Special Concern.

### **Flat-tailed horned lizard (*Phrynosoma mcallii*)**

Flat-tailed horned lizards occur throughout the southern portion of the Colorado Desert from the Coachella Valley southward and eastward into Arizona and south into neighboring Sonora. Large portions of the historic range have been lost to inundation of the Salton Sea, urbanization, and agricultural development. Within the planning area, suitable habitat occurs only along the southern edge (Map 3-6a Appendix A). The subpopulation that occurs in the planning area is not in any of five Management Areas designated as part of an overall strategy to conserve the species. Despite considerable effort over the past 15 years, population sizes and trends are unknown due to difficulties in finding an effective population estimation procedure.

The flat-tailed horned lizard is a BLM California Sensitive Species and a State Species of Special Concern.

### **Desert rosy boa (*Lichanura trivirgata*)**

Although widely distributed, rosy boas are uncommon throughout their range. Desert rosy boas are found only in southeastern California and southeastern Arizona (Map 3-6e Appendix A). The most significant threats are from overcollection for the pet trade and the destruction of habitat by collectors.

Desert rosy boa has no special designation.

### **Desert tortoise (*Gopherus agassizii*)**

Desert tortoises are widely distributed in the desert, from as far north as Olancho south to the Mexican border and from the Colorado River west to near Lancaster. The Desert Tortoise (Mojave Population) Recovery Plan shows two major populations or *recovery units* in the planning area. These are the Northern Colorado Desert and Eastern Colorado Desert Recovery Units. The highest densities of tortoises are in Chemehuevi and Ward Valleys, on Chuckwalla Bench, and in JTNP. The USFWS has designated *critical habitat* for the desert tortoise (Map 3-5 Appendix A). Populations have declined precipitously in some parts of the range, such as Chuckwalla Bench. Causes for declines include habitat loss, diseases, excessive predation on young tortoises by ravens, collecting, shooting, highway and vehicle kills, and other factors.

The desert tortoise is a Federal Threatened Species (Mojave Population only) and State-listed Threatened Species.

**Couch's spadefoot toad (*Scaphiopus couchi*)**

The range of Couch's spadefoot extends from extreme southeastern California eastward through Arizona, New Mexico, Texas, and Oklahoma, and southward into Mexico. In California, they occur in the planning area from Chemehuevi Wash south to the Ogilby area in Imperial County (Map 3-6a Appendix A).

The population size is unknown. This species is of concern because it has a small range in California, populations are declining in other states, it has a precarious life history, and the capability of sites to impound runoff is easily destroyed. Road construction has created some pond habitat in Imperial County, but these are often subject to off-highway vehicle driving which can destroy soil impoundment capability. In addition to habitat disturbance, vehicles create noise similar to rainfall, resulting in emergence when conditions are not favorable. Vehicles may also crush vegetative debris which is essential as daytime cover.

The Couch's spadefoot toad is a State Species of Special Concern.

**3.4.3 Special Status Plants**

The planning area contains 32 special status plant species, one of which is federally listed as endangered. All of these plants have federal or state designations as threatened, candidate, or sensitive. Table 3-5 names these plants and briefly describes the habitats in which they are found. The known or predicted ranges of these plants are shown on Maps 3-7a through 3-7d Appendix A.

**Table 3-5. Special Status Plant Species in the NECO Planning Area**

<i>Scientific name</i> Common name Family CNPS List /Fed. Or State Status <sup>1</sup>	Brief description and known locations (note that a single record can include several individual plants). Plant communities are from Holland (1986) and Sawyer and Keeler-Wolf (1995).
<i>Acleisanthes longiflora</i> Angel trumpet NYCTAGINACEAE 2/ none	A perennial herb associated with Sonoran Desert Scrub (Brittlebush Series). Found in mountainous areas on rocky, carbonate/limestone soils. It is common elsewhere but rare in California. There is one record just outside the Plan boundary NE of Blythe.
<i>Astragalus insularis var. harwoodii</i> Harwood's rattleweed FABACEAE 2/ none	An annual herb associated mainly with Sonoran Desert Scrub (Desert Sand-verbena Series) and distributed throughout the Colorado desert. Little is known about its habitat preference or distribution within California. We have six records for this plant, scattered throughout the southern two thirds of the plan area.
<i>Astragalus lentiginosus var. Borreganus</i> Borrego Milkvetch FABACEAE 4/ none	An annual herb that prefers fine sandy soils associated with Sonoran Desert Scrub (Desert Sand-verbena Series) and Dunes. We have four known locations within the Plan area, all in the Cadiz Valley/Iron Mountains/Danby Dry Lake region.

<p><i>Scientific name</i> Common name Family CNPS List /Fed. Or State Status <sup>1</sup></p>	<p><b>Brief description and known locations (note that a single record can include several individual plants). Plant communities are from Holland (1986) and Sawyer and Keeler-Wolf (1995).</b></p>
<p><i>Astragalus lentiginosus var. coachellae</i> Coachella Valley milkvetch FABACEAE 1B/ FE and BLM Sensitive</p>	<p>A winter annual or short-lived perennial associated with low-elevation Sonoran Desert Scrub (Desert Sand-verbena Series). It prefers the fine sandy soils of dunes and sandfields. This is an aeolian endemic with fewer than 25 occurrences in the Coachella Valley and four recent records in the Chuckwalla Valley. Natural disturbance from fluvial or aeolian processes are apparently necessary for seedling establishment. Blooming period is from February to May. In the Coachella Valley, heavy vehicle use can destroy plants, and development can result in loss of habitat or disruption of natural processes. The sites in Chuckwalla Valley may also be subject to vehicle use.</p>
<p><i>Bouteloua trifida</i> Red grama POACEAE 2 / none</p>	<p>A tufted perennial grass found at higher elevations and associated with Mojavean Pinyon and Juniper Woodland (Singleleaf Pinyon Series, Utah Juniper Series). It is found in mountainous areas on rocky, carbonate/limestone soils and in crevices. It is common elsewhere but rare in California. We have one record from the Whipple Mountains and one from the Turtle Mountains.</p>
<p><i>Calliandra eriphylla</i> Fairyduster FABACEAE 2 / none</p>	<p>A deciduous, perennial shrub of Desert Dry Wash Woodlands (Blue Palo Verde-Ironwood-Smocketree Series), this plant prefers the sandy, rocky soils of washes, gullies and mesas. It is a species of the Sonoran desert and ranges into Arizona and Mexico. We have 21 records for this species, all from Imperial Co.</p>
<p><i>Carnegiea gigantea</i> Saguaro CACTACEAE 2 / none</p>	<p>A large succulent shrub of Sonoran Desert Scrub (Foothill Palo Verde-Saguaro Series) and a signature species of the Sonoran Desert. It prefers rocky soils or gravelly slopes and flats on mountains and bajadas. We have 13 records, all from within 15 miles of the Colorado River.</p>
<p><i>Castela emoryi</i> Crucifixion thorn SIMAROUBACEAE 2 / none</p>	<p>A deciduous shrub of Sonoran Desert Scrub and Mojave Desert Scrub (Crucifixion Thorn Series, Mesquite Series). It prefers fine, slightly alkaline or gravelly soils along playa margins. It is found in locally restricted sites in the southern Mojave and Sonoran deserts. There are 13 records throughout the Plan area.</p>
<p><i>Colubrina californica</i> Los Animas colubrina or snakebush RHAMNACEAE 2 / none</p>	<p>An evergreen shrub associated with Sonoran Desert Scrub (Creosote Bush Series) and Joshua Tree Woodland. It prefers dry canyons and sandy, gravelly soils. There are 27 records, mostly around the Chocolate Mountains.</p>
<p><i>Condalia globosa pubescens</i> Spiny abrojo RHAMNACEAE 4 / none</p>	<p>A deciduous, spreading shrub of Sonoran Desert Scrub (Creosote Bush Series). It prefers sandy gravelly soils in low-elevation canyons and ravines. We have 47 records from the Chuckwalla Bench through the Chocolate Mountains.</p>

<p><i>Scientific name</i> Common name Family CNPS List /Fed. Or State Status <sup>1</sup></p>	<p><b>Brief description and known locations (note that a single record can include several individual plants). Plant communities are from Holland (1986) and Sawyer and Keeler-Wolf (1995).</b></p>
<p><i>Coryphantha alversonii</i> Foxtail cactus CACTACEAE 4 / none</p>	<p>(formerly <i>Escobaria vivipera</i> var. <i>alversonii</i>). A low-lying cactus associated with Sonoran and Mojave Desert Scrub (Creosote Bush Series). This plant prefers rocky soils on hills, mountains, and bajadas. We have 32 records in NECO, mainly in a swath across the middle of the Plan Area.</p>
<p><i>Croton wigginsii</i> Wiggins' croton EUPHORBIACEAE 2 / SR</p>	<p>A perennial shrub associated with Sonoran Desert Scrub (Desert Sand-verbena Series) and Desert Dunes. It prefers the fine sandy soils of dunes and sandfields. It is endemic to the Algodones Dunes. There are three records for this species, all to the west of the NECO boundary</p>
<p><i>Cryptantha holoptera</i> Winged cryptantha BORAGINACEAE 4 / none</p>	<p>An annual herbaceous plant of Sonoran and Mojave Desert Scrub (Creosote Bush Series). It seems to prefer sandy and gravelly soils on hills and mountains. We do not have any records for this species in the NECO area.</p>
<p><i>Ditaxis clariana</i> Glandular ditaxis EUPHORBIACEAE 2 / none</p>	<p>A perennial herb of low-elevation Sonoran Desert Scrub (Creosote Bush Series, Desert Sand-verbena Series), this plant seems to prefer rocky, gravelly soils on hills and along washes. Its distribution is poorly understood. We have four points for this species, scattered throughout the Plan Area.</p>
<p><i>Ditaxis serrata</i> var. <i>californica</i> California ditaxis EUPHORBIACEAE 3 / none</p>	<p>(previously <i>Ditaxis californica</i>). This perennial herbaceous plant is associated mainly with Sonoran Desert Scrub (Brittlebush Series, Creosote Bush Series, White Bursage Series) and Desert Dry Wash Woodlands. It generally is found in the rocky, gravelly soils of washes, mountains, hills, and canyons. Like <i>D. clariana</i>, its distribution is poorly understood. We have 17 records, located inside or to the south of JTNP.</p>
<p><i>Echinocereus engelmannii</i> var. <i>howei</i> Howe's hedgehog cactus CACTACEAE 1b / BLM Sens.</p>	<p>A low-lying succulent shrub associated with Sonoran Desert Scrub and Mojave Desert Scrub (Creosote Bush Series). Little is known about the range or habitat preferences of this subspecies, primarily because of identifications problems with closely related taxa. There are three confirmed records just outside the northern NECO boundary.</p>
<p><i>Koeberlinia spinosa</i> ssp. <i>tenuispina</i> Crown-of-thorns KOERBERLINIACEAE 2 / none</p>	<p>A deciduous shrub associated with Sonoran Desert Scrub and Desert Dry Wash Woodland (Blue Palo Verde-Ironwood-Smocketree Series). This species is found in rocky or gravelly soils in washes and ravines. We have 10 records for this species, all south of I-10 and most in the Chocolate Mountains inside CMAGR.</p>
<p><i>Matelea parvifolia</i> Spearleaf ASCLEPIADACEAE 2 / none</p>	<p>This plant is a perennial herb of Sonoran and Mojave Desert Scrub (Creosote Bush Series). It is associated with gravelly, rocky soils in hills and mountains. There are four records in the Plan Area: one near Cottonwood Springs (JTNP), two on the Chuckwalla Bench, and one in the Orocopia Mountains.</p>

<p><i>Scientific name</i> Common name Family CNPS List /Fed. Or State Status <sup>1</sup></p>	<p><b>Brief description and known locations (note that a single record can include several individual plants). Plant communities are from Holland (1986) and Sawyer and Keeler-Wolf (1995).</b></p>
<p><i>Monardella robisonii</i> Robison's monardella LAMIACEAE 1b / BLM Sens</p>	<p>This plant is a perennial herb found only in and around the Little San Bernardino Mountains associated with Sonoran Desert Scrub and Mojavean Pinyon/Juniper Woodland. Questions about its status as a species separate from another <i>Monardella</i> in the area have been raised, but not enough is known enough about the species to resolve the issue. It is found in gravelly, rocky soils. There is one record for this species in the Sheephole Pass area.</p>
<p><i>Opuntia munzii</i> Munz' cholla CACTACEAE 1b / BLM Sens</p>	<p>A cactus associated with Sonoran Desert Scrub (Unknown Series). This species is actually a stabilized hybrid and prefers sandy gravelly soils along washes canyon walls. The Chuckwalla Bench is the northern edge of the species range. We have 45 records for this species, mostly within CMAGR.</p>
<p><i>Opuntia wigginsii</i> Wiggins' cholla CACTACEAE 3 / none</p>	<p>An upright cactus associated with Sonoran Desert Scrub (Unknown Series). It seems to prefer low-elevation flats and sandy, gravelly soils. We have only one record for this species, in the Palo Verde Valley.</p>
<p><i>Palafoxia arida</i> var. <i>gigantea</i> Giant Spanish-needle ASTERACEAE 1b / BLM Sens</p>	<p>This is an annual or perennial herb associated with Sonoran Desert Scrub and Desert Dunes (Desert Sand-verbena Series). It requires fine, sandy soils and its distribution is restricted to the Algodones Dunes area. There are six records for this plant, one of which lies inside the NECO boundary.</p>
<p><i>Penstemon albomarginatus</i> White-margined beardtongue SCROPHULARIACEAE 1b / BLM Sens</p>	<p>An herbaceous perennial associated with Mojave Desert Scrub and Desert Dunes (Desert Sand-verbena Series). It requires stabilized, deep sandy and slightly alkaline soils. In California it occurs only in a four-mile long wash that crosses I-40. We have one record for this species in NECO.</p>
<p><i>Pholisma sonorae</i> Sand food LENNOACEAE 1b / BLM Sens</p>	<p>A parasitic perennial herb associated exclusively with desert dunes (Desert Sand-verbena Series). This plant requires fine, sandy soils and is restricted to the Algodones Dunes. There is one record for this species, outside and to the west of the NECO boundary.</p>
<p><i>Pholistoma auritum</i> var. <i>arizonicum</i> Arizona pholistoma HYDROPHYLLACEAE 2 / none</p>	<p>A succulent annual herb associated with Sonoran Desert Scrub (Creosote Bush Series). This plant prefers gravelly soils and mountains. In California it is found only in the Whipple Mountains, where there is one record.</p>
<p><i>Physalis lobata</i> Lobed ground-cherry SOLANACEAE 2 / none</p>	<p>An herbaceous perennial associated with Sonoran and Mojave Desert Scrub (Series Unknown). It is found along playa margins or where ponding occurs in washes on granitic soils. The southern edge of its range occurs in the NECO Plan Area, where there are two records in the Sheephole Pass area: one just outside the NECO boundary in the same area, and one record in Ward Valley.</p>
<p><i>Proboscidea althaeifolia</i> Desert unicorn plant MARTYNIACEAE 4 / none</p>	<p>A spreading, perennial herb associated with the Sonoran Desert Scrub (Creosote Bush Series). It is primarily found in sandy soils along washes. We have 13 records in NECO, in Milpitas Wash, and the Chuckwalla and Chemehuevi Valleys.</p>

<i>Scientific name</i> Common name Family CNPS List /Fed. Or State Status <sup>1</sup>	Brief description and known locations (note that a single record can include several individual plants). Plant communities are from Holland (1986) and Sawyer and Keeler-Wolf (1995).
<i>Salvia greatae</i> Orocopia sage LAMIACEAE 1b / BLM Sens	An evergreen shrub associated with Sonoran Desert Scrub and Desert Dry Wash Woodland (Creosote Bush Series, Blue Palo Verde-Ironwood-Smocketree Series). This species prefers sandy gravelly soils and is found along dry washes, alluvial slopes and fans. It is known only from the Orocopia Mountains, where we have 26 records.
<i>Senna covesii</i> Coves' cassia FABACEAE 2 / none	A low, perennial herb associated with Sonoran Desert Scrub (Series Unknown). It is found along dry washes and slopes and prefers sandy soils. Its distribution is poorly understood. We have three records in the Chuckwalla Mountains and one record in the Whipple Mans.
<i>Stylocline sonorensis</i> Mesquite neststraw ASTERACEAE 1a / none	A low-lying herbaceous annual of Sonoran Desert Scrub (Series Unknown). It prefers sandy soils in open washes and dry slopes. It has not been seen since 1930 in California and is possibly extirpated from the state, although it has a disjunct distribution in other desert states. The 1930 record was from Hayfield Dry Lake.
<i>Wislizenia refracta ssp. palmeri</i> Jackass clover CAPPARACEAE 2 / none	An erect annual associated with low-elevation Desert Chenopod Scrub, Sonoran Desert Scrub, and Desert Dunes (Allscale Series, Bush Seepweed Series, Desert Sand-verbena Series). It prefers sandy, alkaline soils along playas or in sandy flats. It is toxic but seldom eaten and valued as a honey plant. All eight NECO records for this species are in the Palen Dry Lake and Dunes area.
<i>Xylorhiza cognata</i> Mecca-aster ASTERACEAE 1b / BLM Sens.	A perennial shrub associated with Sonoran Desert Scrub (Creosote Bush Series). Rare and found only in Riverside Co., this species prefers low-elevation dry canyons and gypsum, clay soils. There are seven records for this species, all from the Mecca Hills.

<sup>1</sup> Sensitivity classifications developed by the California Native Plant Society, Pavlik 1994, and federal or state status. The codes are described as follows:

CNPS 1a = Extinct

CNPS 1b = Rare in California and elsewhere

CNPS 2 = Rare in California but common elsewhere

CNPS 3 = Review list (need more information)

CNPS 4 = Watch list (plants of limited distribution)

FE = Federal Endangered

BLM Sens. = BLM Sensitive, includes all CNPS 1b plants, CNPS 2 plants that are locally threatened or in unusual populations, plants that are newly described and likely to be listed as CNPS 1b, or other compelling criteria.

SR = State Rare

### 3.4.4 Natural Communities

The natural communities found in the planning area are subdivisions of the Sonoran and Mojave desert floras. In geologic terms, both regions are relatively young. Evidence from ancient woodrat middens reveals that the entire California desert was dominated by pinyon-juniper woodlands as recently as 9,000 years ago (Axelrod 1995). During the late Pliocene and Quaternary, the Mojave ecosystem gradually lost more dry-

adapted species, while the Sonoran ecosystem continued to add new species as a result of fluctuating glacial-pluvial climates and localized mountain building during the Quaternary (Axelrod 1995).

Invasion of exotic plants has degraded most natural communities in the southwestern U.S. Common species include tamarisk (*Tamarix* sp.), Mediterranean splitgrass (*Schismus barbatus*), red brome (*Bromus madritensis rubens*), storksbill (*Erodium* sp.), Tournefort's mustard (*Brassica tournefortii*). In the planning area, tamarisk occurs as scattered plants in Desert Wash Woodland, Playas, and Seeps and Springs communities. Tamarisk trees can lower water tables or soil moisture sufficiently to eliminate native riparian vegetation around Seeps and Springs.

Exotic grasses such as Mediterranean splitgrass and red brome form a complete ground cover in some places, where they have displaced native annual and perennial grasses and forbs. There are indications that the increase in exotic annual grasses might be enhanced by nitrogen deposition from air pollution originating outside of the planning area (e.g., Los Angeles Basin, Coachella Valley) (Brooks 1998, Allen et al. 1997, Environmental Protection Agency 1996). There is some evidence that disturbances such as livestock grazing, OHV use, and fire have contributed to the spread of exotic annuals (see Photos #4 and #6 Appendix Q) (Brooks 1998, Malo and Suarez 1995).

We have chosen to use the Holland vegetation classification system developed for The Resources Agency in the early 1980's (Holland 1986). The eight Holland community types mapped for the NECO Planning Area (Map 3-3 Appendix A), listed in decreasing order by acreage are: Sonoran Desert Scrub, Mojave Desert Scrub, Desert Dry Wash Woodland, Playas, Developed Areas, Sand Dunes, Desert Chenopod Scrub, and Pinyon and Juniper Woodland. Four of these, Desert Dry Wash Woodland, Playas, Sand Dunes and Desert Chenopod Scrub, are considered sensitive.

### **Sonoran Desert Scrub**

Sonoran Desert Scrub, or Creosote Bush, is characterized by widely spaced shrubs, 0.5 to 3 yards tall, on well-drained secondary soils of slopes, fans, and valleys. The growing season is from winter to early spring, with a flowering period for ephemerals in late February to March, depending on rainfall. It is the dominant plant community below 3,000-foot elevation throughout the Colorado desert, occurring from the Little San Bernardino Mountains south and east into Baja California (see photos #3 and #4 Appendix Q).

Sonoran Desert Mixed Scrub, another type of Sonoran Desert Scrub, includes members of the cactus and agave families and is generally found above 1,000-foot elevation on rocky, well-drained slopes and baguets. Succulent scrub areas typically have higher floristic and structural diversity than surrounding areas, which attract more wildlife.

Sonoran Desert Scrub is the dominant community type within the NECO Planning Area, covering 3.8 million acres, or 69 percent of the total area. The large majority of its distribution (86 percent) is on public lands. Major threats to this community type include fire, grazing, off-road vehicles, and invasions of alien species.

### **Mojave Desert Scrub**

Mojave Desert Scrub can be found from Death Valley to the Little San Bernardino Mountains in California and east into southern Nevada and northwestern Arizona. Mojave Desert Scrub typically occurs on well-drained, non-alkaline soils of desert flats, baguets, and slopes, and is generally not found above 4,000-5,000 foot elevation. Mojave Desert Scrub is similar in appearance to Sonoran Desert Scrub, but generally occurs in places of lower winter temperatures and with a correspondingly later growth and flowering season (late March to April for the ephemerals). Like Sonoran Desert Scrub, there are two distinct annual floras for the winter and summer seasons.

Another subtype of Mojave Desert Scrub in the Palen area, Mojave Mixed Scrub and Steppe, occurs on shallow granitic or sandy soils on slopes between 2,000 and 5,000 foot elevation. A third subtype, Mojave Wash Scrub, occurs in some washes.

Mojave Desert Scrub covers approximately 14.5 percent (nearly 800,000 acres) of the NECO Planning Area. Seventy-one percent of its distribution occurs on public lands, and 49 percent occurs within BLM or NPS wilderness areas. Threats to this community are similar to those for Sonoran Desert Scrub.

### **Desert Dry Wash Woodland**

Desert Dry Wash Woodland, also called microphyll woodland, consists of drought-deciduous, small-leaved (microphyllous), mostly leguminous trees of riparian or wash areas. The trees can reach 30 feet or more in height, but typically do not exceed 15 feet. Some assemblages are very dense woodlands, while others are more open and dispersed. This community is typically found in sandy or gravelly washes or adjacent baguets under 2,500 foot elevation throughout the Mojave and Colorado Deserts (see photos # 5 and #6 Appendix Q).

Large expanses of Desert Dry Wash Woodland can be found east of Algodones Dunes, Milpitas Wash, within CMAGR, McCoy Wash, and at the east end of Chuckwalla Bench. Desert Dry Wash Woodland becomes less common and constricted to long, narrow strips in the northern half of the planning area. Overall, the Desert Dry Wash Woodland community covers approximately 675,000 acres (12.3 percent) of the planning area. Seventy-nine percent of its mapped distribution lies within public lands, including 20 percent within CMAGR. This plant community is considered sensitive by the California Resources Agency. Wildlife species richness is much higher in this than other community types in the desert, and this community is slow to recover from disturbance. Threats include invasive exotics (particularly *Tamarix*), impacts related to heavy recreational use, and altered water flows.

### **Playas**

Each closed basin in the California desert contains a playa, or dry lake bed. This community occurs at lower elevations at the edges or interior of ancient lakebeds, or where groundwater is close to the surface and heavily mineralized. Plants in this type of environment tend to be low, microphyllous species which exhibit varying degrees of succulence, and are able to tolerate salts and periodic flooding. Chenopod Scrub is always associated with playas, but not all playas support chenopod scrub, which is mapped as a separate community (see below, and see photo #7 Appendix Q).



There are six major dry lake beds totaling 8,700 acres (1.6 percent of the planning area), 73 percent of which is on public lands. Each lake has a different character and use. Danby Dry Lake has a “puffy” surface composed of clay and salt mixtures, while Bristol Lake has a layer of saline water below a thin clay surface. Small mineral and salt mining operations operate at Bristol, Cadiz, and Danby Lakes. Although relatively barren, playas are a unique habitat that is considered sensitive by the state Resources Agency. Playas provide habitat for rare and endemic (i.e., found only at that place) invertebrates such as fairy shrimp. They are resistant to change from small impacts, but their flora and fauna may be affected greatly by heavy impacts. Plants and animals reside mostly in a thin layer at the surface.

### **Sand Dunes**

Most of the mapped “dunes” are stabilized or partially stabilized desert dunes, where sand accumulates and becomes somewhat anchored by plants (shrubs, annuals and grasses). Pockets of microphyll woodland and chenopod scrub vegetation are often found within dunes as well (see photo #8 Appendix Q).

One area of active desert dunes and several areas of desert sand fields are also included in the planning area. Active dunes are barren expanses of actively moving sand. The size and shape of these dunes are primarily determined by abiotic factors. Vegetation, where it occurs, consists of low to medium shrubs and seasonal annuals. Sand fields are areas where sand accumulates in non-dune forms. They are typically found along the toes of bajada slopes throughout the California desert. Vegetation structure is similar to adjacent creosote scrub areas on less-sandy soils.

Large tracts of dunes can be found in Cadiz, Ward, Rice, and Chuckwalla Valleys, usually adjacent to playas. In these areas, westerly winds tend to form dune deposits on the eastern side of valleys. A small portion of the Algodones Dunes, the largest active desert dune system in California, lies within the southwest corner of the planning area. About 62,000 acres (1.1 percent) of dune and sandfield habitat is in the NECO Planning Area, mostly on public lands (82 percent).

Sand dunes provide habitat for rare and endemic animals, especially invertebrates.

### **Desert Chenopod Scrub**

This community consists of areas of low, sparse, microphyllic shrubs growing in or around dry lake beds. Soils of these areas are highly alkaline, fine-grained, and poorly drained, resulting in salt crusts and occasional pools of standing water. They are found at low elevations scattered throughout the Mojave and Sonoran deserts (see photo #9 Appendix Q).

This community type is rare within the planning area, covering only 2000 acres (<0.1 percent). Most of this (71 percent) is on private lands.

### **Mojavean Pinyon and Juniper Woodland**

This community is an open woodland of low, bushy trees, with typically no more than 50 percent cover of tree species. The understory is usually more developed than in other Pinyon-Juniper woodlands. Pinyon-Juniper woodlands are generally found on rocky, well-drained soils on dry slopes between the 4,000 and

8,000 foot elevations. They grow best in areas of cool winter temperatures and precipitation of 12-18 in/year (see photo #10 Appendix Q).

There are only 2,000 acres of Pinyon-Juniper woodlands within the planning area, all in the Old Woman mountains. Eighty-eight percent lies within public lands, and nearly all (98 percent) is in BLM Wilderness areas.

### **Springs and Seeps**

Springs and seeps are scattered throughout the NECO Planning Area. Most are found in or at the perimeter of mountain ranges. If the water flow is sufficient, there may be a small stream of flowing water or even a basin of water. For many others, the flow is sufficient only to saturate the soil in the vicinity. Most sites are only a few feet in diameter. Very few springs and seeps may be a thousand square feet in size (see photo #11 and #12 Appendix Q).

Some springs and seeps have been improved to impound water for drinking by wildlife or cattle, or they have been fenced to prevent damage by burros or cattle. Artificial water sources (e.g., guzzlers and windmills), generally constructed for wildlife or cattle, may have soil, flora, and fauna similar to natural springs and seeps. Natural water catchments of rock in canyons, called tenajas, are not included in this community because of the absence of associated vegetation. Vegetation at springs and seeps is widely varied, but generally includes some wetland or riparian species.

Springs and seeps are especially critical to migratory birds for resting, feeding, and drinking. Resident birds, such as pyrrhuloxia, Gambel's quail, and mourning doves, depend upon these scattered waters or the vegetation present there. Resident mammals, especially bighorn sheep and deer, are dependent on drinking water at these sites. Other species, such as rosy boa, are found primarily near water, but their dependence is uncertain. Some springs and seeps have endemic aquatic snails. They are easily altered by numerous human and animal activities that focus around water. Recovery of riparian vegetation may be rapid where water flow is sufficient. Species diversity is high, especially during bird migration.

### **Desert Washes**

Except in sand dunes and playa plant communities, nearly all other plant communities are characterized by a pattern of braided washes made up of channels where waters tend to focus, join, and flow to termini at playas, sand dunes, or the Colorado River. Washes may be a few inches to several hundred yards wide. They are generally dry on the surface (to possibly deep levels) for long periods of time, even years, and then for short periods (a few hours or days), with rare episodes of rain, they carry small to enormous amounts of water and sediment and then dry up again. In their upper reaches washes, may appear to be functionally little different from adjacent communities. The greater the amount of water carried and frequency of rains, the more washes constitute special features of habitat, exhibiting different and diverse characteristics of channel, vegetation (cover, food, canopy layers, and rare plants), and wildlife (higher biodiversity, rearing of young, and animals) ( see photos #2, #5 and #6 Appendix Q).

### **Developed**

The developed community type includes Holland's Agriculture and Urban areas. Urban habitats typically include a mix of native and cultivated species, a mix of structural forms (trees, lawns, agriculture, etc.), artificial water sources, and a mosaic of edges and patch types (see photo #13).

Developed lands constitute a total of 1.4 percent (75,000 acres) of the NECO Planning Area. They include the agricultural areas in the Palo Verde Valley, around Desert Center in the Cadiz Valley, the populated areas around Blythe and Needles, the smaller settlements, and two small airstrips. The majority (97 percent) is in private ownership.

### **Biological Soil Crusts**

In arid and semi-arid lands, the cover of vegetation is often sparse or absent. The soil surface in open spaces between the higher plants is generally not bare of life, but covered by a community of highly specialized organisms. These communities are referred to as biological soil crusts, or cryptogamic, cryptobiotic, microbiotic, or microphytic soil crusts. They may constitute up to 70 percent of the living cover in some plant communities (Belnap 1994), including substantial portions of the planning area.

Biological soil crusts consist of cyanobacteria, algae, lichens, mosses, microfungi, myxomycetes, and streptomycetes, and other bacteria. Composition can vary widely from site to site. Cyanobacterial and microfungus filaments weave throughout the top few millimeters of soil, gluing loose soil particles together and forming a matrix which stabilizes and protects soil surfaces from erosive forces. (Cameron 1966, Friedman and Ocampo-Paus 1976, Belnap and Gardner 1993, West 1990)

Biological soil crusts conduct many important functions in arid and semi-arid lands. In the large interspaces between plants, biological soil crusts are an important source of fixed carbon. Interspace soils between plants are often stabilized by biological soil crusts. Biological soil crusts protect soils from both wind and water erosion by binding the soil particles. Microbiotic crusts can be an important source of fixed nitrogen for plants and soils in desert ecosystems. They modify soil temperature regimes and control water infiltration (Rowlands 1980, West 1990).

## **3.5 Wilderness Management**

The Wilderness Act of 1964 provides for the establishment of a National Wilderness Preservation System with areas to be designated from public lands within the national forests, the national parks, and the national wildlife refuges. Public lands administered by the BLM are inventoried and evaluated for wilderness potential in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA). In the CDCA, 137 areas covering 5.7 million acres were determined to have wilderness characteristics; these areas were designated Wilderness Study Areas (WSAs) in May 1978.

Following the identification of WSAs, consideration was given to all resource values and opportunities, and a determination of "highest and best use(s)" for each WSA was made. This analysis led to preliminary recommendations for each WSA as suitable or non-suitable for wilderness designation by Congress.

Subsequent amendments to the CDCA Plan revised the suitability determinations for certain WSAs, or portions thereof.

The CDCA Plan, as amended, established the following goals for wilderness management (Amendment Six, January 15, 1987):

1. Until Congressional release or designation as wilderness, provide protection of wilderness values so that those values are not degraded so far as to significantly constrain the recommendation with respect to an area's suitability or non-suitability for preservation as wilderness.
2. Provide a wilderness system possessing a variety of opportunities for primitive and unconfined types of recreation, involving a diversity of ecosystems and landforms, geographically distributed throughout the Desert.
3. Manage a wilderness system in an unimpaired state, preserving wilderness values and primitive recreation opportunities, while providing for acceptable use.

### **3.5.1 California Desert Protection Act (Public Law 103-433)**

On October 31, 1994, Congress enacted the California Desert Protection Act (CDPA), thereby designating certain lands in the California desert as wilderness in furtherance of the purposes of the Wilderness Act and sections 601 and 603 of FLPMA. Of the 69 areas designated as BLM wilderness through the CDPA, 23 occur within the NECO Planning Area (Map 2-38 Appendix A), as shown in Table 3-6.

**Table 3-6. Acres of BLM Wilderness in the NECO Planning Area**

<b>Wilderness</b>	<b>BLM Field Office</b>	<b>Acres*</b>
Bigelow Cholla Garden	Needles	15,947
Cadiz Dunes	Needles	21,298
Chemehuevi Mountains	Needles	84,902
Clipper Mountain	Needles	35,864
Old Woman Mountains	Needles	183,524
Piute Mountains	Needles	50,325
Sheephole Valley	Needles	195,244**
Stepladder Mountains	Needles	84,370
Trilobite	Needles	39,693
Turtle Mountains	Needles	182,676
Whipple Mountains	Needles	78,482
Big Maria Mountains	Palm Springs	46,164
Chuckwalla Mountains	Palm Springs	88,183
Little Chuckwalla Mountains	Palm Springs	28,708
Mecca Hills	Palm Springs	30,363
Orocopia Mountains	Palm Springs	54,683
Palen-McCoy	Palm Springs	224,419
Rice Valley	Palm Springs	43,422
Riverside Mountains	Palm Springs	24,186
Indian Pass	El Centro	32,967
Little Picacho	El Centro	35,853
Palo Verde Mountains	El Centro	30,999
Picacho Peak	El Centro	8,837
<b>Total Acreage</b>		<b>1,621,109</b>

\* Acres include federal, state, and private lands within wilderness area boundaries. Acres are derived from maps produced through the Geographic Information System (GIS).

\*\* Acres reported constitute the entire Sheephole Valley Wilderness, a portion of which occurs outside the NECO Planning Area.

The following provisions under Title 1, Sections 103 and 104 of the CDPA, are particularly relevant to the NECO Plan:

- Subject to valid existing rights, each wilderness area shall be administered in accordance with the provisions of the Wilderness Act.
- Within wilderness areas, the grazing of livestock, where established prior to the date of enactment of the CDPA, shall be permitted to continue subject to such reasonable regulations, policies, and practices as deemed necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act and section 101(f) of Public Law 101-628.
- The Congress does not intend for the designation of wilderness areas to lead to the creation of protective perimeters or buffer zones around any wilderness area. The fact that non-wilderness activities or uses can be seen or heard from areas within a wilderness area shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.
- As provided in section 4(d)(7) of the Wilderness Act, nothing in the CDPA shall be construed as affecting the jurisdiction of the State of California with respect to wildlife and fish on the public lands.
- Management activities to maintain or restore fish and wildlife populations and the habitats to support such populations may be carried out within wilderness areas and shall include the use of motorized vehicles by the appropriate state agencies.
- Nothing in the CDPA may be construed to preclude federal, state, and local law enforcement agencies from conducting law enforcement and border operations as permitted before the date of enactment of the CDPA, including the use of motorized vehicles and aircraft, on any lands designated as wilderness.
- All lands not designated wilderness in the NECO Planning Area are no longer subject to the requirements of section 603(c) of FLPMA pertaining to the management of WSAs.

### **3.5.2 Wildlife Water Developments in Wilderness**

BLM Manual 8560 (04-27-83), *Management of Designated Wilderness Areas*, states the following:

Although construction of facilities to enhance an area's value for wildlife or fish is not generally consistent with the free operation of natural processes, there are situations where such measures may be necessary for the continued existence or welfare of wildlife or fish living in wilderness. This is particularly true in the case of species adversely affected through human activities in and around such areas. Certain permanent installations to maintain conditions for wildlife and fish, upon consideration of their design, placement, duration, and use, may be permitted if the resulting change is compatible with preserving wilderness character and is consistent with wilderness management objectives for the area, and if the installations are the minimum necessary to accomplish the task. Permissible actions under these criteria may include: installations to protect sources of water on which

native wildlife depend, such as exclosures; and water sources such as springs, wells, and guzzlers.

Upon development of site-specific project plans for new artificial waters in wilderness, separate environmental review--including a "minimum tool analysis" which specifies the manner in which projects are to be completed--will be necessary. Guidelines furnished in BLM Handbook H-8560-1 (07-27-88), *Management of Designated Wilderness Areas*, include building new wildlife management structures in a manner that minimizes visual impacts on the landscape (see Appendix M). The array of existing artificial waters in wilderness areas is shown on Map 3-1 Appendix A.

### 3.5.3 Reintroduction of Native Species in Wilderness

In accordance with BLM Manual 8560, reintroduction of native species may be allowed:

In some instances, wildlife species once native to the wilderness have been forced from their original habitat by encroachment of human beings and human activities. To the extent that these factors can be altered or managed within the intent of the Wilderness Act, native species no longer established in the wilderness area may be reintroduced and managed as a part of the wilderness resource. Care must be exercised to be certain that the species is native. Such programs are addressed in the wilderness management plan.

Guidelines furnished in BLM Handbook H-8560-1 indicate that motorized methods and temporary holding and handling facilities may be permitted if they are the minimum necessary to accomplish an approved transplant.

### 3.5.4 Research in Wilderness

Title 43 CFR 8560.4-5(a) states that gathering information about natural resources in wilderness may be allowed provided it is carried on in a manner compatible with the preservation of the wilderness environment. This provision is reiterated in BLM Manual 8560. The manual further provides for research and scientific activities that use wilderness areas for study of natural environments and ecosystems. It requires that such research and collection of information be conducted in an unobtrusive manner by methods compatible with the preservation of the area's wilderness character. Research and other studies must be conducted without use of motorized equipment or construction of temporary or permanent structures, except when approved by the State Director for projects that are essential to managing the specific wilderness when no other feasible alternatives exist. Such use, when approved, must be the minimum necessary and must not degrade the area's wilderness character. Relative to structures and facilities proposed by other agencies conducting activities within BLM wilderness, such agencies are equally constrained by provisions of the Wilderness Act that are applicable to the BLM.

The CDCA Plan (1980), as amended, requires approval of the authorized officer for research activities conducted on public lands, including those within designated wilderness. Whenever required, all permits, authorizations, and/or licenses will be issued at the discretion of the authorized officer.

### **3.5.5 MOU and Policy on Wildlife Management Activities in BLM Administered Wilderness**

On September 24, 1997, the BLM and California Department of Fish and Game (CDFG) entered into a Memorandum of Understanding to establish a framework for cooperation and procedures for CDFG maintenance, management, and research activities in BLM wilderness where motorized vehicle and equipment use is involved. Section 103(f) of the CDPA states:

Management activities to maintain or restore fish and wildlife populations and the habitats to support such populations may be carried out within wilderness areas designated by this title and shall include the use of motorized vehicles by the appropriate state agencies.

Through the Memorandum of Understanding, both agencies agreed to protect and preserve the wilderness character and values of the areas while carrying out CDFG's wildlife management mission.

## **3.6 Livestock Grazing**

This section discusses the background of grazing in the planning area and the rangeland improvements and administration necessary for grazing to continue to be successful.

### **3.6.1 Background**

Livestock grazing has occurred in the planning area for many decades. In general, cattle and sheep grazing has declined since World War II (BLM, 1980), and grazing within the planning area has declined since allocations for livestock use were made in the *California Desert Conservation Area Plan*, 1980. After enactment of the Taylor Grazing Act of 1934, open range grazing became restricted to geographical areas allotted to one or more livestock producers based on historical or current grazing. Until publication of a grazing rule on December 7, 1968, the BLM allocated long-term grazing based on perennial forage production. However, there were many areas of the Southwest, including the planning area, that did not produce perennial forage, and grazing was based on consumption of annual grasses and forbs or ephemeral production. This new rule authorized BLM field offices in Arizona, California, and Nevada to modify ill-suited perennial classified allotments from perennial designation to ephemeral or ephemeral/perennial designation.

This administrative modification drastically changed the way livestock producers requested authorization of grazing on ephemeral rangelands. The change no longer required an annual application for perennial forage grazing nor required substantial use of base property (privately controlled non-BLM grazing lands), and grazing would be based on a reasonable potential for growth of annual plants. Those allotments with perennial forage have an established amount of annual grazing, based on the quality of the perennial plants, stated in animal unit months (AUMs) for a defined period of grazing. Perennial grazing is typically authorized at the same level from year to year unless forage production does not meet seasonal norms. However, grazing in allotments with ephemeral forage do not have an established level of use nor a period of use instead the amount of AUMs and the length of the grazing season are determined prior to authorized grazing.



A typical ephemeral livestock operation requires two circumstances to be present before grazing occurs. First, sufficient forage of annual grasses and forbs must be available. Second, the lessee must have livestock for turnout. Surprising as it may seem, these two conditions do not easily coincide because livestock producers during any year may have abundant numbers of livestock to graze forage on the allotment, but there could be insufficient feed, and vice-versa. When weather conditions have been favorable and the livestock producer submits a written request for grazing, the BLM reviews plant and soil conditions throughout the allotment in preparation for potential grazing. This field review will determine the amount of available forage, potential grazing areas, and potential restrictions of grazing.

### **3.6.2 Rangeland Improvements**

Livestock facilities or range improvements are necessary for livestock to remain in an area to graze. Cattle can easily wander throughout the allotment without supervision, whereas sheep must be supervised. Very few facilities are needed to manage sheep because a herder or his sheep dogs direct sheep bands from one area of the allotment to another. Consequently, there are no range improvements for sheep management on Ford Dry Lake and Rice Valley Allotments. While Chemehuevi is a cattle allotment, it has only one major improvement. This is due in large part to the limited needs of spring grazing of ephemeral forage. Lazy Daisy Allotment has the largest number of improvements of the four allotments.

Sheep have a limited need for water while grazing upon succulent ephemeral vegetation, and can graze for weeks without drinking, but when the ephemeral plants become dry, water must be supplied. Water is supplied by trucks that carry light transportable troughs so they can be easily set up and removed. The truck will move as close to the band of sheep as possible and setup troughs. Water is supplied once a day, usually in the afternoon, and sheep may bed down in warmer weather before returning to graze. Once the feed becomes dry or other feed becomes available elsewhere, the livestock producer transports the flocks to other pastures outside of the area. Cattle's requirements for water are reduced when they consume succulent ephemeral forage. On the Lazy Daisy Allotment, cattle obtain water from undeveloped or developed springs or seeps, and wells. Wells and some springs supply water through pipe to troughs found at the higher elevations. Barbed wire fence is used to exclude cattle from grazing an area or to prevent movement beyond a certain area. Lazy Daisy Allotment is the only allotment with any appreciable amounts of fencing. Sheep movement in Rice Valley and Ford Dry Lake Allotments is directed by a herder and fences are not needed. Corrals are used to sort, administer medicines, brand or mark animals, and ship animals to and from the area. Portable metal and wire corrals are used with sheep operations and permanent corrals are necessary with cattle operations.

### **3.6.3 Grazing Activities**

The Chemehuevi, Ford Dry Lake, and Rice Valley Allotments are classified for ephemeral grazing use, and the Lazy Daisy Allotment is classified for ephemeral and perennial grazing use. The Lazy Daisy and the Chemehuevi Allotments are designated for cattle use; they cover 332,886 and 137,321 acres, respectively. The Ford Dry Lake and Rice Valley Allotments are designated for sheep; they cover 49,682 and 85,565 acres, respectively. When there is a good year for ephemeral growth, about 11 percent of the planning area is grazed, however in normal to dry years about 6 percent is grazed.

BLM’s grazing season starts on March 1 and concludes the last day of February of the following year. All grazing activities are to be carried out in conformance with grazing regulations, standards for rangeland health, guidelines for grazing management, allotment management plans, and direction provided in the CDCA Plan. Current grazing activities in all four allotments are further constrained by mitigation measures listed for the desert tortoise and their habitat listed in biological opinions. Table 3-7 shows the area of desert tortoise critical habitat and BLM-Category I, II and III habitat within each allotment. Chemehuevi and Lazy Daisy Allotments are in the desert tortoise Northern Colorado Desert Recovery Unit. Map 2-5 Appendix A shows the location of these four areas.

**Table 3-7. Acreage (and percent) of Grazing Leases in Tortoise Critical Habitat and BLM Tortoise Categories**

<b>Allotment Name</b>	<b>Acres in Critical Habitat</b>	<b>Acres in BLM Category I &amp; II</b>	<b>Acres in BLM Category III</b>
Chemehuevi	94,050 (10)	91,975 (12)	45,346
Ford Dry Lake	0	0	49,682
Lazy Daisy	250,834 (27)	228,579 (29)	104,307
Rice Valley	0	0	85,565
<b>Total All Allotments</b>	<b>344,884 (37)</b>	<b>320,554 (40)</b>	<b>284,900</b>

\* % is relation to total amount of Critical Habitat and Category I & II.

The Lazy Daisy Allotment occupies an area south of Highway 40, and east of Route 66 in the most northern portion of the planning area. The Chemehuevi Allotment is south of Needles, straddles Highway 95, and borders the eastern boundary of planning area. The Ford Dry Lake Allotment is located immediately north of I-10 in the Ford Dry Lake area, west of the southern end of the McCoy Mountains, and south of the Palen Mountains. The Rice Valley Allotment is south of the ruins of Rice along Highway 62 and straddles the Rice-Midland Road and the Arizona-California Railroad spur.

The Lazy Daisy Allotment, #CA-069-9076, has a potential use level of 3,192 AUMs of perennial forage for 266 head of cattle to graze all year long. The current lessee has grazed cattle on the allotment since March of 1979. The total area of the allotment is 332,886 acres composed of 304,103 acres of BLM and 28,783 acres of state and private land. Refer to Table 3-8 for past grazing use.

Table 3-8. Past Grazing Use

Grazing Year	AUMs Consumed	Grazing Period	Average Number of Cattle/Sheep
<b>Chemehuevi Valley Allotment</b>			
1989	15	10/1 - 10/31	15
<b>Ford Dry Lake Allotment</b>			
1972	600	12/1/72 - 2/28/73	1000
1976	1700	10/22/76 - 4/8/77	1847
1977	2708	9/1/77 - 6/5/78	1472
1978	2700	12/1/78 - 4/30/79	2700
1979	200	10/1/79 - 11/30/79	500
1998	586	2/24/98 - 4/17/98	2660
<b>Lazy Daisy Allotment</b>			
1990	1200	3/1 - 2/28	100
1991	1500	3/1 - 2/28	125
1992	1500	3/1 - 2/28	125
1993	1927	3/1 - 2/28	196
1994	1500	3/1 - 2/28	125
1995	1500	3/1 - 2/28	125
1996	1275	3/1 - 2/28	113
1997	1500	3/1 - 2/28	125
1998	1500	3/1 - 2/28	125
<b>Rice Valley Allotment</b>			
1983	260	4/1 - 4/30	1300
1992	441	3/22 - 4/27	2200
1998	626	2/21 - 4/2	2700

Presently, utilization of perennial forage plants in the northern and southern portions of the allotment is constrained by the lack of water sources. There are places throughout the allotment that need fences constructed to maximize available water sources. Cattle are currently feeding in three major areas located

in the central portion of the allotment; Paramount, Sunflower, and Tye Cabin. As daytime temperatures drop and cattle demand less water and/or there is an increase in ephemeral plants, most of the cattle that leave the central portion of the allotment tend to move east and south toward the flats, and graze as long as forage conditions permit. The northeastern (Ward Valley) portion of the allotment is not normally used by cattle due to lack of perennial forage and the consistent lack of ephemeral feed. Cattle have direct access to I-40 at the overpass at Water Road and I-40, and historic Route 66. Installation of a cattle guard is necessary to prevent cattle from wandering onto the freeway. Cattle are unable to make effective use of the northern and northwestern portion of the allotment due to a lack of one mile of fence at Mountain Springs overpass on I-40. Fenner and Barrel Springs are found in the northern portion of the allotment and need to be developed further.

When cattle graze in the eastern portion of the allotment, most use occurs adjacent to Homer Wash south of the gas pipeline. The lessee indicates “chamise” brush and galleta are the primary forage species. In the southern portion, abundant feed in Nine Mile Canyon is used only during cooler and wetter periods of the year. The lack of a permanent water source in this canyon precludes prolonged grazing use. The ephemeral springs in the canyon cannot be trusted to provide water throughout the year. To avoid cattle deaths from thirst, the livestock is removed from this area sometime during May or June. Depending on the weather, they are returned when water and forage conditions permit.

Water sources in the central portions of the allotment, especially the eastern side, are developed. As southern water sources are developed, fencing the southeast quadrant of the allotment may be necessary to prevent cattle from drifting off the allotment and toward the Colorado River. Moisture from winter storms tends to fall on the mountain tops, and summer rains fall primarily in the middle of the allotment (west of Pilot Peak), except on top of Old Woman Mountain (pers. comm. M. Blair).

Scanlon Wash is a large canyon located on the west side of the Lazy Daisy Allotment, and cattle have limited or no access to the wash due to a land ownership dispute. This dispute has complicated current and future grazing use of the wash and surrounding area. To make matters worse, about 20 head of cattle were shot during this recent period and the shooter has not been found.

Cattle are gathered, sorted, branded, medicines administered, and shipped each spring. Cattle are herded during the fall as need arises and cattle numbers dictate. Cattle are gathered at corral facilities located at Flat and Old Ranch, and corrals at the home place may be used if Weaver’s Well becomes operational.

The Chemehuevi Allotment sometimes produces forage during late fall, winter, early spring, and sometimes after summer storms. The lessee reported that past cattle use ranged from 35 to 50 head for the allotment, and they would like to maintain that herd size if possible. Grazing use has not been authorized since 1989 grazing season primarily due to the lack of feed and an available herd. Refer to Table 3-8 for past grazing use. Cattle can reach most portions of the allotment, and during exceptionally wet years, cattle can wander west of highway 95. Cattle do not need to drink water as long as forage remains succulent. Cattle move and graze east to west until plant growth reaches it’s maximum extent.

The Chemehuevi Wash drains approximately west to east through the center of the allotment. The wash is wide and flat, and is heavily used by OHV’s at the lower end during cooler times of the year. Cattle use the wash to access side drainages that traverse the watershed in a general north and south direction. When there are conflicts with OHV’s along Chemehuevi Wash, cattle will move to higher ground and to side drainages

until noise and activities have subsided. The main water source for the allotment is West Well. This large open well can be found at the lower end of the Chemehuevi Wash about four miles west of the Colorado River. West Well is a hand dug well with an adjacent depression that allows cattle direct access to the water. Camping by OHV visitors near the well is a potential problem that has been averted by the availability of a superior campsite located several hundred yards downstream. A corral surrounds the well and can be used for handling and shipping cattle. This corral is the only facility built on the allotment to ship cattle to and from the allotment. The lessee stated that cattle are typically shipped to and from the allotment via small trailers and trucks (pers. comm. Michael Smith).

During the 1980's, excessive temperatures at or near the Colorado River, on the Chemehuevi Indian Reservation, or at the Havasu National Wildlife Refuge led to cattle evasion from allotted grazing areas. The lessee recommended development of the existing Whipple Well, a water source near the southern boundary of the allotment and north of War Eagle Mine. A reliable water source in this area would provide better cattle distribution and access to the northern slope of the Whipple Mountains, and also serve bighorn sheep. Potential range improvements are limited due to the size and topography of the allotment and watershed.

Ford Dry Lake Allotment and Rice Valley Allotment are ephemeral allotments and only domestic sheep are allowed to graze in these units. The weather patterns for these allotments tend to produce forage from rainfall in January, February, and March, and with summer rains. Sheep are not in the general area of the allotments during late spring and summer. Livestock producers have bands of sheep wintering on private lands in nearby Palo Verde Valley and the Casa Grande, Arizona, area. If forage conditions are appropriate, sheep are moved to the allotments. Bands of sheep are transported by several livestock trucks to the allotment from nearby agricultural fields and unloaded in the allotment adjacent to a road. Once the band (usually 600-1,000 sheep) has been unloaded and collected in one area, herders allow the sheep to move and graze in a general area adjacent to their camp and sometimes may travel quite a distance from camp. The herder directs the movement of sheep with the assistance of sheep dogs. When forage is succulent, sheep do not need to drink water, and can therefore graze and walk a long distance from camp. In the evening, the flock will stop and bed down, and around sunrise will get up and start moving and grazing for the day. When the sheep graze through an area, they the sheep tend to spread out looking for the tips of the growing plants to consume. When hotter weather arrives and the feed starts drying, sheep must be supplied water.

#### **3.6.4 Grazing Administration**

The BLM conducts a series of actions to authorize cattle and sheep grazing use. Depending on the type of lease, livestock producers apply to graze livestock annually or as conditions permit. Grazing use is permitted with written authorization, and terms and conditions for grazing use are listed as necessary. The BLM conducts field visits throughout the grazing period to ensure grazing is occurring as authorized. Range improvements are inspected as prescribed to determine condition and future utility.

Vegetation and soil conditions are reviewed via rangeland health assessments and monitoring. All allotments have been assessed for health standards. Riparian/wetland vegetation along the Chemehuevi Wash in the Chemehuevi Allotment did not meet standards due to excessive grazing use from burros and infestation of tamarisk. It is anticipated that removal of burros from this area in the near future and institution of a tamarisk control program will quickly improve vegetative conditions. Otherwise, resource conditions in the four allotments meet all standards. California BLM has made a concerted effort to categorize allotments into four

areas based on successful attainment of rangeland health standards (see Appendix B). This categorization process is coupled with an existing selective management strategy of allotments based on their potential to improve resource conditions with less funding (see Appendix B).

Monitoring of rangeland resources has changed over the last decade. In the past, monitoring attempted to obtain general soil or vegetation information, but this vague information could not answer specific questions about subtle changes. Consequently, there was a natural split to collect general and specific resource information. Both types of information have their advantages and disadvantages, and field specialists and management need to decide which method is superior in what situation. The qualitative assessment process could be an inexpensive way to approach monitoring with specific questions needing answers. Under the assessment process, monitoring efforts have narrowed to specific resource conditions in areas of allotments that do not meet standards.

### **3.7 Wild Horse and Burro Management**

Management of wild free-roaming horses and burros was authorized by Congress under the Act of December 15, 1971, (PL 92-195) 16 U.S.C. 1331-1340 (Act) as amended by The Federal Land Policy and Management Act of 1976 (PL 94-579) and The Public Rangelands Improvement Act of 1978 (PL 95-514). The regulations found at 43 CFR Part 4700 and the 4700 BLM Manual series prescribe the authorities, objectives, and policies that guide the protection, management, control, and disposition of wild free-roaming horses and burros in accordance with the Act. Through the Act, Congress declared that: "It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found as an integral part of the natural system of the public lands" and are to be managed "in a thriving natural ecological balance". The policy of the BLM is to manage wild horses and burros in a manner that will ensure healthy herds for future generations of Americans and contribute to the diversity of life forms on public lands administered by the bureau. The Act does not apply to lands managed by the Department of Defense (except for the stipulations cited in the California Desert Protection Act 1994 for the China Lake Naval Air Weapons Station) nor the National Park Service. Herd management is not prohibited on those lands. In the NECO Planning Area neither JTNP nor CMAGR has ever managed herds of wild horses and burros, and it is not in the scope the NECO Plan that this change, even though burros do exist on CMAGR.

The areas where wild horses and burros were known to exist at the time of the passage of the Wild Horse and Burro Act for the California Desert District are managed by California BLM. The narrow strip of California which lies alongside the Colorado River is managed by Arizona BLM. These two areas are addressed in separate land use plans: the 1980 *California Desert Conservation Area Plan* (see Wild Horse and Burro Management Area map no. 8), and the Yuma District Resources Management Plan (RMP). Both Plans are as amended. Separate herd management area plans (HMAPs) provide more specific burro management guidance. The two plans use different program technical terminology. The meanings of these terms are clarified as follows:

#### **Wild Horse and Burro Range or Herd Area**

Both terms have the same meaning, but Herd Area is in universal use today. Herd Areas are areas of public lands identified as being habitat used by wild horses and burros at the time of the passage

of the Act in 1971. The CDCA Plan uses wild horse and burro range. The Yuma RMP uses Herd Area (HA).

### **Herd Management Area (HMA)**

Herd Management Areas are areas designated in land use plans for long-term management of wild horse or burro herds. In these areas wild horse and/or burro herds shall be managed as integral components of public land ecosystems as part of the basic BLM multiple use mandate. Management activities shall be conducted with the intent of maintaining the herds within the boundaries of the HMAs. Both the CDCA Plan and the Yuma RMP use this term.

### **Retention Area**

Retention Areas are mapped as areas within HMAs but are not defined and have no specific management prescriptions. This term is not in program usage today. This term is used only in the CDCA Plan.

### **Concentration Area**

Concentration Areas are areas where wild horse and burro herds tend to congregate and a high probability of encountering the herds is expected. These areas are typically located near water sources where herds would congregate, especially during the dry season. If populations are maintained at appropriate management levels in the concentration areas, more than adequate forage is expected to exist for that population throughout the remainder of the HMA. While a useful management tool, Concentration Area is not an official designation. Concentration Areas are mapped only in the CDCA Plan.

### **Proposed Population or Appropriate Management Level (AML)**

Both terms have the same meaning but the latter is in universal use today. AML is the optimum number of wild horses and burros which achieves a thriving ecological balance and avoids a deterioration of the range (109 IBLA 118 API 1989). AML shall be expressed as a single number which is the highpoint of acceptable upper and lower limits of the population range. The lower limit shall allow for a self-sustaining population. The upper limit must be consistent with objectives of maintaining a thriving ecological balance. The CDCA Plan uses Proposed Population. The Yuma RMP uses Appropriate Management Level (AML)

## **3.7.1 Herd Areas**

There are six HAs in the NECO Planning Area which are listed in Table 3-9 and displayed on Map 2-25 Appendix A. Four of these are covered in the CDCA Plan and two in the Yuma RMP. Five are for burro herds and one is a horse herd. Even though Arizona and California offices separately designated the Chemehuevi (California) and Havasu (Arizona) burro HAs, the same herd of animals is common to both. The same situation exists with the Chocolate/Mule Mountain (California) and Cibola/Trigo (Arizona) burro HAs. Ignoring the administration duplication, there are actually only three burro herds involved in the scope of this

plan, the third being the Piute Mountain HA, located south of I-40 near Essex, California. The one horse HA, Picacho, overlaps part of the Chocolate/Mule Mountain burro HA in the CDCA and does not have a complementary Arizona BLM-administered HA.

### 3.7.2 Herd Management Areas (general)

All but one of the HAs described above were designated as HMAs in the respective BLM land use plans and the more specific herd management area plans (HMAPs) which followed. Only Piute Mountain HA is not an HMA; therefore the target management number (AML) for that HA is zero. While Table 3-9 shows that there are currently 37 burros in the Piute Mountain HA, the current management intent is that there be none.

**Table 3-9. Characteristics of Herd Management Areas**

Wild Horse and Burro Herd Management Areas	Size (acres)	Estimated Population	Management Levels	Excess or (Deficit)	Removals 1985 - 2001	Sex Ratio M / F	Average Recruitment (%)
Piute Mountain (Burro) (Herd Area, only)	39,781	37	0	37	14 males <u>15 females</u> 29 burros	1 / 1.07	10
Chemehuevi (Burro)	406,894	598*	150*	448*	269 males <u>313 females</u> 582 burros	1 / 1.16	10
Chocolate/Mule Mtn. (Burro)	386,069	26**	22	4	69 males <u>79 females</u> 148 burros	1 / 1.14	10
Picacho (Horse) (Burro)	45,928	0 12**	42 0	(42) 12	The data collected were incorporated into the Choc./Mule Mtns. HMA		
Havasu (Burro)	78952	598*	150*	448*	763 males <u>808 females</u> 1,571 burros	1 / 0.91	15
Cibola/Trigo (Burro)	36530	82**	190	-108	763 males <u>808 females</u> 1,571 burros	1 / 1.06	17

\* Population census conducted March 2001, two sets of numbers are common to both HMAs.

\*\* Population census conducted September 2001, a total population estimate of 120 burros for the 3 HMAs.

Table 3-9 also shows the AMLs for the HMAs. The AMLs for the Chemehuevi and Havasu HMAs are the same number. Animals are the same herd, and the AML is not doubled. The AMLs for the Chocolate/Mule Mountains and Cibola/Trigo HMAs are not the same number and are added, even though the subject burros are of the same herd. HMAs for horses and burros are separate areas even though the Chocolate/Mule Mountains HA/HMA for burros and the Picacho HA/HMA for horses overlap. It is the policy of BLM to manage and remove excess and nuisance animals through humane, live-capture means and place them in private maintenance through BLM's Adopt-a-Horse/Burro program. The age composition of burros in HMAs is presented in Table 3-10.



**Table 3-10. Age Composition of Burros in Herd Management Areas**

Age	Herd Area				
	Chemehuevi	Picacho Choc./Mules <sup>a</sup>	Piute Mountains	Havasu <sup>b</sup>	Cibola-Trigo <sup>c</sup>
(yrs)	(%)	(%)	(%)	(%)	(%)
<1	10	10	10	15	17
1	21	18	7	19	19
2	23	17	28	15	12
3	13	14	14	16	11
4	7	9	3	12	12
5	13	15	10	9	10
6-8	8	13	14	9	14
9-12	3	3	10	3	4
+12	2	1	0	2	1

- a Gather data for the Chocolate/Mule Mountains HMA and Picacho HMA were combined for this analysis.
- b This information was derived from gather data which includes the Arizona and California side of the Havasu HMA.
- c This information was derived from gather data which includes the Arizona and California side of the Cibola-Trigo HMA.

### 3.7.3 Chemehuevi and Havasu HMAs

The Chemehuevi and Havasu HMAs, located in southeastern California along the Colorado River between Needles, CA and the Colorado River Indian Tribes (CRIT) tribal lands, provide habitat for wild free-roaming burros. The burros are under the jurisdiction of the Lake Havasu (Arizona) and Needles (California) BLM Field Offices. The burros also roam onto federal land in the Havasu National Wildlife Refuge (NWR), managed by USFWS, Park Moabi (San Bernardino County), Metropolitan Water District land and facilities, and tribal lands belonging to Chemehuevi and Colorado River Indian Tribes.

Management of wild burros within these HMAs is guided by two herd management area plans (HMAPs), the Colorado River HMAP (California Desert District, 1984) and the Havasu HMAP (Lake Havasu Field Office, 1979). The management plans recognized that the same populations of burros use lands in each jurisdiction and called for coordination between the two BLM offices. Very little coordination occurred before 1995. Neither plan has been fully implemented. As of March 2002, there was an estimated population of 598 burros.

Both BLM offices signed a Memorandum of Understanding with the Chemehuevi Indian Tribe allowing for joint burro management, where portions of the Chemehuevi tribal lands would be managed as part of the HMA. However, in 1995 the Chemehuevi Tribal Council rescinded the MOU and all entities are currently operating under a new cooperative agreement for burro removal on the Chemehuevi tribal lands.

The Havasu Herd Management Area (HMA) includes the Havasu National Wildlife Refuge, which at this time does not desire to remain a part of the HMA.

### 3.7.4 Chocolate/Mule Mountains, Picacho and Cibola/Trigo HMAs

The Chocolate/Mule Mountains and Cibola/Trigo HMAs provide habitat for wild free-roaming burros along the Colorado River in Imperial and Riverside Counties in California. These burros are under the jurisdiction of the Yuma, Arizona and El Centro, California BLM Field Offices. The burros also roam on federal lands managed as the Imperial and Cibola NWRs, state lands managed by the State of California (Picacho state Recreation Area), and private land owners including irrigated farmland in the lower Palo Verde Valley.

Management of these HMAs is guided by two HMAPs, the Colorado River HMAP (California Desert District, 1984) and the Cibola-Trigo HMAP (Yuma District, 1980). Each land use plan set different AMLs for their respective jurisdictions at the same time that it was recognized that only one herd was involved. The AML for the Chocolate/Mule Mountains HMA is 22 burros and is 190 for the Cibola-Trigo HMA. The management plans also called for coordination between the two BLM offices. Little coordination occurred before 1995. Neither plan has been fully implemented. Currently there are an estimated 120 burros in the common herd. Wild horses which once roamed in the Picacho HMA appear to have left the HMA over 20 years ago and have not returned. An AML of 42 horses was established in the 1980 CDCA Plan. The area is entirely within the CDCA, but it does lie against the CDCA boundary.

The Cibola-Trigo HMA includes the Imperial and Cibola NWRs. The intention was for BLM and USFWS to cooperate on managing burros over the greater area. In the last year, USFWS has indicated a desire to not have NWRs be a part of HMAs. The Cibola-Trigo HMA also includes the Picacho State Recreation Area, which includes both state land and federal BLM land leased to the state through the Recreation and Public Purposes (R&PP) Act. The leased lands fall under the definition of public lands in FLPMA and the Act, and can be included in a designated HMA. The Yuma BLM Field Office has been working with the Superintendent of the Picacho State Recreation Area to remove nuisance animals from state-owned lands.

BLM and California Department of Fish and Game are using radio transmitters on burros to collect information on the seasonal distribution and extent of movements of burros in these HMAs. This data, along with water assessments, vegetative monitoring and population census data (burro, bighorn sheep and deer) will be used in the updated herd management area plans (HMAPs). This data will also be used in determining locations of water developments and water exclosures that would achieve the management objectives and keep burros within the HMA boundaries.

Several data and planning documents that predate the 1980 CDCA Plan indicate that the Chocolate/Mule Mountains burro HA developed in the CDCA Plan (Map 2-25 Appendix A) is incorrectly mapped and should be mapped as shown on Map 2-26 Appendix A. These documents include the following:

- 1974 Unit Resource Analysis (URA), developed by BLM's Yuma District.
- 1992 draft Natural Resource Management Plan for CMAGR prepared by the University of California, Riverside depicts the distribution of burros in 1969.
- 1967 map developed by Riverside Land Office (now the California Desert District Office).

The Picacho HMA is the only wild horse HMA in the planning unit. This HMA borders the Cibola/Trigo HMA and is adjacent to and within the Chocolate/Mule Mountain HMA. It is speculated the wild horses may have crossed the Colorado River to Arizona. Currently, the HMA has a population of wild burros.

### 3.7.5 Population Controls

Population control involves conducting a periodic census of the burro population and removing excess burros.

#### Population Census

Burro census should be conducted every 3 years, in accordance with Bureau policy and dependent on funding. The methodology is always being evaluated for the most efficient, accurate and cost effective ways of conducting burro counts. The current population census method utilized by the CDD and Arizona BLM is the simultaneous double count method. Infra-red census techniques are being evaluated.

#### Removal of Excess Burros

Burros are commonly removed from the range and placed in private maintenance through BLM's Adopt-a-Horse/Burro program. A decision to remove burros is based on the following reasons:

- Land use plan decisions
- Excess Burros. If it is determined there is an excess population of burros, animals must be removed from an area in order to preserve and maintain a thriving natural ecological balance and multiple use relationship.
- Nuisance Burros
  - Burros that stray off of the public lands onto private lands
  - Burros that are causing damage to private and/or public property
  - Burros that through their habits create health and safety risks which could lead to death or injury to the public and/or the animals
- Outside Herd Area--wild burros located on Public lands outside the herd areas

Removals are accomplished usually through one of two means: passive self trapping with food/water as bait, or active wrangler/helicopter driving/roping methods. Both methods require periodic access, vehicles, and permanent or portable facilities.

Burros are commonly removed from the range and placed in private maintenance through BLM's Adopt-a-Horse/Burro program. A decision to remove burros usually is made when either the number of animals exceeds the AML for an HMA or animals are present in a nuisance situation in areas outside HMAs. Removals are accomplished usually through one of two means: passive self trapping with food/water as bait, or active wrangler/helicopter driving/roping methods. Both methods require periodic access, vehicles, and permanent or portable facilities.

### 3.7.6 Management Complexity

The burro management situation along the California side of the Colorado River is complex. In two instances, BLM offices in two states have common management responsibilities for the same herd of burros by the nature of burros roaming both sides of administrative units. Coordination on management actions has been difficult. Both burro herds also roam over different jurisdictional areas. BLM's multiple use

management includes wild horses and burros. The mandates of the USFWS, State Department of Parks and Recreation, tribal lands, and private land owners do not yet include horses and burros. These lands comprise most of the area mapped as concentration areas, where forage and water are most abundant. The number of mandates and their differences create additional complexity for coordinated management.

### 3.7.7 Species Description--Burros (*Equus assinus*)

Burros along the Colorado River are typically grey, with some being black brown, white pinto or piebald. Almost all possess the shoulder cross characteristic of the ancestral Nubian wild ass (although this sign is faint on dark browns and some whites) and many have leg barring associated with the Somali wild ass. The mean shoulder height of adult burros is 48 inches and the mean weight is approximately 350 pounds. The life expectancy for a burro in these herds is between 5-8 years.

The social structure of wild burros is different from wild horses in that wild burros do not form breeding bands or harems. There are no apparent personal bonds, other than jenny-foal relationships, between individuals. The animals occur in male groups known as bachelor bands, in female groups known as jenny-foal groups, and in mixed groups. All of the groups are variable and their composition may change at any time. Groups may form for several hours or for several weeks. Some of the older studs become territorial, but they do not prevent other males from entering their territory unless there is an estrous female present. Within this type of organization there is no order of dominance or leadership other than within these limited territories. All adult members seem to be of equal rank, and only the jenny and her foal ever search for each other when they are separated. It is more common for males to roam freely throughout their habitat and breed upon encountering an estrous female. Large male groups may form in the vicinity of an estrous female. In dispersed populations in a desert environment, breeding efficiency increases as the population densities increase. As daily temperatures increase and water availability decreases, more and more animals must gather around remaining water sources. These areas become important areas for maximizing breeding. This temporary or seasonal increase in population density increases the chance for males to encounter estrous females. The loose social structure, where all animals are potential breeding partners, maximizes genetic diversity in small or dispersed populations. The breeding season is year long. The estrous cycle appears to be more common during the cool or wet seasons than the hot or dry months.

During the summer, a burro will drink from 2.5 to 4.0 gallons a day and generally will not travel more than 3 miles from an available water source. During times of moderate temperatures and especially when succulent annuals are prevalent, the burros may go without water for 3 to 5 days and travel longer distances from water sources.

The major perennial forage species along the Colorado River are: big galleta grass (*Hilaria rigida*), ocotillo (*Fouquieria splendens*), ironwood (*Olneya tesota*), palo verde (*Cercidium spp.*), mesquite (*Prosopis spp.*) and white bursage (*Ambrosia dumosa*). Studies conducted by Omart, Woodward and Seegmiller in the 1970's, indicated that diets of burros consist between 40 -60 percent shrubs, 30 percent forbs, and 4-20 percent grasses.

### **3.7.8 Population Viability Analysis**

Singer and Zeigenfuss, 2000, studied genetic effective population size in the Pryor Mountain wild horse herd. They concluded that the minimum population size required to maintain genetic variation was in the range of 139 to 185 wild horses.

During the next four to five years, data will be collected on burro populations in preparation of a Population Management Plan. This process includes collection of blood samples to be analyzed for genetic baseline data. The data will be compared to similar data from both domestic and other wild horse/burro populations.

The primary value of this initial data is as a baseline against which future data can be compared to identify genetic drift and any narrowing of diversity through inbreeding. In the short term, diversity can be determined, herds may be separated or combined for management based on the data, and rare alleles may be identified. A report on the analysis will be provided by the University of Kentucky.

### **3.7.9 California Desert District Burro Herd Areas and Herd Management Areas**

Herd Areas and Herd Management Areas in the California Desert Conversation Area are shown on Map 4-1 Appendix A. Table 3-11, below, shows characteristics of these areas. The table displays the following:

- All the burro herd areas recognized in the CDCA Plan (1980) and assigned acreage
- Herd management areas (HMAs) designated in 1980, associated acreage and appropriate management levels (AML). If the herd area was not designated to managed burros, 0 acreage and an AML of 0 were assigned
- Year 2001 status of herd area acreage. Herd areas with an (\*) had a reduction in their acreage due to the transfer of Public lands to the National Park Service (NPS) through the 1994 California Desert Protection
- Year 2001 status of herd management area acreage and associated AMLs. Several amendments to the CDCA Plan (1980) removed the HMA designation and assigned 0 acres and reduced the AML to 0. HMA acreage affected by lands transferred to the NPS are shown with two asterisks (\*\*), which advertently reduced their AML. The NPS does not manage for burros. Any herd areas or HMA transferred to the NPS are not applicable (NA) to the 1971 Wild Free-Roaming Horse and Burro Act
- The estimated burro population for the herd areas and herd management areas. The Piper Mountain and Chicago Valley HMAs, no longer have burro populations, but still have an assigned AML.

**Table 3-11. Characteristics of Herd Areas and Herd Management Areas in California Desert Conservation Area**

Burro Herd Areas	Herd Area Acreage, 1980	HMA Acreage 1980	AML 1980	Current Herd Area Acreage, 2001	Current HMA Acreage, 2001	AML 2001	Estimated Burro Population 2001
Piper Mountain*	104,661	104,661	82	97,434	96,303	82	0
LastChance / Sand Spg.*	240,837	0	0	43,569	0	0	0
Waucoba / Hunter Mtn.*	519,129	389,347	444	44,685	22,686**	29	80
Lee Flat*	135,505	123,310	30	88,523	73,330**	15	14
Centennial*	1,030,311	721,218	1,137	1,023,384	0	0	100
Panamint*	414,686	207,343	240	214,450	0	0	123
Slate Range*	512,951	487,303	408	492,020	0	0	70
Chicago Valley*	331,612	278,173	28	314,377	278,173	28	0
Clark Mtn.*	233,410	75,349	44	196,140	75,349	44	170
Lava Beds*	179,254	173,876	75	Transferred to NPS	NA	NA	NA
Granite / Providence Mtn*	192,735	0	0	Transferred to NPS	NA	NA	NA
Woods / Hackberry*	56,540	0	0	Transferred to NPS	NA	NA	NA
Cima Dome*	93,199	93,199	55	Transferred to NPS	NA	NA	NA
Piute Mtn.	39,781	0	0	39,781	0	0	37
Dead Mtn.	42,757	0	0	42,757	0	0	19
Chemehuevi	406,894	406,894	150	406,894	406,894	150	598
Chocolate / Mule Mtns.	386,069	386,069	22	641,419	386,069	22	26
Kramer	14,024	14,024	16	14,024	0	0	0
Morongo	39,159	39,159	16	39,159	0	0	0
<b>Total</b>	<b>4,973,514</b>	<b>3,500,465</b>	<b>2,747</b>	<b>3,698,616</b>	<b>1,338,804</b>	<b>370</b>	<b>1,292</b>

### 3.8 Recreation Management

The *California Desert Conservation Area Plan* (1980) stated the following:

The California Desert attracts millions of visitors annually to its wide spectrum of recreational opportunities. Its diverse landscapes create a variety of physical and psychological settings which provide a desert experience of natural beauty, solitude, and freedom from the structure and regulations of the urban areas of southern California, where 85 percent of these visitors live.

With expanded leisure time and growing affluence of southern Californians, conflicts have arisen between those who use vehicles as a means of access and those who operate vehicles as a recreational activity. Access can be for a variety of purposes, including economic pursuits and for recreation such as hunting and rockhounding. In addition, recreationists compete for space with other resource users. While strongly advocating that recreational facilities and regulations remain minimal, desert recreationists increasingly demand the protection of the natural and cultural values which are essential to most desert recreation. Scenic values are often cited by the public as the Desert's most important resource.

The California Desert is already important as a reservoir of open space and as a place for outdoor recreation. While the BLM as an agency is not readily known, lands managed by the Bureau are especially significant to recreationists. The public lands will become increasingly important since they are closer to urban centers than most other recreation areas, such as Death Valley, and offer a wider variety of recreational experience.

A substantial increase in demand for facilities and services, especially educational and interpretive programs, will occur primarily because of increased population growth in southern California. Other factors include:

- An emerging awareness of desert resources and values
- Saturation of other outdoor recreation areas in southern California
- Energy shortages and economic stresses which will cause more people to come to the relatively close Desert and stay longer
- Technological innovation in recreational equipment which will influence user trends and consequently the demand for various resources

Such was the view regarding recreation in the California Desert more than two decades ago. Have some facets of this overview changed since then? Certainly it is no longer true that leisure time is increasing, at least for much of the working population. Harvard economist Juliet Schor (1989) predicted that Americans would have less free time as we move to the next century. This trend can be attributed, in part, to individuals holding multiple jobs, part-time workers who are stay-at-home parents, and other tasks which occupy increasing amounts of time.

On the other hand, one would expect that given our aging population, a large group of individuals will have more free time than ever before as they leave the work force. Heath (1997) indicated that many people over

age 40 are starting to engage in “high risk” activities. This demonstrates that the “retired” population is not content to spend their remaining years in an inactive mode. Rather, they increasingly desire to continue a life of activity. Census Bureau projections show the elderly of the future will be more educated than previous generations. It is conceivable that this group may have a strong desire to engage in learning about nature and viewing wildlife, activities that may well lead them to the unconfined open spaces of the NECO Planning Area.

Has there been continued growth of affluence since 1980 which might lead to additional expenditures on recreational equipment and increased visitation to the California Desert? Data reported at the national level from the Outdoor Recreation Coalition of America (1996) showed substantial increases in recreation equipment purchases. With the dramatic rebound of the California economy (since the economic recession of the early 1990s), it is likely that some of this increased purchase activity is occurring in this state. If this is true, Californians at least have the intent to engage in outdoor recreation activities. This, in conjunction with an increasing preference for natural and undeveloped areas (from 26.5 percent of Californians in 1987 to 39.4 percent in 1997; CIC Research, Inc., 1997), could translate to increases in visitation to the California Desert, especially the remote, less-frequented areas such as those within the NECO Plan boundaries.

Relative to trends for specific recreation activities which are of primary importance to visitors in the NECO Planning Area, the following levels of participation have been observed since 1987:

- General nature study has steadily increased.
- Off-highway vehicle use of 4-wheel drive vehicles dropped in 1992, and then climbed back to the 1987 level by 1997.
- Use of motorcycles and ATVs was about the same between 1987 and 1992, but increased by about 30 percent in 1997.
- Camping in developed sites and primitive areas exhibited growth in 1992 and then declined to about their 1987 levels by 1997.

Californians were asked in 1997 which activities that took place in government-operated park and outdoor recreational areas were most important to them. Of the 43 activities listed, opportunities for 12 exist within the NECO Planning Area. The relative importance of these twelve activities was indicated as follows.

**High Importance**

Trail hiking  
Camping in developed sites with tent or vehicle  
Camping in primitive areas / backpacking  
General nature study / wildlife viewing

**Moderate Importance**

Driving for pleasure  
Horseback riding  
Picnicking in developed sites



**Low Importance**

Mountain biking  
Hunting  
Target shooting  
Motorcycle, dirt bike, ATV, and dune buggy use off paved roads  
4-wheel drive vehicle use off paved roads

Opportunities for pursuing camping and backpacking activities in primitive areas were enhanced upon passage of the California Desert Protection Act of 1994 (16 U.S.C. 1132 *et seq.*), which designated certain lands in the California Desert Conservation Area as wilderness and, therefore, as components of the National Wilderness Preservation System.

It is important to recognize that a statewide survey regarding public opinions and attitudes on outdoor recreation may not be directly applicable to any particular region, much less an area like the NECO Planning Area that itself is home to relatively few people and generally requires a substantial effort to access. It may be reasonable to assume that a survey of populations residing near the NECO Planning Area (e.g., El Centro, Blythe, Needles, cities in the Coachella Valley) would yield different results. Therefore, a description of recreational trends for the area without a statistically valid survey is problematic. Anecdotal information from sources in the best position to observe recreational use in this part of the California Desert would then have to be considered.

**3.8.1 Multiple-Use Classes**

The CDCA Plan furnishes guidelines specifying the types of recreational activities allowed in each of the Multiple-Use Classes (BLM-administered lands only). These guidelines are as follows:

<p><b>Multiple-Use Class C</b> <i>Controlled Use</i> <i>(Wilderness Mgt.)</i></p>	<p><b>Multiple-Use Class L</b> <i>Limited Use</i></p>	<p><b>Multiple-Use Class M</b> <i>Moderate Use</i></p>	<p><b>Multiple-Use Class I</b> <i>Intensive Use</i></p>
<p>This class is suitable for nonmechanical types of recreational experience which generally involve low to very low user densities. Recreational opportunities provided include, but are not limited to, the following characteristic activities:</p> <ul style="list-style-type: none"> <li>– backpacking</li> <li>– primitive, unimproved site camping</li> <li>– hiking</li> <li>– horseback riding</li> <li>– rockhounding</li> <li>– nature study and observation</li> <li>– photography and painting</li> <li>– rockclimbing</li> <li>– spelunking</li> <li>– hunting</li> </ul>	<p>This class is suitable for recreation which generally involves low to moderate user densities. Recreation opportunities include those permitted in Class C plus:</p> <ul style="list-style-type: none"> <li>– landsailing on dry lakes</li> <li>– noncompetitive vehicle touring and events only on “approved” routes of travel</li> </ul> <p>All organized vehicle events, competitive or not, require a permit specifying the conditions of use; these conditions will include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– approved routes</li> <li>– no pitting, start, finish, or spectator areas</li> </ul>	<p>This class is suitable for a wide range of recreation activities which may involve moderate to high user densities. Recreational opportunities include those permitted in Class L. Competitive motorized-vehicle events are limited to “existing” routes of travel and must be approved by the authorized officer. Pit, start, and finish areas must be designated by the authorized officer. All competitive events having 50 or more vehicles require permits.</p>	<p>This class is suitable for recreation activities which generally involve high user densities. A wide array of recreational opportunities will be found in this class. Off-road vehicle play will be allowed where approved and in open areas.</p> <p>Uses permitted are the same as Class M. In addition, motorized-vehicle play is allowed in areas designated “open.” All aspects of competitive events will be permitted except where specific limitations are stipulated by the authorized officer.</p>
<p>Permanent or temporary facilities for resource protection and public health and safety may be allowed at the discretion of the authorized officer or in accordance with approved Wilderness Management Plans.</p>	<p>Permanent or temporary facilities for resource protection and public health and safety are allowed.</p>		
<p>Trails are open for non-vehicular use and new trails for non-motorized access may be allowed.</p>			

### 3.8.2 Access

To engage in most desert recreational activities outside of open areas, visitors must use motorized vehicles and usually travel on some previously-used or marked motorized-vehicle route. Vehicle access is among the most important recreation issues in the desert. A primary consideration of the recreational program is to ensure that access routes necessary for recreation enjoyment are provided. Specific route identification will occur in conjunction with the NECO Plan.

### 3.8.3 Washes

Access to washes by motorized vehicles in the pursuit of recreational opportunities is a primary issue in the NECO planning effort. Washes provide motorized-vehicle access for hunting, sightseeing, nature study, and camping, and they also constitute important habitat for many wildlife species, among which is the desert tortoise. Opinions vary greatly about the effects of motorized vehicles traveling in washes, especially those where use is relatively low. (See Section 3.9.5, regarding washes as routes of travel).

Desert Wildlife Unlimited, Inc. (El Centro, California) characterized recreational use in Milpitas Wash and adjacent wash areas as follows:

#### **Milpitas Wash area**

- Approximately 150 hunters focus on the Milpitas Wash area during the deer hunting season, generally November.
- Hunters seeking quail, dove, and other game use the area during appropriate seasons, generally fall and winter.
- Most hunters favor existing roads, trails, and large, easy-to-drive washes.
- About one quarter of the hunters camp in the wash complex, mostly on private lands and usually on opening weekend of the deer season.
- Most hunters drive on existing roads, trails, and large washes, then walk on rougher terrain.
- Driving in washes during the hunting season occurs mostly with large vehicles such as sport utility vehicles.
- Very little cross-country travel from wash to wash occurs due to the extensive nature of existing roads, trails, and washes.
- Other recreational use (e.g., sightseeing, rockhounding) occurs mostly from October through April with about 25 recreationists visiting the area on weekends, 10 on weekdays, concentrating at specific sites such as the Hauser Geode Beds.

#### **Wash area southeast of Highway 78**

- Approximately 450 hunters focus on this area during the deer hunting season.
- Hunters seeking quail, dove, and other game use the area during appropriate seasons.
- Most hunters favor existing roads, trails, and large, easy-to-drive washes.
- Only 10-15 percent of the hunters camp in the washes; relative to the Milpitas Wash area, more motor homes are used for camping.
- Most hunters drive on existing roads, trails, and large washes, then walk on rougher terrain.

- Driving in washes during hunting season occurs primarily with large vehicles such as sport utility vehicles.
- Very little cross-country travel from wash to wash occurs due to the extensive nature of existing roads, trails, and washes.
- Other recreational use (e.g., sightseeing, rockhounding) occurs mostly from October through April with about 25 recreationists visiting the area on weekends, 10 on weekdays, but concentrating at specific sites.

In general, similar levels of activity in other parts of the NECO Planning Area on BLM-administered lands are believed to be occurring with some exceptions. At lower Chemehuevi Valley, immediately adjacent to the community of Havasu Lake, there occur moderate to high levels of off-highway vehicle activity, although much of the intense activity is just outside the NECO Plan boundary on public lands administered by the Lake Havasu Field Office, Arizona.

### **3.8.4 Organized Competitive Vehicle Events**

The CDCA Plan allows for long-distance, point-to-point events by delineating competitive recreation courses. The two courses within the NECO Planning Area—Johnson Valley to Parker and the Parker 400 (Map 2-30 Appendix A)—were established exclusively for permitted competitive recreation, not for access or casual recreation unless specifically approved in later actions. Criteria for designing other race events are contained in the Multiple-Use Class guidelines (above) and the CDCA Plan under “Recreation Element”. Because of potentially sensitive resources in Multiple-Use Class L areas, race routes through these areas must comply with the following additional requirements:

- (1) All courses will remain on routes of travel that have been approved for motorized-vehicle use. Event routes on special areas such as dunes and dry lakes will be governed by the MUC L guidelines and any special management objectives identified for the area. Special limitations such as ACEC management prescriptions, speed limits, seasonal closures, and monitoring requirements may be needed to protect the resource values in the area.
- (2) Pit, start, finish, and spectator areas will not be allowed. Course verification points, or checkpoints, where race officials will monitor riders and verify that they have followed the prescribed course, are allowed. No mechanics’ services or fuel stores are allowed at these checkpoints.
- (3) Fragile and/or significant areas will be avoided unless environmental assessment shows that any potential impacts to these areas could be mitigated or would not occur. Such areas include, but are not limited to: (a) ACECs; (b) habitats of endangered, threatened, rare or protected species; (c) educational, and research areas; (d) archaeological and historical areas and features; (e) sensitive soils and susceptible wind-borne dust areas; (f) wetlands and riparian habitats; and (g) areas near urban populations.
- (4) The BLM will require the event sponsors to mitigate potential negative impacts and may require rehabilitation where feasible. For example, the sponsor may have to provide official observers at mandatory checkpoints to ensure that racers comply with the designated course. Also, damage to the route may need to be repaired.
- (5) All racecourses are temporary and may not be used on a continual basis pending specific resource studies. All approved competitive routes are temporary and exist only for the life

- of the specific event for which the route was designed. Pending resource studies on event routes in MUC L, which may or may not indicate that an area is suitable and capable of tolerating such use, no approved route may experience more than one event annually. In some cases, the route may be used even less frequently. It would be considered rare that an approved route could receive more than a single annual race event.
- (6) Long-term adverse impacts will not be allowed. Adverse impacts or scars predicted to remain on the resource beyond one to five years are, in general, considered “long-term” and are not tolerated in MUC L areas. All identified adverse impacts in MUC L areas will be avoided or complete mitigation will have to be shown to be possible within a reasonable time frame, not to extend beyond five years from the date of the event.
  - (7) Event participants may have to traverse MUC L under controlled (yellow flag) conditions (e.g., no passing, timed speeds, maintained roads) as appropriate for resource protection and public safety. This criterion is conditional and depends on such factors as management objectives for the area, special resources, length of the course, dust conditions, type of event, season of use, etc. This option provides not only protection of valuable resources, but also safety for the race participants where hazards may exist.
  - (8) Length (mileage) of the event passing through MUC L will be a key factor in determining use. As the approved route length increases, it can be generally expected that more controlled race requirements, such as yellow flag conditions, may be mandated.
  - (9) Width of the course will be the minimum practicable for resource protection and public safety. All approved routes must be capable of tolerating the number of persons and vehicles expected to enter the area.
  - (10) All other alternative routes have been considered.

All criteria are in addition to those required in accordance with 43 CFR 8372 (see “Special Recreation Permits” section 3.8.5).

### **Johnson Valley to Parker**

The Johnson Valley to Parker corridor extends approximately 220 miles from the upper Johnson Valley Off-Highway Vehicle Recreation Area to the vicinity of Parker, Arizona. The last third of the corridor corresponds to the southern portion of the California loop of the Parker 400 corridor. The Johnson Valley to Parker corridor was used for the “Checkchase” sponsored by the AMA Checkers Motorcycle Club. The event last occurred in the 1980s.

### **Parker 400**

The 105-mile California portion of the Parker 400 corridor generally circumnavigates the Turtle Mountains with the eastern leg skirting the Whipple Mountains. The remainder of the course occurs in Arizona. SCORE International was the primary sponsor for the event that historically took place in late January or early February. Of the participants, 75 percent were four-wheeled trucks and dune buggies. Based on post race evaluations (finding a significant amount of course widening, short cutting, and illegal cross-country travel) and the experience with the Barstow to Las Vegas race and application, the BLM decided to deny the application for the California loop of the 1990 event. Insufficient time to prepare an Environmental Impact Statement was an important consideration.

After the 1989 emergency and proposed listing of the desert tortoise as “endangered,” and the 1989 Barstow-to-Las Vegas (B-to-V) race, BLM’s February 13, 1990 Policy Paper regarding competitive off-highway vehicle events recommended that BLM “pursue a Plan Amendment(s) to eliminate the four competitive event courses and corridors from the *California Desert Conservation Area Plan* and deny any further applications for use of these corridors until the amendment process is complete.” The Johnson Valley to Parker and Parker 400 corridors comprise two of these four corridors.

A CDCA Plan amendment was initiated and there was some public scoping, but the amendment was never completed. BLM published a Notice of Intent to Prepare the Plan Amendment in the *Federal Register* on December 22, 1989. The American Motorcyclist Association (AMA) filed suit (April 6, 1990) challenging BLM’s adoption of the Policy Paper and BLM’s denial of AMA’s permit application for the 1990 B-to-V race (March 6, 1990). On June 8, 1990, the District Court (Findings of Fact and Conclusions of Law--SA CV 90-267-JSL {rwrX}) addressed BLM’s authority to deny a permit for the 1990 B-to-V race and how the inclusion of the competitive event courses in the CDCA Plan should influence BLM’s consideration of permits for individual events such as the B-to-V race.

There are two important rulings in the decision of the District Court: (1) BLM may deny a permit for a race after following proper procedures (preparing an EA); and (2) BLM should assume that permits for events such as the B-to-V race will be issued “absent a change in the circumstances which led to the establishment of the race courses.” The second aspect of the decision is the reason a plan amendment on competitive corridors needs to be analyzed. Despite good cooperation from AMA in its attempts to assure compliance with event stipulations for the 1989 B-to-V race, neither BLM nor AMA could provide such assurance. BLM and USFWS monitoring conducted after this event found that some participants strayed from the marked course in tortoise habitat. These incidents of straying were violations of the permit stipulations. For this reason, competitive event courses, designated before the federal listing of the tortoise, may conflict with tortoise recovery. Whereas the inclusion of competitive event corridors in the CDCA Plan “clearly contemplate that permits will be issued” (District Court, 1990), such assumption is qualified by the statement, “. . . absent a change in circumstances which led to the establishment of the race courses.” The listing of the tortoise may constitute this change.

### **3.8.5 Special Recreation Permits**

In accordance with 43 CFR 8372.1-1, Special Recreation Permits are required for (a) commercial use, (b) competitive use, (c) off-road vehicle events involving 50 or more vehicles, and (d) special area use where the authorized officer determines the criteria of the Land and Water Conservation Fund Act, as amended; Sikes Act; Wild and Scenic Rivers Act; Federal Land Policy and Management Act; Taylor Grazing Act; or National Trails Act require their issuance.

The following definitions (from 43 CFR 8372.0-5<sup>1</sup>) are pertinent to organized competitive vehicle events:

- (a) **Competitive use** is any formally organized or structured use, event, or activity on public land in which there are the elements of competition between two or more contestants, registration of participants, and/or a predetermined course or area is designated. The term also applies to one or more individuals contesting an established record such as speed or endurance.
- (b) An **event** is a single, structured, organized, consolidated, or scheduled meeting or occurrence for the purpose of recreational use of the public lands. An event may be composed of several related activities.
- (c) An **off-road vehicle** (or **off-highway vehicle**) is any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain excluding (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is specifically authorized by the authorized officer or otherwise officially approved; (4) official use; or (5) any combat or combat support vehicle when used in times of national defense emergencies.

All applicants for Special Recreation Permits to conduct competitive off-highway vehicle events must comply with the application requirements and, upon issuance, permit conditions as indicated on Form 8370-1, *Special Recreation Application and Permit*. Generally, Special Recreation Permits for competitive events include stipulations that address various operational and resource protection issues, including course alignment and marking, safety, enforcement of rules, reclamation and cleanup, and monitoring.

### 3.8.6 Off-Highway Vehicle Recreation Areas

In developing the CDCA Plan, thirty-three potential motorized-vehicle free-play areas were evaluated by personnel from each resource division of the Desert Planning Staff. The inventory of potential choices included all such areas shown on the "Use" alternative, plus additional areas each resource division believed should be considered. The area-by-area impact analysis, decision criteria, opinions, and final boundary maps for motorized free-play areas were submitted to the Steering Committee for final decision on inclusion in the proposed CDCA Plan. Within these free-play areas, also recognized as "open areas" and "off-highway vehicle recreation areas," vehicle travel would be permitted anywhere if the vehicle is operated responsibly in accordance with regulations.

Two "open" areas within the planning area (Map 2-20 Appendix A) were approved through the CDCA Plan: Ford Dry Lake and Rice Valley Dunes Off-Highway Vehicle Recreation Areas, both of which are administered by the BLM Palm Springs-South Coast Field Office.

#### Ford Dry Lake

The McCoy Valley Area, which envelopes much of the Chuckwalla Valley inclusive of Ford Dry Lake, was among the areas evaluated through the CDCA Plan. This 251,400-acre area is bounded on the northeast by the lower foothill portion of the McCoy Mountains, on the north by the lower

---

<sup>1</sup> Note: On May 16, 2000, a proposed rule was published in the *Federal Register* (Volume 65, Number 95) to update the regulations at 43 CFR 8372. If the proposed rule is adopted, the new regulations would be found at 43 CFR 2930

foothills of the Palen Mountains, and along the south-southwest by the Little Chuckwalla and the Chuckwalla Mountains. A neck of land extending to the north is bounded by the Palen Mountains on the east, and the Palen Dry Lake and drainage basin on the west.

A major portion of the McCoy Valley Area was designated “open” in the Interim Critical Management Plan (1973). Many concentrated use zones occurred throughout the McCoy Valley Area and more than 94,000 visitor use days were recorded in 1978. The CDCA Proposed Management Plan recommended that no motorized-vehicle free-play occur in the McCoy Valley Area to protect sensitive resources, particularly bighorn sheep habitat because the McCoy Valley includes an important migration route between bighorn sheep ranges. The Environmental Impact Statement indicated that closure of this area to motorized-vehicle free-play would have a significant negative impact on this recreational activity. However, at the same time, it stated that vehicle free-play is probably less important in this area than other forms of vehicle use.

Based on public responses to the Proposed CDCA Management Plan, specific issues were reexamined by the Desert Planning Staff and changes were made to the Plan. As regards Ford Dry Lake, a public request for a free-play area near Blythe resulted in a portion of Ford Dry Lake being designated as an off-highway vehicle recreation area (1,135 acres).

Although no recent surveys have been conducted to ascertain levels of use on Ford Dry Lake, anecdotal information from the BLM's Palm Springs-South Coast Field Office staff indicates it receives little motorized-vehicle free-play use. This confirms the CDCA Plan's contention that vehicular free-play in this area is less important than other forms of vehicle use such as recreational touring on existing and approved routes of travel.

### **Rice Valley Dunes**

The McCoy Valley Area was evaluated during development of the CDCA Management Plan for its potential to provide motorized-vehicle free-play opportunities, but the Rice Valley area was not likewise considered. Consequent to public response to the Proposed Plan, vehicular access for the Rice Valley Dunes was changed from “existing routes of travel” to “open” (2,790 acres).

The Rice Valley Dunes Off-Highway Vehicle Recreation Area lies in the center of Rice Valley, an expansive area bounded on the north by the southern tip of the Turtle Mountains, on the east by the West Riverside Mountains, on the south by the Little and Big Maria Mountains, and on the west by the Arica Mountains. No surveys have been conducted to determine use levels in this OHV area, but BLM staff indicate that, like Ford Dry Lake, the Rice Valley Dunes area is not frequently used as a motorized-vehicle free-play area.

### **Lower Chemehuevi Valley (not a designated OHV Recreation Area)**

The lower Chemehuevi Valley area immediately south of Havasu Lake, California, was identified by the Needles Field Office staff as a “hot spot” in the California Desert Conservation Area. “Hot spots” are areas of intensive off-highway vehicle use where such activity is often not in conformance with existing management prescriptions and/or regulations and therefore require special management



consideration. In particular, the easternmost portion of Chemehuevi Wash exhibits evidence of considerable cross-country travel and hill-climbing activity by motorized vehicles in an area where vehicle use is restricted to existing and/or approved routes of travel. Such off-route activities may result in higher levels of erosion within the confines of the wash, ultimately leading to increased sedimentation in Lake Havasu itself. The easy accessibility of Chemehuevi Wash from the community of Havasu Lake, in conjunction with high levels of seasonal visitation of the resort by individuals not permanently residing there, is a prime contributor to the problem.

Most of the illegal activity (off-road travel and hill climbing) occurs within three sections of public lands administered by the BLM Lake Havasu Field Office (LHFO), Arizona. These lands occur outside critical desert tortoise habitat as designated by the U.S. Fish and Wildlife Service, and outside the NECO Plan boundary. Given these sections' isolation from the main body of public lands within jurisdiction of the LHFO, which is located on the Arizona side of the Colorado River, day-to-day management of the California lands is problematic.

The Chemehuevi Indian Tribe, whose lands are adjacent to public lands managed by the LHFO and Needles Field Office, is planning to expand its recreational facilities. Such expansion could intensify OHV-related problems in Chemehuevi Wash as increasing numbers of visitors are drawn to the area, including an increase of OHV use to the west, spreading beyond the reservation and LHFO public lands into the NECO Planning Area and critical tortoise habitat.

### **3.8.7 California Back Country Discovery Trails**

The California Back Country Discovery Trails system, upon approval, will provide a network of long-distance, interconnected, off-highway vehicle trails from the Mexican border to the Oregon border. This network will be a shared-use trail system providing recreational opportunities for all persons, including those who use street-legal and non-street legal (Green Sticker) vehicles, hikers, bicyclists, and equestrians. It will also provide a back country opportunity for non-traditional trail users such as persons with disabilities, senior citizens, and families with small children. Alternate/discovery Routes that provide alternatives to principal routes or access to points of interest will also be identified. (*Trail Strategy: California Back Country Discovery Trails, An Element of the California Statewide Motorized Trail System*. State of California, Off-Highway Motor Vehicle Recreation Division. September, 1996)

The beginning of the Statewide Motorized Trail System goes back to 1971 with the passage of the Chappie-Z-Berg Off-Highway Motor Vehicle Act by the California legislature. This act called for identifying use areas and trails where motorized recreationists could experience the physiographic diversity and natural beauty of the entire state. In 1989, a Memorandum of Understanding was signed by the U.S. Forest Service, Bureau of Land Management, and the Off-Highway Motor Vehicle Recreation Division (OHMVR) of the California Department of Parks and Recreation to guide the development of the trail system. In 1994, the State's Off-Highway Motor Vehicle Recreation Commission adopted California Back Country Discovery Trails as the official name for California's off-highway vehicle trail system and designated the California Back Country Discovery Trails as an element of the Statewide Motorized Trail System.

Principal route segments of the California Back Country Discovery Trails system must be unpaved, full width (tread width in excess of 50 inches), single lane, primitive types of routes intended for use by high-clearance

vehicles that are open to Green Sticker vehicles. Upon designation, trails will be appropriately signed. OHMVR Division is the lead agency for the California Back Country Discovery Trail system, but resource management, law enforcement, maintenance, and operation of the system remain the responsibility of the appropriate land management agency.

Routes of travel in the NECO Planning Area have not yet been designated as Discovery Trails. Nevertheless a report published by The Resource Protection Institute in May 1999 identified proposed California Back Country Discovery Trails in the BLM's California Desert District. In the NECO Planning Area, these are identified as follows:

Route 2: This route coincides with the Bradshaw Trail National Back Country Byway.

Route 4: This route begins at the southwestern corner of the Old Woman Mountains Wilderness, proceeds over Skeleton Pass to Danby, then heads west towards Ludlow.

Route 9: This route begins at the border of Mexico and California just south of Pilot Knob, skirts the east side of the Cargo Muchacho Mountains, passes Black Mountain, and then proceeds east in Vinagre Wash. It continues north to Milpitas Wash and then towards Blythe. From Blythe, it proceeds through Palen Pass to Camp Coxcomb, then north and east to the Cadiz Valley, around the south end of the Turtle Mountains, east to the Whipple Mountains, then north to the Chemehuevi Mountains. Passing through the Sacramento Mountains, it continues north to cross Interstate Highway 40. Route 9 alternate routes and route options are identified.

### **3.8.8 Rockhounding**

Rockhounding is the collection of rocks and minerals by amateur mineralogists for recreational enjoyment. The term "rockhound" includes people who casually pick up something that catches their eye and serious collectors who travel around the country to display their discoveries at rock and gem shows. Areas where certain rocks and minerals have historically been collected in the California desert were identified by a consortium of rockhound clubs about 20 years ago during preparation of the *California Desert Conservation Area Plan*. These areas are depicted on Map 4-2.

Rockhounding in the California desert relies heavily on motorized-vehicle access because of the remoteness of many collection sites and the nature of the activity. The weight of rocks and minerals necessitates that one not venture too far from a vehicle if more than small samples are to be collected. To the degree that motorized-vehicle access is constrained, opportunities for rockhounding are concomitantly limited. Upon enactment of the California Desert Protection Act of 1994, 25 percent of identified collection sites in the California Desert Conservation Area fell into newly designated wilderness areas wherein motorized-vehicle access by the general public is prohibited.

Enactment of the California Desert Protection Act also created the Mojave National Preserve managed by the National Park Service (formerly the East Mojave National Scenic Area managed by the BLM) and expanded Death Valley and Joshua Tree National Monuments, thereby encompassing lands formerly managed by the BLM. The National Monuments were also re-designated as National Parks in accordance with the Act. As

a result of the legislation, an additional 25 percent of identified rockhound collection sites fell into these new and expanded areas managed by the National Park Service wherein rock collection is not allowed.

### **3.8.9 Long-Term Visitor Areas**

Every year thousands of visitors come to southern California and Arizona from all parts of the United States and Canada to take advantage of the mild winter climate and recreational opportunities offered in this desert region. While some visitors choose to isolate themselves from others, the vast majority of these people tend to congregate in relatively large, high-density communities. Traditionally, much of this use was in established campgrounds. In the late 1970s and early 1980s, there began a trend of establishing these communities in the open desert where facilities are rarely available. Here, the impact on the fragile desert environment can be severe, especially when visitors stay for extended periods in the same location.

In response to this situation, the BLM established several Long-Term Visitor Areas (LTVAs) along the lower Colorado River in 1983. Designated sites were selected using criteria developed during the land management planning process, and environmental assessments were completed for each site location. The designation of LTVAs assures that specific locations are available for long-term use year after year, and that inappropriate areas are not used for extended periods. In conjunction with establishing the LTVAs, a limit on camping on public lands outside LTVAs was enacted. Visitors could camp in one location outside an LTVA, unless closed to such use, for no more than 14 days in any 28-day period.

Within the NECO Planning Area, there are three LTVAs: Mule Mountains (2,554 acres) (Palm Springs Field Office); Midland (512 acres) (Palm Springs Field Office); and Pilot Knob (158 acres) (El Centro Field Office). In response to increasing interest in long-term camping in the Midland area, the Midland LTVA was expanded in 1996. While the Mule Mountains LTVA is very large, 90 percent of the use is contained in two campgrounds within areas about 3 miles apart from each other.

### **3.8.10 Joshua Tree National Park**

In Joshua Tree National Park, natural and cultural resources provide outstanding recreational opportunities for the more than 1.2 million visitors that come to the area annually. The wilderness provides an opportunity for solitude in nature and for primitive recreation such as hiking, backpacking and horseback riding. Opportunities abound for viewing, studying, and photographing a diversity of flora and fauna. Massive boulders and rock outcrops provide some of the best rock climbing in the United States. Skilled and novice technical rock climbers from around the world are attracted to the challenging climbing routes.

### **3.8.11 Chocolate Mountain Aerial Gunnery Range**

The Chocolate Mountain Aerial Gunnery Range is closed to public access. These lands are not available for recreational purposes.

### **3.8.12 Summary**

Off-highway vehicle touring, hunting, primitive camping in undeveloped sites, and other recreation activities that rely on large expanses of relatively unpopulated and undeveloped desert landscapes continue to be important within the NECO Planning Area despite statewide survey results reported by California State Parks (1998)<sup>2</sup>. In general, the overall level of recreational use is currently low throughout the planning area except on a site-specific, seasonal basis. For instance, use in developed campgrounds and long-term visitor areas, as well as on lands adjacent to the Imperial Sand Dunes Recreation Area, is often moderate to high during the cooler months of the year. As distances from concentrated use zones increase, there is generally a concomitant decrease in use. Regarding trends of popular recreation activities in the planning area, use appears to be neither substantially increasing nor diminishing.

---

<sup>2</sup> Statewide trends, statistical information, and survey results presented in this section are derived from Public Opinions and Attitudes on Outdoor Recreation in California 1997, California State Parks, 1998.

### 3.9 Off-Highway Vehicle Use / Motorized Vehicle Access

The *California Desert Conservation Area Plan* (1980), as amended, states the following:

Other than those who are simply crossing it, most users of the desert travel some of the time on its network of maintained gravel and dirt roads, ways, trails, and accessible desert washes. There are many of these “routes of travel” in the California Desert Conservation Areas (CDCA).

According to one study, the CDCA has 15,000 miles of paved and maintained roads, 21,000 miles of unmaintained dirt roads, and 7,000 miles of vehicle-accessible washes. However, these routes are not evenly distributed, and desert topography and vegetation do not prevent, and sometimes encourage, cross-country travel in motorized vehicles. Desert soils and vegetation retain the marks of this kind of travel for many years, except in a few places where occasional rains, windstorms, and flash floods erase them. Thus, one vehicle traveling cross-country can create a new route of travel. The proliferation of roads and trails in the CDCA has resulted in a serious problem in some areas and provides the most difficult management issue for BLM and the public.

Many of the desert’s loveliest and most fragile resources can only be enjoyed by use of vehicle access routes, but these resources are quickly destroyed if vehicles travel everywhere. Most people who go to the desert revel in its spaciousness and the feeling of solitude and freedom it provides. However, growing numbers of vehicles and uncontrolled expansion of this network of roads and trails may damage this solitude, and heavy-handed regulations to control this traffic would certainly affect the sense of freedom.

The question of managing access to the desert is especially sensitive. Vehicle access is confused with the use of vehicles for play. Public comments make it clear that motorized-vehicle access and off-highway vehicle play need to be clearly separated and managed differently. . . .

While the Bureau is responsible for vehicle use on public lands, much of the control of vehicle travel in the desert is the responsibility of the user, whether the goal is recreational or commercial. The Bureau of Land Management does not and will not have the funds or staff to oversee vehicle use throughout the desert at all times. Therefore, rules for vehicle use must be fair, understandable, easy to follow, and reasonable if they are to be publicly accepted. Only commitment by the public, the owners of these lands, will insure success of rules and guidelines.

#### 3.9.1 Issuance of Executive Orders and Development of Regulations

The increased popularity and widespread use of off-highway vehicles (OHVs) on federal lands in the 1960s and early 1970s prompted the development of a unified federal policy for such use. Executive Order 11644 (“Use of Off-Road Vehicles on the Public Lands”) was issued on February 9, 1972 (87 F.R. 2877), to establish policies and provide for procedures to control and direct the use of OHVs on federal lands so as to

(1) protect the resources of those lands, (2) promote the safety of all users of those lands, and (3) minimize conflicts among the various uses of those lands. The order directs the agency heads responsible for managing the federal lands to issue regulations governing the designation of areas where OHVs may and may not be used. Under the order, OHV use can be restricted or prohibited to minimize (1) damage to the soil, watersheds, vegetation, or other resources of the federal lands; (2) harm to wildlife or wildlife habitats; and (3) conflicts between the use of OHVs and other types of recreation. It also requires the federal agencies to issue OHV use regulations, inform the public of the lands' designation for OHV use through signs and maps, enforce OHV use regulations, and monitor the effects of OHV use on the land.

Executive Order 11989 ("Off-Road Vehicles on Public Lands") was issued on May 24, 1977 (42 F.R. 26959), and contains three amendments to the previous order. While these amendments lift restrictions on the use of military and emergency vehicles on public lands during emergencies, they otherwise strengthen protection of the lands by authorizing agency heads to (1) close areas or trails to OHVs causing considerable adverse effects and (2) designate lands as closed to OHVs unless the lands or trails are specifically designated as open to them.

The BLM developed regulations (Title 43 of the Code of Federal Regulations [CFR] 8340) in response to the executive orders. These regulations require the agency to designate areas where OHVs may be used and to manage the use of OHVs on public lands through the resource management planning process, which allows for public participation. The regulations also require the BLM to monitor the use of OHVs, identify any adverse effects of their use, and take appropriate steps to counteract such effects.

### **3.9.2 Development of the CDCA Management Plan**

Recognizing that resources of the California desert can and should "provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles," Congress, through Section 601 of the Federal Land Policy and Management Act of 1976 (FLPMA), directed the Secretary of the Interior to prepare and implement a comprehensive, long-range plan for the management, use, development, and protection of the public lands within the California Desert Conservation Area. In response, the Bureau of Land Management prepared the CDCA Management Plan (1980), an element of which addresses motorized-vehicle access.

Consistent with Executive Orders No. 11644 and No. 11989, all public lands in the California desert were designated as "open," "limited," or "closed" through the CDCA Plan. Subsequent to designation of areas for motorized-vehicle use, the Plan required on-the-ground route designation to occur within Multiple-Use Class (MUC) L (Limited), while existing routes of travel could be used in Multiple-Use Classes I (Intensive), M (Moderate) and C (Controlled), with MUC C being managed commensurate with MUC L guidelines until Congress designated these areas as wilderness. "Existing routes of travel" were defined as routes existing before December 31, 1978, the date of full aerial photo coverage of the CDCA.

Route designation criteria for MUC L were identified in the CDCA Plan as follows:

- Is the route new or existing?
- Does the route provide access for resource use or enjoyment?
- Are there alternate access opportunities?

- Does the route cause considerable adverse impacts?
- Are there alternate access routes which do not cause considerable adverse impacts?

### 3.9.3 1982 Amendment to the CDCA Management Plan

Subsequent to approval of the CDCA Plan in 1980, environmental organizations filed action in U.S. District Court, C.D. California, challenging its route designation criteria. In response, the BLM amended the CDCA Plan's Motorized-Vehicle Access element (1982 Plan Amendment Three, approved May 17, 1983) to conform with 43 CFR 8342.1. Route approval would be based on the following criteria:

- (1) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (2) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- (3) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (4) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

### 3.9.4 MUC Guidelines for Motorized-vehicle Access

The 1982 amendment modified or reiterated prescriptions relative to motorized-vehicle access, including changes to the MUC guidelines established through the 1980 Plan. These guidelines are described below, and their application relative to the NECO Plan is discussed where clarification is necessary.

**MUC C:** Vehicle use on lands preliminarily recommended as suitable for wilderness, but not yet so designated by Congress, will be managed under guidelines described for Multiple-Use Class L.

**NECO Plan:** Congress designated certain public lands in the California desert as wilderness through the California Desert Protection Act of 1994 (CDPA). Therefore, interim guidelines for managing these lands prior to designation are no longer applicable to the NECO Planning Area. All Wilderness Study Areas were released from further consideration as wilderness. Vehicle access in designated wilderness will be allowed in accordance with provisions set forth in the Wilderness Act of 1964, the CDPA, the regulations at 43 CFR 8560, and applicable wilderness management plans.

**MUC L:** Vehicle access will be directed toward use of approved ("open" or "limited") routes of travel. Routes not approved in MUC L areas will be reviewed and, after opportunity for public comment, those routes deemed to conflict with management objectives or to cause unacceptable resource damage will be given priority for closure through obliteration, barricading, or signing. All

remaining routes of travel in these areas will be monitored for either inclusion as approved routes, or for closure to resolve specific problems.

**NECO Plan:** In the California Desert, washes are frequently used for motorized-vehicle access. Given the extent of washes accessible by motorized-vehicles--especially throughout the vast acreage of desert dry wash woodland in the southern portion of the planning area--the task of identifying individual wash routes for inclusion in the NECO inventory was considered unreasonable to undertake. Consequently, washes are addressed in terms of "wash zones."

The use of washes within "washes open zones" or "washes limited zones" is restricted to those considered "navigable," unless it is determined that vehicle use must be further limited. (See "Washes" below regarding navigability.) Navigable washes in "washes open zones" and "washes limited zones" are designated "open" and "limited" *as a class*, that is, washes are not individually designated unless they are identified as specific routes in the NECO route inventory. In "washes limited zones," navigable washes are available for use on a seasonal basis; the periods of use are established through the NECO Plan or subsequent designation process. The use of washes in "washes closed zones" is limited to those specifically approved for use; all other washes, whether navigable or not, are "closed" *as a class*. All MUC L areas are considered "washes open zones" unless specifically designated "limited" or "closed."

**MUC M:** Access will be on "existing" routes unless it is determined that use on specific routes must be further limited. An "existing" route is one established before approval of the Desert Plan in 1980, with a minimum width of two feet, showing significant surface evidence of prior vehicle use or, for washes, history of prior use.

**NECO Plan:** Navigable washes in "washes open zones" are considered "existing" routes *as a class* and available for motorized-vehicle use unless such use is restricted through route-specific designations of "limited" or "closed."

**MUC I:** Unless it is determined that further limitations are necessary, those areas not designated "open" will be limited to use of "existing" routes.

**NECO Plan:** Navigable washes in "washes open zones" are considered "existing" routes *as a class* and available for motorized-vehicle use unless such use is restricted through route-specific designations of "limited" or "closed."

**ACECs:** In ACECs where vehicle use is allowed, vehicle access will be managed under the guidelines for MUC L.

**Undesignated Areas:** In areas not assigned to a Multiple-Use Class, the route approval process will be applied as needed to resolve specific problems and to establish a cohesive program.



### 3.9.5 Washes, Sand Dunes, and Dry Lakes

The 1982 CDCA Plan amendment also addressed motorized-vehicle access on washes, sand dunes, and dry lakes:

#### Washes

Vehicle access using desert washes will be governed by the area designation for the vicinity in which the wash is located. In areas designated “closed,” vehicle access in desert washes will be prohibited. In areas designated “open,” vehicle access in desert washes will be permitted. In all “limited” areas, vehicle use in desert washes will be controlled in the same manner as for routes of travel in MUC L, M, and I. In other words, vehicle use in MUC L will be directed toward approved desert washes; access in MUC M will be in existing washes, unless it is determined that use of specific washes must be further limited; and access in MUC I will be limited to existing washes in areas not designated “open.” In addition, washes as access routes may have some type of travel limitation, such as speed limits or seasonal closure imposed to protect the resources found in or along the wash, or to minimize conflicts with other uses. [Also see discussion above under “MUC guidelines for motorized-vehicle access” regarding the use of washes *as a class*.]

In the context of motorized-vehicle access, the term “wash” is defined as a watercourse, either dry or with running or standing water, which by its physical nature--width, soil, slope, topography, vegetative cover, etc.--permits the passage of motorized vehicles, thereby establishing its “navigability” (Appendix VI, CDCA Plan 1980). The implication of this definition is that washes can be considered as routes of travel only if wash banks are not compromised (primarily a function of width), soil stability is not adversely affected, and vegetation is not destroyed consequent to the passage of vehicles. If access to a wash by motorized vehicles results in vegetative destruction, disturbance to the integrity of wash banks, or an unacceptable degree of soil erosion--the destruction of natural features--the wash is not considered to be a route of travel.

#### Sand Dunes and Dry Lakes

Due to the unique geography of these areas, “routes of travel” cannot be readily delineated. Therefore, significant sand dunes and dry lakes within the California desert are designated either “open” or “closed” to vehicular travel regardless of the Multiple-Use Class in which the dune system or dry lake is located. The management objective for each dune system or dry lake will dictate the area’s vehicle use designation.

### 3.9.6 Route Designation Definitions

The 1982 amendment defined route designations in the following manner:

#### Open Route

Access on the route by motorized vehicles is allowed.

### **Limited Route**

Access on the route is limited to use by motorized vehicles in one or more of the following ways and limited with respect to:

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

The same exceptions to motorized-vehicle use of closed routes also apply to limited routes (see below, “Closed Route”).

### **Closed Route**

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

Except in Congressionally-designated wilderness areas, “open,” “limited,” and “closed” route designations may be made in each of the Multiple-Use Classes, in Areas of Critical Environmental Concern (ACECs), and in unclassified lands.

### **3.9.7 Route Designation and CDCA Management Plan Implementation**

From 1973 to approval of the CDCA Plan in 1980, BLM managed access under the Interim Critical Management Program (ICMP). An integral part of that program was the release of a series of 22 maps covering the entire CDCA. These maps illustrated the ICMP designations and delineated a network of access routes compiled from existing maps, public input, and field review.

With approval of the CDCA Plan, the new OHV area designations became effective, and the ICMP maps and designations became invalid. Until implementation of the CDCA Plan’s Motorized-Vehicle Access Element is complete, existing routes of travel may be used in all MUC L and M areas, in unclassified lands, and in those MUC I areas not designated “open” to motorized-vehicle access. In some areas, certain routes were closed under ICMP guidelines. These will remain closed. As implementation proceeds, inclusive of the route designation process associated with the NECO planning effort, some old limitations, including closures, may be revoked and others added.

### **NECO Route Inventory Process**

Route designation for the NECO Plan began with developing an inventory of existing routes within the planning area. The inventory process is described in Appendix L. Inventoried routes are shown on Map 2-29 Appendix A.

### **Recreational Touring Routes**

Much recreational motorized-vehicle activity in the California desert consists of driving for pleasure, or “touring.” Such touring ranges from travel on paved roads to traversing extremely difficult routes that require the use of four-wheel drive vehicles and winches. In the context of the NECO Plan, a network of routes that would satisfy the desires of the “touring” public becomes an important recreation resource to be considered alongside all other resource values. In identifying such a network, several criteria are considered:

- scenic quality
- challenge
- remoteness
- uniqueness
- historic value
- connectivity
- opportunity for exploration

In 1996, a request to the public was made to assist with identifying a network of routes for recreational touring. Three public workshops were convened (Riverside, El Centro, and Blythe) to provide further information about designating routes through the NECO Plan as well as to ask for help with identifying this touring network. No substantive assistance from the public occurred. BLM staff subsequently identified the recreational touring network as it appears on the routes of travel alternatives maps 2-31 through 2-34 Appendix A.

### **Route Designation Revisions**

Decisions affecting vehicle access, such as area designations and specific route limitations, are intended to meet present access needs and protect sensitive resources. Future access needs or protection requirements may necessitate changes in these designations or limitations, or the construction of new routes. For mining operations, additional access needs will be considered in accordance with regulations pertaining to surface management of public lands under the U.S. Mining Laws (43 CFR 3809). Access needs for other uses, such as roads to private lands, grazing developments, or communication sites, would be reviewed on an individual basis under the authority outlined in Title V of FLPMA and in accordance with appropriate regulations. Each proposal would be evaluated for environmental effects and subjected to public review and comment. As present access needs become obsolete or as considerable adverse impacts are identified through the monitoring program, area designations or route limitations may be revised. In all instances, new routes for permanent or temporary use would be selected to minimize resource damage and use conflicts consistent with the criteria at 43 CFR 8342.1.

Proposals for additional access needs may be submitted at any time to the Bureau of Land Management Field Office which has jurisdiction over the subject lands.

### 3.10 Mineral Management

Within the Northern and Eastern Colorado Desert planning area, there are currently 16 mining operations and 12 significant exploration programs being conducted on combined private and public lands. Many varieties of mineral resources are present in the California Desert, including 45 different mineral commodities in the planning area.

The largest mining operations are the open pit, heap leach gold mines in Imperial County and the salt extraction mines on Bristol and Cadiz playas in San Bernardino County. The former are few in number and cover a few thousand acres. The latter are many small disturbances (e.g., roads and pits) occupying 1-2 percent of each playa surface but scattered over about 15 percent of the each of the two playas. While the active life of gold operations is relatively brief (5 to 15 years) - some are currently in rehabilitation phases, the current nature and level of salt extraction is expected to remain constant for decades.

In the Northern and Eastern planning area, minerals are disposed from public lands under federal laws, and guided by regulations promulgated pursuant to those laws. Most exploration and development activity on public lands, and associated with occupation and use of the surface resources are guided and authorized under the *General Mining Law of 1872* (30 U.S.C. 22 et seq). This law allows prospecting and development of valuable mineral deposits through a location/appropriation system. The law allows use of surface resources, qualified by compliance with appropriate federal and state laws and rules. Regulations developed pursuant to the Federal Land Policy and Management Act (FLPMA), and contained in Title 43, Code of Federal Regulations (CFR) Subparts 3802 and 3809, guide the Bureau in managing surface operations under the mining laws for purposes of preventing undue or unnecessary degradation to public land. Minerals subject to the operation of the General Mining Law are termed *locatable minerals*. When a discovery of a valuable mineral has been made by a mining claimant, he/she may acquire a possessor right to the mineral and may proceed with mining and acquisition of title to the land and minerals through a mineral patent. All activities on mining claims are reviewed by the BLM to ensure that operations will not cause unnecessary or undue degradation to public land and resources. In addition, other federal, state, and local permits or authorizations may be required to operate on a mining claim.

Common construction and building materials, such as sand and gravel, stone, cinders, pumice, and clay, found on public land, are permitted or sold by the BLM under the authority of the *Materials Act of July 31, 1947* (30 USC 601, et seq.). Material is sold by contract by the BLM at fair market value.

Certain federal lands, such as military reservations, national parks, and wilderness, are closed to mineral operations except for valid existing rights established at the time of withdrawal.

Maps 3-8, 3-9, and 3-10 Appendix A show potential for metallic, construction, and industrial minerals in the planning area.

## 3.11 Cultural Resources

### 3.11.1 Background

Much of our knowledge and understanding of the historic and cultural contexts for evaluating the affected environment and potential impacts to cultural resources is grounded in studies and assessments initially completed for the *California Desert Conservation Plan* in the late 1970s. The years between 1969 and 1980, culminating with the approval of the CDCA Plan, experienced an intensive and focused period of study for cultural resources in the California Desert. Cultural resources survey and site information, as well as the management proscriptions developed during the planning effort, continue to provide the principle management paradigm for cultural resources in the California Desert.

In addition to existing data, the CDCA planning effort carried out a systematic sampling program for the purpose of identifying and recording prehistoric and historic sites. One goal of that sampling program was to develop a predictive model for archaeological site locations desert-wide. During the CDCA planning effort, 179,200 acres (280 sq. mi.) were systematically inventoried throughout the CDCA using a variety of approaches, from stratified random sample surveys to intensive purposive surveys. Of that acreage, it is estimated that approximately 42,500 acres (66 sq. mi.) were located in the NECO Planning Area. This includes elements of those areas delineated in the CDCA plan as the Central Colorado, Picacho/Big Maria/Whipple Mountains, and Imperial study regions. In this area, survey coverage is described as ranging from 0.5 percent for 2.5 million acres in the Central Colorado region, to 1 percent for the Picacho/Big Maria/Whipple Mountains region. For these areas, 488 historic and archaeological sites, and other cultural resources loci had been identified and recorded as of 1980.

In conjunction with these field surveys, regional overviews and special studies were prepared that synthesized the regional archaeological, ethnological, ethno-historical, and historical data; discussed past and projected research; identified significant cultural and environmental relationships; and identified significant research and management questions and needs. Of the seven regional overviews completed, two overviews deal specifically with cultural resources located within the NECO Planning Area (East Mojave: King and Casebier, 1976; Colorado Desert: Crabtree, Warren, and Knack, 1980, and Gallegos, et. al., 1979). In addition, six of the special studies, which deal with mining (Shumway, Vredenburg, and Hartill, 1980), California Desert rock art (Eastvold, 1974), historic trails and wagon roads (Warren and Roske, 1978), early historic accounts (Casebier, 1978), early human occupation (Davis, Brown, and Nichols, 1980), and an assessment of impacts to cultural resources (Lyneis, Weide, and Warren, 1980), are germane to the NECO Planning Area.

The stated goals of the amended CDCA plan continue to form the basis of BLM cultural resources programs and activities. These goals include:

- Broadening the archaeological and historical knowledge of the CDCA through continuing inventory efforts and the use of existing data. Continuing the effort to identify the full array of the CDCA's cultural resources.
- Preserving and protecting a representative sample of the full array of the CDCA's cultural resources.
- Ensuring that cultural resources are given full consideration in land use planning and management decisions, and ensuring that BLM authorized actions avoid inadvertent impacts.

- Ensuring proper data recovery of significant (National Register quality) cultural resources where adverse impacts can be avoided.

To achieve the goals of the CDCA plan, seven basic actions were proposed and continue to form the basis of cultural resources management in the CDCA. These actions include: (1) Recognition through ACEC and other special designations; (2) Preservation and Protection; (3) Monitoring; (4) Inventory; (5) Mitigation Plans; (6) Research, and (7) Review and Coordination. The cornerstone to implementation of the cultural resources components of the CDCA plan was a Programmatic Agreement between BLM and the California State Historic Preservation Officer (Programmatic Memorandum of Agreement Among the Advisory Council on Historic Preservation, the Bureau of Land Management (DOI), and the California State Historic Preservation Officer Regarding the California Desert Conservation Area (1980)).

In addition to the 1980 Programmatic Agreement for the CDCA, BLM also carries out cultural resources program management activities under a National Programmatic Agreement (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 the BLM will meet its Responsibilities under the National Historic Preservation Act (1997)). The National Programmatic Agreement is implemented in California by a Protocol Agreement between BLM California and the California SHPO (State Protocol Agreement Between The California State Director of The Bureau of Land Management And The California State Historic Preservation Officer (1998)). The new Programmatic Agreement and Protocol continue to emphasize all of the goals and actions necessary to achieve the cultural resources management proscriptions outlined in the CDCA Plan, but provide BLM more authority and responsibility in carrying out these responsibilities. This new management paradigm places an emphasis on proactive cultural resources management and decision-making and implementation of the provisions of Section 110 of the NHPA, while providing greater flexibility and streamlining to Section 106 provisions of the act.

The CDCA plan led to the identification and establishment of Areas of Critical Environmental Concern (ACEC). Of the 118 ACECs currently established, seventeen are located within the NECO Planning Area. Of these seventeen ACECs, eleven are designated in part because of their significant cultural resources values (Table 3-12).

**Table 3-12. Areas of critical environmental concern designated for cultural resources values**

ACEC Name	Number
Marble Mountain Fossil Bed	48
Mopah Spring	75
Whipple Mountains	53
Pattons Iron Mountain Divisional Camp	52
Palen Dry Lake	55
Alligator Rock	78
Corn Springs	56
Mule Mountains	58
Gold Basin/Rand Intaglios	67
Indian Pass	68
Pilot Knob	73

Although the cultural resources data developed for the CDCA plan continue to provide the baseline for preservation planning, our information base for the planning area has expanded over the last twenty years as a result of survey and identification efforts completed for proposed land use actions as well as BLM cultural resource program initiatives. Current cultural resources data were obtained from records available in the California Historic Resources Information System and through a review of BLM cultural resources records.

### 3.11.2 Historic and Archaeological Sites

As of the year 2000, more than 3700 historic and archaeological sites have been identified and documented in the NECO Planning Area (Table 3-13). These resources represent the complete span of human occupation and activities in the desert over the past 10 - 12,000 years. Our current knowledge about these sites and the human behavior and history that they represent is based on the results of the systematic survey of approximately 3.9 percent (220,000 acres, 343 sq. miles)<sup>3</sup> of the land base in the planning area, which covers an area of more than 5,547,000 acres. Results of these systematic surveys are reflected in approximately 1500 individual survey reports (Table 3-14). Based on known resources and survey coverage, it is evident that the number of sites present in the planning area will increase as additional surveys are carried out. Only one region-wide overview has been completed by BLM for this area since the CDCA Plan. This overview describes the historic context for the World War II era Desert Training Center--California/Arizona Maneuver Area (Patton's Camps). The overview was completed in 2000 (Bischoff, 2000).

---

<sup>3</sup> Acreage projections are only estimates extracted from available data sources and are only presented for comparative purposes.

**Table 3-13. Distribution of historic and archaeological sites in the NECO Planning Area**

Sites	Number
<b>Total historic and archaeological sites within NECO planning boundaries</b>	3,305
Sites on BLM managed lands	2,539
Sites on State of California managed lands	471
Sites on National Park Service managed lands	110
Sites on Department of Defense managed lands	169
Sites on other lands	16
Sites within San Bernardino County	658
Sites within Riverside County	833
Sites within Imperial County	1,816

**Table 3-14. Distribution of cultural resource survey activity in the NECO Planning Area**

Surveys	Number of Surveys	Acres	Percent NECO
Total number of cultural resource surveys located with NECO planning boundaries (5,547,723 acres total)	1,523	220,000	3.9
Surveys on BLM managed lands	1,296	181,000	3.3
Surveys on other lands	234	39,000	0.6

Currently, there are 10 historic properties formally listed on the National Register of Historic Places located within the NECO Planning Area. These sites are identified as follows:

- Fages-De-Anza Trail/Southern Emigrant Road
- Blythe Intaglios (Earth Figures of California-Arizona Colorado River Basin)
- Piute Pass Archaeological District
- Topock Maze Archaeological Site
- McCoy Spring Archaeological Site
- North Chuckwalla Mountain Quarry District
- North Chuckwalla Mountains Petroglyph District
- Stonehead (Earth Figures of California-Arizona Colorado River Basin)
- Winterhaven Anthropomorph and Bowknot (Earth Figures of California-Arizona Colorado River Basin)
- Yuma Crossing and Associated Sites



### **3.11.3 Paleontological Resources**

Major deposits within the CDCA known to contain paleontological resources have been described in reports prepared for the CDCA plan (Woodburne, 1979; Murphy, 1978; Axelrod, 1979). With the exception of Quaternary lacustrine strata, the majority of the known highly sensitive areas and predicted areas occur in areas of some relief where dissection has exposed the fossilized remains. These areas as a whole are randomly dispersed throughout the California Desert Conservation Area (CDCA Plan, 1980: E-43).

### **3.11.4 Traditional Cultural Properties**

Native American tribal groups were the first inhabitants of the California Desert region and continue to hold lands in the desert today. Archaeological sites, plant collection areas, ritual and ceremonial areas, and sacred areas are significantly connected to specific desert resources and regions. Potential threats and impacts to these resources are of concern to these tribes. These resources, often difficult to identify, do not have associated physical or archaeological components. Locations may be held as closely guarded secrets by various tribes (CDCA Plan, 1980: E-43).

### 3.12 Land Use

BLM and JTNP have land acquisition programs although few inholdings remain in JTNP.. JTNP has recently received a large donation of land from the Wildlands Conservancy. BLM has significant inholdings, most notably for tortoises in the checkerboard ownership pattern in critical habitat in Imperial County (Map 1-3 Appendix A). In the past 10 years, the BLM has purchased lands primarily on Chuckwalla Bench using Land and Water conservation Funds and compensation funds. CDFG has purchased lands in Chemehuevi critical habitat using compensation funds. The CDCA Plan allows for disposal of MUC M lands and unclassified lands. In addition, BLM's Statewide Tortoise Management Policy prohibits disposal of Category I tortoise habitat and greatly restricts the disposal of Category II habitat.

#### 3.12.1 Utilities

Probably the most significant use of the California Desert is for linear transmission facilities for electrical power, oil and gas products, water, and coaxial and fiber-optic cables. These facilities serve a critical need for infrastructure for people living in Southern California and the Southwest in general. On federal lands, rights-of-way for these facilities are granted under various land laws. To some extent all the federal agencies have rights-of-way crossing their lands.

By their design, type, operation, and maintenance, utilities create varying degrees of impact and population fragmentation. Pipelines create the most severe disturbance with a long period to recover and then re-disturbance for heavy maintenance (e.g., pipe replacement, pipe replacement, pipe recoating). Maintenance activities for several of the major pipeline systems have undergone desert-wide review by USFWS and have received programmatic biological opinions (e.g., Southern California Gas Company System, Arco Pipe Line)

Some of the electrical transmission systems have also received programmatic biological opinions for routine maintenance activities. Most of these utilities are contained within one or more of several utility corridors designated by the CDCA Plan (Map 2-1 Appendix A). The predominant orientation of the designated corridors is east-west, with a number of entry points to the planning area along the Nevada-Arizona border. Some of these utilities are outside of existing corridors (mostly low voltage distribution lines, private water pipelines and wells, telephone lines, etc.

There are also several communication sites within the planning area. Types of facilities include radio and TV broadcasting, microwave, cellular, commercial mobile radio, and private mobile radio.

#### 3.12.2 Withdrawals

About 2,644,460 acres (48 percent) of federal land in the planning area are withdrawn, or segregated, from appropriation under various public land laws. Public uses in these areas are limited in some cases depending upon the particular withdrawal. In general, limitations focus on wilderness, military land, public access, mineral entry, land disposal, and rights-of-way. To varying degrees, these segregations eliminate some conflicts between use and conservation.

### **3.12.3 Colorado River Aqueduct**

Based on the location of facilities and their operation, the Metropolitan Water District of Southern California (MWD) land can be put into three zones: (1) developed (concrete, chain-link fenced canal; pumping stations with shop, housing, and administrative areas); (2) semi-developed (service roads, barrow areas, flood protection dikes, power lines); and (3) undeveloped (areas for water wasting in the event the aqueduct needs to be drained, tunnel sections, old aggregate sources). These three zones have different effects and opportunities for species and habitat management. See Map 1-3 Appendix A for the location of the MWD right-of-way.

### **3.12.4 Other Land Uses**

In addition to roads associated with utilities, there are access roads associated with private inholdings, both authorized and unauthorized, throughout the planning area, especially in the northeastern portion of Imperial County where there is an extensive checkerboard land pattern.

Authorizations have been issued for a variety of uses, such as rain gauges, seismic detection/recording devices, water wells, apiary sites, research and filming.

The military periodically requests use of lands for various exercises, including search and rescue, firearms qualifications, land navigation training, reconnaissance and surveillance, cargo drops, parachute tests, and vehicle tests.

A number of small landfills have been in operation for a number of years near urban centers. Two large regional landfills, Mesquite (near Glamis) and Eagle Mountain (near Desert Center and Joshua Tree National Park) have been authorized, but are not yet operational. Landfills are not included as an element of land management by federal land management agencies. Planning, proposals, environmental analysis, and approval occur under the authority of local jurisdictions. There is a considerable body of documentation regarding needs and environmental concerns (e.g., ground water, species/habitats, air quality, and park/wilderness management) that is beyond the scope of this plan to describe. This plan does not address future need or siting of landfills.

## Chapter 4—Environmental Consequences

### Introduction

This chapter relates the environmental consequences of the alternatives considered on area resources and uses. An interdisciplinary approach was used in developing and analyzing environmental consequences. Both adverse and beneficial consequences are discussed. Mitigating measures in manuals, policy statements, and congressional acts are incorporated into this environmental analysis. The identified consequences in this chapter are considered unavoidable after applying these prescribed mitigation measures.

### Assumptions For Analysis

The following general assumptions were used in this analysis:

- Implemented actions from decisions made in each management plan alternative would be in compliance with all valid existing rights, federal regulations, and bureau policies.
- Implementation of the approved Plan would begin 30 days after the Record of Decision is signed by the BLM state director, and all implemented actions would subsequently conform to the specific approved Plan decisions.
- Impacts are considered to be direct, unless otherwise indicated.
- The discussion of impacts is based on the best available data. Knowledge of the planning area and professional judgement, based on observation and analysis of conditions and responses in similar areas, were used to infer environmental impacts where data is limited.
- Acreage figures and other numbers used in this analysis are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations.
- Effects described would be short-term, unless otherwise stated, and would occur during, or immediately, following implementation of an action.
- Short-term impacts would occur over a 5-year period following implementation, while long-term impacts would occur over a 5- to 20-year period.

### Chapter Organization

The presentation of environmental consequences in this chapter is organized by the four alternatives: No Action, Proposed Plan, Small DWMA--A, and Small DWMA--B. Each of the alternatives undergoes in-depth analysis of impacts organized by resources/topics discussed in Chapter 3--Affected Environment, as listed below. The resources/topics to undergo in-depth analysis are organized by Issue sections from Chapter 2. Direct and indirect impacts are discussed for each resource/topic. A brief summary is presented for each resource and topic. After discussion of the impacts for each alternative, they are compared and contrasted

in summary tables near the end of this chapter. This summary table is followed by cumulative effects discussion. The cumulative effects discussion includes past, present, and future plans and projects affecting the California Desert Conservation area.

1. Air Quality
2. Water Quality
3. Soils
4. Biological Resources subdivided into wildlife and vegetation
5. Wilderness
6. Livestock Grazing
7. Wild Horses & Burros
8. Recreation Use
9. Motor Vehicle Access
10. Mineral Development
11. Cultural Values
12. Lands and Land Use Authorization
13. Socio-Economic Conditions

### **Reasonably Foreseeable Future**

This section presents a scenario of change or trend in general land uses over the next several years. It is meant to help guide the analysis of effects, including cumulative effects, in this chapter. The scenario is based upon no change in the current land use plan.

#### **Lands Actions**

Little urban growth is expected in the planning area due to the remoteness of the area from existing urban centers, the relatively small amount of private lands in the area, lack of infrastructure, and the relatively harsh, water-less climate. County planning departments project little, if any, significant change. Development that does occur carries a significant cost burden for infrastructure support. This development would most likely occur at existing populated centers and along freeways at exit points. Catellus Development Corporation has proposed to dispose of lands in northeast Imperial County and acquire some public lands in two other small areas, which could see some development.

Over the past several decades significant use of portions of the planning area has been made for linear features which link the California coast with the rest of the country to the East. These features include highways, railroads, and utility lines--pipelines, powerlines, and telecommunications lines. Future new lines are projected at an average of two new lines per established utility corridor. This figure is based upon the demands of an increasing coastal and western desert urban population base, implementation of a national energy policy, and increasing commerce with Mexico. In addition State Highway 95 could be upgraded from two to four lanes and elevated with bridges and culverts. More pump/groundwater storage projects could be proposed as well.

Large solid waste landfills have been proposed and environmentally assessed in the planning area requirements over the last several years. Two of which, Mesquite and Eagle Mountain, have cleared

NEPA and CEQA reviews and could become operational in the next few years (including expansion of rail use and jobs growth). The probability of more landfill proposals in the planning area is low, with these two projects going forward.

### **Minerals**

Expansion of existing, and development of new, gold mines will likely dominate the mineral extraction activities in the region. The economics of gold mining are controlled by many factors and recent world trends may lessen the demand for gold. To the extent that gold continues to be mined, it will likely occur in the Chocolate Mountains-Picacho gold belt area of Imperial County. Mining here would continue to be characterized as large scale, heap-leach type operations involving disseminated gold. Known reserves are estimated to last 10 years at which time mining activities would dramatically taper off.

No other mining for metallic minerals is expected for years, as nearly all known potential sites are in BLM wilderness areas.

Other minerals that could see new, continued, and expanded development are as follows:

- Limestone in the Big Maria, Palen and Chuckwalla Mountains of Riverside County for specialty and chemical products. Nevertheless, adjacent wilderness areas and issues may rule out the latter two sites.
- Gypsum in the Little Maria and Palen-McCoy Mountains for plaster, wallboard, and other products. Nevertheless, development of gypsum in the planning area may be stifled by: (1) the well developed, cheaper sources in the region and Mexico, and (2) lack of nearby manufacturing plants for the raw product.
- Wollastonite in the Big and Little Maria Mountains of Riverside County for porcelain glaze, filler, and whiting agent.
- Calcium chloride from evaporation ditches/ponds on Bristol, Cadiz, and possibly Danby Dry Lake beds at current levels of development. These operations are expected to remain at current levels
- Sodium chloride from evaporation ditches/ponds on Danby Dry Lake at current level of development. This operation is expected to remain at current levels.
- Sand and Gravel from historically used sites should continue and fluctuate with market conditions, highway resurfacing (involving new nearby borrow sites), and growth in nearby urbanizing valleys. Existing sites should meet market demand for the next 10 years, after which new sites may have to be developed.
- Nearby geothermal and oil and gas development is not expected to change and have an effect on land in the planning area.

### **Recreation Actions**

In general, the overall level of recreational use is currently low throughout the planning area except on a site-specific, seasonal basis. For instance, use in developed campgrounds and long-term visitor areas, as well as on lands adjacent to the Imperial Sand Dunes Recreation Area, is often moderate to

high during the cooler months of the year, and low during hot summer months. As distance from concentrated use zones increases, there is generally a concomitant decrease in use. Regarding trends of popular recreation activities in the planning area, use is relatively level, neither significantly increasing nor diminishing. To the degree that nearby urban centers (Coachella, Colorado River, Imperial, and Palo Verde valleys) grow, there could be a general increase in uses in the planning area. Nevertheless off-road travel, resulting in routes proliferation, has not been an issue on public lands away from the edges of urban centers and is not anticipated to become one. Significant new use of BLM wilderness areas is not anticipated.

Use of the two OHV open areas--Rice Valley Dunes and Ford Dry Lake--will continue to be very low. In the case of Rice Valley Dunes, use would not increase even if similar use is restricted in other dunes systems in the California Desert offer too little recreation value and the drive from the Los Angeles and San Diego areas is an additional one to two hours longer than for other areas.

Upland game and deer hunting, largely a local phenomenon that occurs in the fall-winter in microphyll woodland washes, is not expected to increase significantly.

Recreation uses are subject to cyclical fluctuations like other societal phenomena, but a few factors suggest the Sonoran Desert portion of the planning area could become increasingly popular with older Americans. These factors include: general increase in preference for natural, undeveloped settings; an aging population base; increased affluence and desire for comfort when camping (recreation vehicles); and mild and dry winters. Most of these people will "winter" (as many do now) for half-year durations engaging in off-highway vehicle touring, hunting, primitive camping in undeveloped sites, rock-hounding, social, and other recreation activities.

### **Wildfires**

The spread of invasive plants, especially annual grasses, creates an increased potential for wildfires which can result in disastrous ecological change. Historically in the planning area, the occurrence of wildfires has been low. As we monitor the occurrence of invasive plants and find problems, we may advocate and implement one or more of the following measures:

- establish one or more BLM fire stations in the planning area to reduce the suppression response time
- establish seasonal campfire closures
- establish mechanical or chemical control of invasive plants in key areas

### **Livestock Grazing**

Depending on future market conditions, livestock grazing could decline.

### **Military Operations**

During the past fifteen years, a relatively small area (less than 1 percent) of Chocolate Mountain Aerial Gunnery Range (CMAGR) has been used for air to ground combat training and navy seal training. This limited area of impacts is not expected to change.

### **Joshua Tree National Park**

The vast majority of visitors to JTNP focus on the western half of the park (outside the planning area). Therefore, little change is anticipated in the eastern half of the planning area.

### **General Perspective**

The broad perspectives of proposed land use decisions are compared by alternative are contained in Appendix O. Tables in this appendix summarize the size (acres and percentages) of areas of key parameters by alternative.

## **4.1 No Action Alternative**

This major section discusses the environmental consequences of the No Action Alternative in sub-sections for the resource areas identified in Chapter 3. Within each sub-section, issues relevant to that resource are discussed, followed by a summary of impacts for the resource.

### **4.1.1 Air Quality**

Large urban areas such as the greater metropolitan Los Angeles area impact air quality on a regional basis. Air quality in the planning area is affected by air pollutants from urbanized areas of southern California. The planning area and most of southern California is a non-attainment area for particulate matter (PM<sub>10</sub>) and ozone. Although development in the planning area has been low historically and little urban growth is expected in the planning area, air quality in non-attainment areas could continue to be impacted by transport of “urban smog” to remote regions in the desert. Additionally, PM<sub>10</sub> may continue to be a problem in areas affected by surface disturbance from uses such as grazing, recreation and large soil disturbing projects.

#### **From Issue 1: Land Health Standards and Grazing Management Guidelines**

The National Fallback Land Health Standards and Grazing Management Guidelines would maintain and improve healthy soil and vegetation within grazing allotments. This would result in increased vegetation in grazing areas, which leads to reduced dust emissions (PM<sub>10</sub>) and improved air quality.

Dust emissions result from wind erosion of disturbed and dry, unconsolidated soils. Increased vegetation cover would result from implementation of land health standards and guidelines, thereby reducing the amount of soil erosion in grazing allotments. Cattle and sheep grazing allotment currently total 605,454 acres or 10.9 percent of the planning area. Emissions rates from areas outside of grazing allotments would continue at current rates.



### **From Issue 2: Recovery of the Desert Tortoise**

The current level of management on 189,564 acres of designated Areas of Critical Environmental Concern (ACEC) has a slight positive effect on air quality through a few prescriptions designed to reduced surface disturbance (e.g., vegetation restoration, road & wash closures).

Under the No Action Alternative, surface disturbing projects are evaluated on a case-by-case basis without a limit on total surface area disturbance. Potential indirect impacts include; surface disturbance on a larger scale and little incentive to site projects in less sensitive areas.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Impacts to air quality from motorized vehicles primarily occur from utilization of “open” areas and general access along routes of travel. Travel in “open” area disturbs soils by tires of vehicles physically breaking loose sediments. This can result in increased wind erosion of soils and PM<sub>10</sub> concentrations, not only during the process of travel, but after the travel has occurred due to the physical disturbance of soils making in the more readily erodible by wind and water. Vehicle travel also can destroy vegetation along routes of travel, exposing more area to wind and water erosion. Under current management, there are two open areas in the planning area, Ford Dry Lake OHV area (1,134 acres) and Rice Valley OHV area (2,790 acres). In addition there are 4,982 miles of dirt roads and routes of travel in the planning area.

## **Summary of Impacts**

Urban areas such as Los Angeles and San Diego generally lead to regional effects to air quality, particularly from PM<sub>10</sub> and CO emissions. Although development in the planning area has been low historically and little urban growth is expected in the planning area, air quality in non-attainment areas could continue to be impacted by the exportation of “urban” smog to remote regions in the desert. Additionally, PM<sub>10</sub> may continue to be a problem in areas affected by surface disturbance from uses such as grazing, recreation and large soil disturbing projects.

### **4.1.2 Water Quality**

#### **From Issue 1: Standards and Guidelines**

Implementing the National Fallback standards and guidelines would enhance and strengthen present management of grazing activities occurring in the planning area. This change in direction would contribute to minor improvement of water quality. Results from recent rangeland health assessments of Lazy Daisy, Ford Dry Lake, and Rice Valley Allotments found that resource conditions meet these standards. The Chemehuevi Allotment did not meet the riparian/wetland standards due to an infestation of tamarisk and impacts from burros at West Well. Development of prescribed water improvements (water troughs, pipe, and storage tanks) in Lazy Daisy would enhance current conditions by improving distribution of cattle.

There would be improvement in hydrologic function resulting in improved water quality. As uplands and riparian vegetation improve, peak runoff and overland flow would be reduced and increased riparian vegetation would protect and stabilize adjacent soils. There would be an increase in water infiltration through most soils and a decrease in sedimentation. There are no appreciable riparian and wetland areas in Chemehuevi, Ford Dry Lake, and Rice Valley Allotments and improvement in these areas would be negligible.

Current conditions and trends for water quality outside of allotments would continue at current levels.

#### **From Issue 2: Recovery of the Desert Tortoise**

Potential impacts to water resources can result from any activity which adversely affects water quality or availability in the NECO Planing Area. Such activities include livestock grazing, mining, vehicles on roads and trails, burro grazing and surface disturbing land uses.

The current level of management on 189,564 acres of designated ACECs has a slight positive effect on water quality through a few prescriptions designed to improve water quality (e.g., removal of tamarisk, fencing of waters).

Grazing activities, which occur on 605,453 acres, impact water quality by coliform-bacteria contamination. Additionally, water resources are impacted through soil compaction and the reduction of vegetative and litter-cover resulting in reduced infiltration and increased storm water runoff and sedimentation.

#### **From Issue 4: Wild Horses and Burros**

Burro grazing activities occur on 600,00 acres within the planning area and may adversely impact water quality through coliform bacteria contamination.

Springs, tanajas, unfenced drinkers and the Colorado River tend to concentrate wild burros, as well as other wildlife dependent upon them, during the hot, dry periods and during dry winters. As the animals congregate around these waters, fecal matter tends to accumulate, which could affect water quality through fecal coliform contamination. The China Lake Naval Weapons Center Environmental Impact Statement, Feral Burro Management Program (1981), references water quality studies conducted by the Naval Weapons Center which fecal coliform levels were measured at various springs, and concluded that burro feces attributed to increased levels of fecal coliform.

#### **Summary of Impacts**

Implementation of National Fallback standards and guidelines for rangelands along with state and regional initiatives to protect, enhance, and maintain ecosystem health, would result in improved rangeland health. There will be less soil erosion, improved vegetative diversity, improved livestock forage, improved upland and riparian habitats, and improved water quality.

Increased vegetative cover will improve stabilized aquatic systems, resulting in longer flowing streams, better water quality, and more protection from erosion and flooding. These improved areas and systems will better support wildlife, livestock municipal water supplies, and recreations uses.

### 4.1.3 Soil Quality

#### **From Issue 1: Standards and Guidelines**

Under the No Action Alternative, land health standards apply only to grazing allotments. Based on rangeland health assessments of the Lazy Daisy, Chemehuevi, Rice Valley, and Ford Dry Lake Allotments, all grazing allotments met the soil standard (BLM, 1999). The relative condition of soils outside of grazing allotments is unknown. All of the plant communities in the planning area are represented in the four allotments (see Map 3-3, Appendix A). Soil conditions in the remaining portion of the planning area should mimic soil conditions within allotments if all other factors are similar.

A team of field specialists reviewed many aspects of soil characteristics while on the allotments. This team collected data on wind and water movement of soils, retention of the surface vegetative litter, accumulation of surface rock, formation of pedestals, development of rills, flow patterns of surface water, formation of gullies, and presence of biological crusts. In the future, each allotment will be reviewed, at a prescribed time, to ascertain the status of rangelands.

Attainment of the soil standard is an affirmation of complex natural processes are occurring within a large landscape. Implementation of the standard would increase persistent and non persistent vegetative litter in upland soils. The additional litter increases opportunities for development of a microclimate that aid in germination of annuals during rainfall. This improvement would be slow and the results would be complex. Surface litter plays a complex role in soil health. It recycles plant and animal nutrients, reduces raindrop impact, traps mobilized sediment, insulates and moderates soil temperature, conserves soil moisture, and is involved in the development of soil structure. The positive changes expected to occur to soil include decreased soil crusting, reduced erosion, increased biological activity, increased permeability, increased root mass, increased fertility, increased soil cover, and increased soil moisture. The result would be increases in plant species diversity. Additional plants further stabilize soils.

#### **From Issue 2: Recovery of the Desert Tortoise**

For the No Action Alternative, mitigation measures listed in current biological opinions (BO) for cattle and sheep grazing in desert tortoise-habitat would direct future management. Under the conditions of BO, cattle grazing would occur in both critical and non-critical desert tortoise habitat, while sheep grazing would occur only in non-critical habitat. Temporary, non-renewable and ephemeral forage authorizations are limited in amount and period. The number and type of range improvements and designated period to construct range improvements are detailed in BO for each allotment. Where feasible, bedding and water sites are to occur in previously disturbed sites. Sheep are to graze across an area only once and sheep are to graze in a scattered pattern.

Development of range improvements is provided by the current biological opinion, allotment management plans, California Desert Conservation Area Plan, and regulations. Proposed construction projects would affect soils by compaction and disturb the soil surface during installation of fence, springs, pipe, wells, and cattle guard. Additional compaction and disturbance of soil would occur when hauling equipment, materials, and personnel to work sites. Soil would be compacted and vegetation trampled by vehicles being parked adjacent to access road and work sites or when vehicles are turned around. Depending on the type of soil, tire and human tracks would be evident from construction activities.

Soil compaction and disturbance would occur during unloading of materials and digging the cattle guard pit prior to installing concrete base and metal grid. More than 90 percent of the soil compaction and disturbance from well drilling operations would occur during setup of a drill site. Plastic water pipe is glued together and dropped into a shallow ditch dug with a motor grader. After sufficient time to cure pipe glue and to pressure-test the pipe, the grader pushes the berm of soil into the ditch. This method of pipe burial causes soil disturbance that is mitigated by positioning the pipeline in the road to avoid habitat impacts.

The addition of new improvements would disrupt current usage of cattle trails and additional trails would be developed with recurring passage of cattle within a one-year period. Compaction of soil would occur during the establishment of a new trail. Assuming cattle use trails equally, the addition of new trails would be offset by the loss or reduction of use of previously used trails.

All projects except for fences would avoid soil disturbance of desert tortoise habitat by utilizing previously disturbed sites or existing routes of travel with adjacent disturbed sites. Approximately two acres of soil would be disturbed and compacted during construction of fence. Soil compaction and disturbance would occur when vehicles travel along the proposed fence route to distribute fence materials. Perennial vegetation would be trampled during distribution of fence materials and construction of the fence. Nevertheless, this type of disturbance does not remove the plants from the soil, and given sufficient time vegetation would return.

Installation of "tortoise fencing" occur in desert tortoise habitat along high priority areas of existing roads or highways that are expanded or realigned. A tortoise fence is a barbed wire fence with wire cloth attached to the lower portion of the fence that is buried in a ditch parallel to the fence to preclude tortoises (works well on other reptiles) from crawling over or digging under the fence and walking onto the road. Tortoise fencing has been installed on case-by-case basis for several years. Installation of tortoise fence causes surface and subsurface soil disturbance, compaction along the fence, and soil movement. These impacts to soil quality are analyzed in environmental documents for the road construction project.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

For the No Action Alternative, mitigation measures listed in current biological opinions (BO) for sheep grazing in desert tortoise habitat would direct future management. All grazing use and resulting impacts would occur in non-critical desert tortoise habitat. Where feasible, bedding and

water sites are to occur in previously disturbed sites and sheep are to graze across an area only once and sheep are to graze through area in a scattered pattern.

Proposals for bighorn sheep and deer water developments would be considered on a case-by-case basis. The artificial water source disturbs an area of approximately 1,100 square feet with digging to place a pipeline, water storage tank, fence, and diversion dam. Most facilities are positioned below ground so the project is hidden from the casual observer and upon completion of the water development all surface disturbance would be brushed smooth. Impacts to soil quality would occur from vehicle and foot traffic, digging holes and trench with backhoe, and blending soil to the surrounding gradient. This development causes soil disturbance, soil compaction, and soil movement. Impacts are expected to occur on less than half an acre per year.

#### **From Issue 4: Wild Horse and Burros**

The Piute Mountain, Chemehuevi, and Chocolate-Mule herd areas contain burros. The Arizona-BLM managed Havasu and Cibola-Trigo herd areas are adjacent to Chemehuevi and Chocolate-Mule herd areas, respectively. Under this alternative wild burros use would continue in these herd areas as established in the CDCA Plan. However, populations of burros are in excess of the appropriate management level (AML) in Piute Mountains and Chemehuevi. Burro population in Piute Mountains is estimated at 37, with the AML at 0 burros within a use area of 39,781 acres. In the Chemehuevi the burro population is estimated at 598, and the AML is 150 burros within a use area of 406,894 acres.

Perennial shrubs and ephemeral forbs and grasses are the basic forage components for burros. Burros spend about equal time foraging for shrubs and for ephemeral growth. There has been limited growth of ephemerals the past several years. Therefore, burros utilized the shrubs more than ephemeral growth, especially in those herd areas with excess animals.

Consumption of perennials in excess of annual production depletes that plant's reserves and if continued long enough the plant would perish. Excess consumption of ephemeral plants would reduce reproductive capabilities of germinating plants if forbs and grasses are not allowed to produce seed. Soil would be lost through wind and water erosion with the loss of plants and lack of plant recruitment. Recycling of vegetative matter into the soil surface would be limited or cease. Trailing would become visibly pronounced as burros become hungry enough to actively search for forage. As the herd increases in size, singles or groups of animals, move into areas not favored for grazing. Burros become nuisance animals at this point when they invade areas of human habitation as they seek out lawns, gardens, and golf courses.

Burro trails occur throughout the Herd Management Areas (HMAs) and are concentrated near water locations. Trails are typically void of vegetation and, depending on type of soil surface (sandy loam, gravel, cobbles and rock), may have exposed soil substrate. The majority of the trails would have a width, approximately 14 inches. Upland water holes are typically associated with exposed or very shallow bedrock in dry washes. Desert washes are generally sandy. Sandy soils are not susceptible to compaction. Even under pristine conditions, they are susceptible to erosional forces. Upland soils contain gravels and cobbles preventing soil loss and armor against compaction.

In some areas along the shore line of the Colorado River, where burros have continuously used the same trails over the years, soil loss can range from 1 to 6 inches below the soil surface, dependent upon the slope of the bank (i.e., confluences of Julian Wash (Cibola-Trigo HMA) and Trampus Wash (Havasú HMA)). These trails have been subject to periodic flood events, in which the stream bank stability has been maintained. At Arrowweed Spring, burros have dug water holes where the water table is high enough for them to access water. These holes are located in the wash along a sandy loam shelf, which has shown slight surface erosion after a flood event. The level of sedimentary loss has not been measured.

Dust wallows (dust baths) created by burros are evident throughout the HMAs as areas cleared of gravel and cobbles on flat areas. An adult animal may create a dust bath measuring an area of 6 feet by 6 feet. Field observations have not recorded any areas where dust baths have contributed to erosion.

Field monitoring data (Rangeland Health Determination for the Chemehuevi Valley Allotment, 1999), utilization studies, or observations (field notes) have not recorded areas of surface or rill erosion due to the reduction of vegetation or litter due to burro grazing.

#### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designation**

Off-road vehicle use, both competitive and casual, has potential to impact the soil resource, particularly if the activity occurs within areas with highly erodible soils. Impacts to soil are difficult to determine with casual observation. Vehicle and foot traffic are the primary sources of soil surface disturbance and compaction. Soils that have been disturbed by vehicles are less resistant to wind erosion than undisturbed soils (Gillette et al 1979). Studies at Dove Springs Canyon in the western Mojave Desert show that off-road usage by vehicles causes accelerated erosion and increased sediment yields (Snyder et al 1976).

Compaction of soil by vehicles directly affects continuation and establishment of plants (Webb *et al.* 1978, Eckert *et al.* 1977., Davidson and Fox 1974, Duck 1978). The lack of vegetation along all active roads is obvious. Compaction and disturbance to soil and plants lessen as you move away from these areas of concentrated and continual use. Off-road vehicles in dune systems have removed surface vegetation, resulting in sand dune destabilization and the beginnings of sand dune migration (Barry *et al.* 1977). However, some dunes within specific habitats were unaffected by off-road vehicle use with low tire pressure (Niedorada 1975)

Under the No Action Alternative there are 4,743 miles of unpaved routes available for vehicle use. Assuming the average route is 12 feet wide (Ira Long, BLM, pers. com.), there are about 6,899 acres set-aside for vehicle activity on unpaved routes in the planning area. Most routes would accommodate most sizes of vehicles. Impacts to soil quality would vary by soil type and amount of vehicle use. The widths of some routes do expand and contract based on route condition, amount of vehicle use, and climatic conditions. These impacts as shown above are soil compaction, accelerated wind and water erosion, increased off-site sediment yield, and soil surface disturbance.

## Summary of Impacts

Implementation of the National Fallback standards and guidelines, along with the many other state and regional initiatives to protect, enhance, and maintain ecosystem health, will improve rangeland health. There will be less soil erosion, improved vegetative diversity, improved livestock forage, improved upland and riparian habitats, and improved water quality.

Specifically, improvements to the soils and uplands areas will occur slowly over decades and will affect not only upland systems components such as soil, water, vegetation, and wildlife, but also downstream components such as water quality and riparian habitat. Soil conditions, primarily soil structure, influence the movement of air, water, roots, nutrients, and soil organisms. These soil conditions strongly influence plant growth, water infiltration and runoff, and erosion.

### 4.1.4 Biological Resources

The discussion of the environmental consequences of the No Action Alternative for biological resources has been subdivided into Wildlife Management and Vegetation Management.

#### 4.1.4.1 Wildlife Management

##### **From Issue 1: Standards and Guidelines**

Ecosystem processes and natural communities would improve under the National Fallback Standards and Grazing Guidelines. Specifically, plant cover, biomass, and vigor would increase as management actions are taken to attain the standards. To the extent that the native species standard is considered in meeting rangeland health standards, livestock grazing practices would be designed to promote the conservation and recovery of listed species.

To the extent that standards are not being attained currently (see section 4.1.6 Livestock Grazing), changes in management would result in increases in plant vigor, biomass, and seed production, thereby providing increased food for animal communities. Increases in plant cover and litter would provide increased shelter for animals against weather and predation. These effects may be most direct for invertebrates. Increases in plant diversity, especially in the shrub and tree layers would increase animal diversity by providing increased plant community structure. Improvements in structure, diversity, and size of riparian habitats would be especially effective in increasing animal diversity and sustaining migratory bird populations.

Since native animals, especially insects have evolved with native plant communities, reductions in noxious weeds, such as tamarisk in riparian habitat, and prevention of the introduction and spread of new noxious weeds would aid in increasing or maintaining animal diversity and abundance.

##### **From Issue 2: Recovery of the Desert Tortoise**

**Desert Tortoise:** The following description of impacts is not exhaustive, but highlights the more significant impacts. For a more complete description of activities affecting desert tortoise under the

No Action Alternative, see *Current Desert Tortoise Management Situation in Northern and Eastern Colorado Desert planning area* (Crowe and Foreman 1997).

Overall BLM policy for management of desert tortoise habitat is set forth in *Desert Tortoise Habitat Management on the Public Lands: A Rangelwide Plan*. It was signed in 1988. BLM habitat categories (I, II, and III) are established in this document. The *California Statewide Desert Tortoise Management Policy* (1992) established more specific tortoise habitat management policies for California and designated the boundaries of desert tortoise habitat Category I and II.

More than a million acres of critical habitat (47 percent) in federal ownership are withdrawn from various uses for special purposes (Table 4-1). The withdrawals for CMAGR, JTNP, and wilderness greatly restrict vehicle access and human development. This minimizes habitat disturbances in these areas and aids in stabilizing populations over the long-term. Additional tortoise habitat not designated as critical habitat is also in these withdrawals; especially where contiguous with critical habitat, these areas add to the total tortoise habitat overall receiving a high level of protection. The other withdrawals primarily restrict disposal of the lands from federal ownership.

**Table 4-1. Federal Lands in Critical Habitat that are Withdrawn from Multiple-use**  
(The portion of JTNP outside of critical habitat is also shown.)

Withdrawal	Acres in critical habitat	Percent of critical habitat	Percent of planning area
CMAGR	187,988	8	3
JTNP inside critical habitat <sup>a</sup>	161,691	7	3
JTNP outside critical habitat <sup>a</sup>	283,760	12	5
BLM wilderness	434,233	19	8
PLO 5224 (BLM)	1,570	<1	<1
Classification and Multiple Use Act (BLM)	4,283	<1	<1
BLM Acquired Lands (non-wilderness)	23,513	1	<1
Total in NECO Planning Area	1,097,038	47	20

<sup>a</sup> In addition to the national park withdrawal, most of Joshua Tree National Park is also designated wilderness.

In addition, the BLM has several Areas of Critical Environmental Concern (ACECs) (Map 2-1 Appendix A) that are entirely within desert tortoise critical habitat. However, only the Chuckwalla Bench ACEC was designated for protection of rich natural communities and tortoise habitat. It includes about 101,674 acres of tortoise habitat. It established priorities for land acquisition (much accomplished), designated routes of travel, developed interpretive signing and brochure, and limited



camping to within 100 feet of open routes. The BLM also has six habitat management plans (Map 2-1 Appendix A). Nevertheless, only the Milpitas Wash HMP contains measures addressing desert tortoise habitat needs. To the extent that these plans have been implemented, protection of tortoise habitat would be maintained.

Most project development that disturbs tortoise habitat would occur on private lands or on BLM non-wilderness lands.

All alternatives would include specific design features to minimize potential effects (See Appendix D for desert tortoise mitigation measures) on desert tortoise and desert tortoise habitat. Most mitigation measures have not been tested for effectiveness on an individual basis, but they have been developed by expert wildlife biologists based on the behavior of the tortoise. Many projects involving desert tortoise have had biological monitors, and they have commonly reported verbally to BLM staff on their observations regarding the effectiveness of various measures. For larger projects, end of project reports address effectiveness of mitigation measures. Mitigation measures are modified and refined based on these reports. In 1996, Circle Mountain Biological Consultants (CMBC 1996) examined mitigation measures (i.e., terms and conditions) in 234 federal biological opinions from USFWS and contacted 145 individuals, including biological monitors. CMBC concluded that implementation of terms and conditions for projects had significantly reduced the number of tortoises killed relative to the numbers authorized by USFWS in the biological opinions. They concluded that awareness programs, defined work zones, on-site monitors, and tortoise-proof project fencing gave the best protection for tortoises.

About 328,000 acres (16 percent) of desert tortoise critical habitat lie within utility corridors. Strong mitigation measures, including compensation, would be applied to utility construction and maintenance projects. Nevertheless, even after restoration efforts are made, there would be a residual habitat disturbance resulting in loss of food and cover for tortoises. For most utility lines there would be a service road open to public use. New pipeline construction would create the largest and longest lasting disturbances because of they turn over so much soil. Utilities, such as pipelines, transmission lines, and fiber-optic cables, would not significantly fragment tortoise populations, as tortoises can move freely over level, restored surfaces even if denuded of vegetation.

The Colorado River Aqueduct (Map 2-1 Appendix A) is operated by the Metropolitan Water District. The major impacts of the canal would be to (1) impede the movement of tortoises, (2) divert surface water flow through openings at syphons using length dike systems, (3) and flood "water-wasting zones" (open desert areas owned by Metropolitan Water District where water is diverted in the event there is a need to drain the Canal). The latter two impacts would modify the vegetation and potentially reduce tortoise populations.

The effects of grazing on desert tortoise and on desert tortoise critical habitat in all four of the allotments has been reviewed by USFWS through formal consultation according to procedures set forth in the Endangered Species Act. Grazing in these allotments has special stipulations to protect desert tortoise. These protective stipulations would reduce impacts to tortoise.

Avery (1996) and Boarman (1999) reviewed the literature on the effects of livestock grazing on desert tortoise.

Potentially, cattle can step on tortoises and injure or kill them. The likelihood of this is greater for hatchling or juvenile tortoises that are small and presumably difficult for cattle to see. Similarly, cattle can potentially cave in burrows, thereby disturbing essential thermal cover or even entrapping a tortoise within. Morafka (pers. comm.) believes that neonate (<1 year old) tortoises are especially susceptible to entrapment or crushing in burrows because they use the shallow, exposed burrows of rodents. Although trampling of tortoises and burrows is alleged in many papers, few report direct observation of it. An exception is Avery and Neibergs (1997) who, comparing inside and outside of an enclosure, found significantly more damaged burrows and found that tortoises spent more nights in the open outside of a cattle grazing enclosure. Avery (1998) reported finding a live tortoise entrapped in a collapsed burrow, potentially leading to its death.

Numerous studies have shown an overlap in the diet of cattle and tortoises (Coombs 1979, Sheppard 1981, Medica *et al.* 1982, Avery and Neibergs 1997), and many others have documented food of cattle (e.g., Burkhardt and Chamberlain 1982) or of desert tortoise (e.g., Woodbury and Hardy 1948, Jennings 1993, Nagy and Medica 1986, Esque 1994). Avery (1998) found that competition for forage (mostly annual grasses and forbs and perennial grasses) occurs in early spring and late spring of years of low rainfall and annual plant production. He found that tortoise foraging (i.e., behavior and food selection) was altered in areas where cattle were present. Tracy *et al.* (1995) found that in years of low rainfall, and hence low plant production, cattle grazing may reduce tortoise forage sufficiently to cause tortoises to lay fewer eggs, thereby reducing reproductive potential.

Cattle grazing can reduce plant cover and density (Blydenstein 1957, Waser and Price 1981, Fusco *et al.* 1995) and alter plant species composition (Avery and Neibergs 1997), at least in the short-term, resulting in increased exposure of tortoises to predation and weather. Plant cover is used by tortoises for thermoregulation (i.e., shade) and predator avoidance, especially by hatchling and juvenile tortoises. Durfee (1988) found more bare ground, a greater proportion of introduced plants, and fewer perennial grasses in grazed areas compared to areas within highway fences. However, Avery and Neibergs (1997) found that the differences are more complex with some species (e.g., creosotebush) being larger and others (e.g., Galleta grass) being smaller in grazed areas. They found that total plant cover was not different inside and outside of an enclosure in a lightly grazed pasture. In a review of the literature, Boarman (1999) found that although there have been studies on the effects of grazing on soil temperature, chemistry, infiltration rates, and nutrients, they are difficult to assess in allotments where grazing intensity is light. Compaction of soils occurs even in lightly grazed areas (Avery and Neibergs 1997), but is most pronounced around springs, water troughs, corrals, and salt licks; compaction would limit tortoises selection of burrowing sites.

The Chemehuevi Allotment includes a substantial amount of the desert tortoise critical habitat. Nevertheless, the allotment has only a few head of cattle at most (about 15), and it has had none since 1989 (see Table 3- 7 grazing). The one developed livestock water is not in critical habitat. Based on this history of grazing use, the effects of grazing described above would not be great.

The Lazy Daisy Cattle Allotment covers 260,025 acres (11 percent) of critical habitat, all within the Chemehuevi Critical Habitat Unit. Grazing use of this allotment has been light to moderate for the past 15 years (Table 3-7 grazing). Although cattle are in the allotment year-round, the general pattern of use is that cattle forage in tortoise habitat in Ward Valley and Clipper Valley primarily in the winter and spring; the cattle move into the cooler Old Woman Mountains in the summer. There are currently nine watering sites in tortoise critical habitat, and two new watering sites were approved in the biological opinion for this allotment. Hence, competition for forage would occur in this allotment in the spring of years of low annual plant forage (Avery 1998) when cattle would eat even the small amount of annual plant forage available (Avery 1998). Since the Lazy Daisy Allotment is an ephemeral/perennial allotment, the lessee can apply for special authorization to graze ephemeral (annual plant) forage in years when forage exceeds 350 pounds/acre.

Highway traffic has been, and would continue to be, an important cause of mortality for the desert tortoise (Berry and Nicholson 1984). Both Nicholson (1978) and LaRue (1992) found that populations were suppressed along paved highways and that tortoise sign increased with distance from the highway. Recognizably, an individual dirt road or way carries only a fraction of the traffic of a highway, and vehicle speeds are lower. However, the unpaved route network is much larger and includes extensive wash systems in some areas. On compacted roads, water accumulates in depressions, and tortoises are often seen drinking from them during the day. This makes them more vulnerable to death or injury from run-over after rain.

Roads would also provide access to remote areas for illegal collection and vandalism of tortoises (Nicholson 1978, Garland and Bradley 1984, Boarman and Sazaki 1996, Jennings 1991) and result in other indirect effects. On his plots alongside highways, LaRue (1992) recorded "detectable disturbances." In this category he found evidence of (1) cross-country travel by vehicles; (2) dogs; (3) humans on foot; (4) trash dumping and litter; (5) shooting [rifle and shotgun shells]; and (6) fires. These "detectable disturbances" can increase, respectively, (1) crushing of tortoises and burrows and loss of vegetation used for food and cover; (2) predation on and injury to tortoises; (3) collecting of tortoises; (4) raven numbers and predation on tortoises; (5) direct mortality of tortoises from shooting; and (6) direct mortality of tortoises from fire, destruction of tortoise forage and cover, and promotion of less nutritious weedy plants. Boarman (1999) reviewed some literature on the impacts of roads on tortoises.

The Border Patrol conducts a large illegal alien interdiction program in the southern half of the planning area. The two major alien migration arteries are the Southern Pacific Railroad and Highway 78 corridors. Most agents work in vehicles primarily on highways and major service roads, but occasionally they give chase off these roads onto smaller desert roads, in washes, and cross-country. Some alien rescues require off-road travel as well. Activities on roads and in washes, especially high speed driving, as well as cross-country travel would result in direct mortality of tortoises. Cross-country travel would also result in reducing cover vegetation (i.e., small shrubs) and annual plant forage and in collapsing of burrows.

Mining exploration and development activities would remove habitat and result in direct mortality from equipment and vehicles. The BLM has consulted with the USFWS on small (<10 acres) mining operations; a programmatic biological opinion provides standard stipulations that would provide

some protection for tortoise and their habitat. The map of high mineral development potential (Map 4-2 Appendix A) shows that only sand and gravel has a significant occurrence and potential for development within tortoise critical habitat (about 25,000 acres).

Various illegal activities occur now and would likely continue to occur despite the best efforts of rangers and visitor services staff to provide law enforcement and public education. Among the illegal activities that would affect desert tortoise are the following:

- collecting of tortoises for pets or other uses
- shooting of tortoises
- collecting of vegetation, especially cactus and ocotillo
- dumping of refuse, car bodies, and hazardous waste
- salvaging of scrap metal from bombing
- methamphetamine manufacturing
- illegal immigration

Except for shooting, the amount and significance of these relative to other impacts on tortoises is not known. Collecting of tortoises has been identified as significant in the western Mojave, but human visitation is considerably less in the NECO planning area. Berry (1986) examined carcasses collected from permanent tortoise study plots and reported on the incidence of gunshot deaths. She found that 1 of 35 (3 percent) on the Chemehuevi Valley plot and 2 of 110 (2 percent) on the Chuckwalla Bench plot had been killed by gunshot. In the West Mojave the proportion of gunshot deaths ranged from 14 to 29 percent of animals examined on five plots. Berry attributed the higher rates of gunshot mortality in the western Mojave to “higher numbers of human visitors, greater vehicle access [i.e., greater density of routes], and closer proximity to urban centers.” Because it takes almost 20 years to reach breeding age, any removal of adult tortoises from the population, either by collection or gunshot, would reduce potential viability of the population.

Predation by the common raven (*Corvus corax*) is intense on younger age classes of the desert tortoise. Common ravens are found in greatest concentrations in and near agricultural and urbanized areas (Knight *et al.* 1993). Particularly large concentrations are found near Cadiz where they make heavy use of the grape and citrus orchards (Knight 1994). Away from this area, ravens are most abundant near landfills and along major highways where roadkills and trash augment food supplies (FaunaWest Consultants 1990). Although desert tortoises, particularly eggs, hatchlings, juveniles, are eaten by several species, such as coyotes, kit foxes, skunks, badgers, and roadrunners, raven predation is regarded as highly elevated due to augmentation of food by human activities.

Between 1968 and 1992, raven populations in the Sonoran Desert increased more than 1400 percent (Boarman and Berry 1995). Since 1991, evidence of excessive raven predation on juvenile and hatchling tortoises has been found at eight sites--four in Ward Valley, two in Chemehuevi Valley, one in Shaver Valley, and one in northern Chuckwalla Bench (Boarman, unpubl. data). As part of a two-year experimental raven control program, eight ravens with three or more tortoise shells beneath their nest were shot. Two each were in Ward Valley, Chemehuevi Valley, Shaver Valley, and Chuckwalla Bench. Since there is currently no active raven management program in the NECO

planning area, under the No Action Alternative current levels of predation would continue, thereby reducing recruitment of young tortoises.

Since ravens may eat human refuse, the proposed regional landfills at Eagle Mountain near Desert Center and Mesquite near Glamis, would have raven management programs. Existing local solid waste landfills at Indio Hills, Blythe, Desert Center, and Picacho would continue current methods to limit raven foraging. Illegal dumping sites identified at Essex, Vidal, Vidal Junction (two sites), Amboy, and Chambliss would be permanently closed under this alternative.

Upper respiratory tract disease and various shell diseases are known to occur in tortoises in the planning area. Population estimates at permanent study plots in Chemehuevi Valley and on Chuckwalla Bench have shown declines as high as 90 percent over the past decade. Shell diseases are implicated as a major factor. Upper respiratory tract disease has contributed to high mortality in the western Mojave Desert; it has recently been identified as a cause of high mortality immediately north of the planning area. The methods of spread of these diseases and causes for shell diseases have not yet been identified, but unabated spread would presumably result in large scale declines of 90 percent or more throughout the planning area.

Repeated fires are known to decrease the perennial plant cover and to aid some invasive annual plants. In turn, where they gain widespread propagation, these invasive plants would provide fuel to carry flames, potentially resulting in larger fires in the future. Surface disturbing activities and vehicle use that promotes the introduction of invasive plants would increase the likelihood of larger fires in the future. As perennial plant cover is reduced, tortoises would have increased exposure to weather and predators. As invasive plants out-compete native plants and reduce populations of native forage species, populations of tortoises would decline.

**Other Special Status Animals:** The diets of other special status animals would benefit from the policies established in the rangewide and statewide tortoise policies that limit surface disturbing activities or require compensation for disturbance of habitat. In consultation with the USFWS and CDFG, the BLM and project proponents developed stipulations to mitigate the effects of projects on desert tortoise or its habitat. The resulting project mitigation measures would reduce mortality and habitat loss for a variety of other special status animals.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Bighorn Sheep:** Table 3-4 Chapter 3 shows the acres and percent of the “occupied range,” “unoccupied former range,” and “movement corridor” (see Map 2-18 Appendix A) in JTNP, CMAGR, and BLM wilderness. A total of 75 percent of the occupied range, 48 percent of the unoccupied former range, and 40 percent of the movement corridors are in these protected areas. Although these areas were not designated specifically for protection of bighorn sheep, all three would continue to restrict activities to a low -level of human disturbance and habitat modification.

Five habitat management plans developed for management of bighorn sheep cover 548,000 acres or one tenth of the planning area. Although, these plans do not and cannot limit uses or the impacts

from uses, they would continue to provide pro-active management programs to enhance bighorn populations.

Cattle potentially negatively affect bighorn sheep by: (1) competing for forage, (2) altering the vegetation composition, (3) introducing diseases, (4) fouling or disrupting water sources, and/or (5) causing changes in behavior or habitat use. A variety of papers (Bodie and Hicks 1980, Dodd and Brady 1986, Cunningham and Ohmart 1986, Ganskopp and Vavra 1987, Ganskopp 1983, King and Workman 1984, Kornet 1978, McCullough *et al.* 1980, McQuivey 1978, Seegmiller and Ohmart 1981, Wehausen and Hansen 1986, Wilson 1968, and Wylie and Bates 1979) dealing with livestock impacts have given mixed results; McCarty and Bailey (1994) summarize what is known on the subject.

Wehausen and Hansen (1986), studied competition between bighorn sheep and cattle (Lazy Daisy Allotment) specifically in the Old Woman Mountains (and other nearby ranges). They found that there was a spatial separation of bighorn sheep and cattle. Bighorn sheep, especially ewes, used mostly water sources not used by cattle. Cattle reportedly trampled and over grazed vegetation around waters, fouled the water with mud, feces, and urine, and dominated the site through long-term attendance. However, they concluded that habitat separation was most likely due to differences in habitat preferences between bighorn sheep and cattle rather than avoidance of cattle by bighorn. They did conclude that cattle were likely a significant reservoir for diseases and that bighorn sheep demography (population age and sex structure) was likely affected; nevertheless the bighorn sheep population appeared stable. They recommended that the boundaries of the allotment be modified to remove overlap, as indicated in the CDCA Plan.

Citing Wehausen (1988) and Clark *et al.* (1985), Bleich *et al.* (1990) asserted that the Old Woman Mountains deme had been “depressed during the 1980s, possibly because of a high prevalence of cattle disease.” Bleich *et al.* (1990) stated that augmentation of the Iron Mountains deme was not attempted because diseased bighorn sheep occasionally move south into the Iron Mountains. They emphasized the hazard of transmission of disease from cattle to bighorn sheep in movement corridors, also. Jessup (1985) asserted that cattle may be the source of most diseases of bighorn sheep; he concluded that “at present, the best management strategy is to maintain bighorn herds at optimal nutritional planes, at or below carrying capacity and as widely separated as possible from domestic livestock.”

In his follow-up studies, Wehausen (1988, 1990) compared bighorn disease epidemiology and bighorn demography between the Old Woman Mountains and other nearby demes. Wehausen (1988) found that cattle disease in the Old Woman Mountains had its greatest effect in excessive lamb mortality which could lead to long term population declines. He found that population declines were broken during droughts when populations of gnats, the transmission vectors for bluetongue and epizootic hemorrhagic disease, were low. He believed that the Old Woman Mountains deme would be much larger without grazing. He also found an instance in the Old Woman Mountains where cattle so severely degraded a natural spring that bighorn use was terminated (Wehausen 1990).

Table 4-2 shows the acres and percent of the “occupied range,” “unoccupied former range,” and “movement corridor” in the four livestock grazing allotments (Map 2-5 Appendix A). Under the No

Action Alternative, the adverse effects described above would continue on the acreages shown below. These impacts would be greatest on the Old Woman Mountains bighorn deme.

**Table 4-2. Bighorn Sheep Use Areas in Livestock Grazing Allotments in the NECO Planning Area, in acres and (percent)**

Bighorn Sheep Use Categories	Lazy Daisy Cattle	Chemehuevi Cattle	Rice Valley Sheep	Ford Dry Lake Sheep
Occupied Range	125,644 (7)	2,643 (<1)		
Unoccupied Former Range			195 (<1)	
Movement Corridor	105,438 (18)	61,942 (10)		

The existing distribution of natural springs, seeps, and tenejas together with constructed watering harvesting and drinking facilities (termed “guzzlers”), is not sufficient to maintain existing stable demes and reestablish historic demes (Vern Bleich, pers. comm.; Nancy Andrew, pers. Comm.). Because bighorn foraging range is limited to an area of about 3 miles from water (depending on the age, sex, and season), only about 48 percent of the forage in bighorn sheep range is available for use. In the region south of Interstate Highway 10, the proportion is only 35 percent. Under the current distribution of water sources, the goals and objectives stated in Section 2.3 would not be attained.

To reestablish lost demes and increase metapopulation viability, demes have been reestablished in the Whipple Mountains and have been augmented in the Sheephole Mountains and Chuckwalla Mountains. Lost demes remain in the West Riverside Mountains, Riverside Mountains, Big Maria Mountains, Little Maria Mountains, McCoy Mountains, Mule Mountains, Palo Verde Mountains, and Cargo Muchacho Mountains (see Map 2-17 Appendix A). Bleich *et al.* (1990) considered reestablishment of lost demes to be an important and cost-effective tool in maintaining genetic variation and minimum viable population size. Under the current distribution of water sources and presence of domestic sheep grazing in the Ford Dry Lake and Rice Valley Allotments, these demes could not be reestablished.

CDFG has conducted extensive inventory and monitoring surveys for bighorn sheep demes for several decades. CDFG has also conducted or sponsored bighorn sheep research on a variety of topics (e.g., Andrew 1994; Berbach 1987; Bleich 1993; Wehausen and Hansen 1986; Wehausen 1988, 1990; Torres 1994).

Military aircraft activities within CMAGR potentially disturb bighorn sheep and disrupt activities. Weisenberger *et al.* (1996) found that bighorn sheep responded to aircraft overflights with increased heart rates and altered behavior; however, animal response decreased with increased exposure. It is likely that bighorn sheep around CMAGR have habituated to the aircraft activity and avoid target areas.

**Other Special Status Animals:** The numerous special status animals vary in their respective sensitivity to the complex of impacts occurring. The following description of impacts is not

exhaustive, but rather is intended to highlight the more significant impacts based on current and projected levels of human activity.

Table N-4 Appendix N shows the acres and percent of the range of each special status animal that is in JTNP, CMAGR, and BLM wilderness. Although these areas were not designated specifically for protection of special status species, they would continue to restrict activities to a low level of human disturbance and habitat modification, thereby benefitting various special status species and their habitats. Most of the special status species have 25-50 percent of their range in federal lands. Notably, pocketed free-tailed bat and western mastiff bat have more than 70 percent of their ranges in these areas, while Gila woodpecker, yellow warbler, flat-tailed horned lizard, and mountain plover have little to none of their range in these areas. In addition, special status animals presumably would continue to benefit from reduced surface disturbing activities and other management actions and protective measures applied by BLM to desert tortoise critical habitat (Map 3-5 Appendix A) and BLM designated Category I and Category II habitat (Map 2-3 Appendix A).

Corn Springs ACEC (2,500 acres), Chuckwalla Valley Dune Thicket ACEC (2,300 acres), and Chuckwalla Bench ACEC (103,000 acres) have been developed for protection of special habitats; some of these include habitat used by special status animals. ACEC plans have been implemented for each of these areas. In addition, the Milpitas Wash Habitat Management Plan (180,000 acres) was developed in 1985; it includes habitat for desert tortoise, burro deer, Couch's spadefoot toad, and several special status birds. Objectives and actions in these plans target some special status species and would reduce surface disturbance and improve habitats (e.g., riparian habitats by tamarisk removal) within the respective areas.

Table N-5 Appendix N shows the acres and percent of the ranges of each special status animals within utility corridors. These figures include the entire corridor length and width, even though the amount actually occupied by facilities is much less. Habitat disturbance from utility maintenance and future new construction projects would disturb habitat and populations of special status species. Most of this impact would be temporary, but recurring.

Table N-5 Appendix N shows that 25 of 29 special status animals have more than 10 percent of their range within a utility corridor and seven species have more than 20 percent. Although the flat-tailed horned lizard has 73 percent of its range in a utility corridor, the actual amount of acreage in the planning area for that species is less than a few percent of its total range, and the acreage is not in any of five designated "Management Areas" for that species. The impacts of utility presence and maintenance and construction would vary greatly based upon location, type, design, operation, and maintenance. All types would create some habitat loss, with pipeline construction being the most severe. Because of the above ground structures, transmission lines have significant other effects, such as providing nesting and roosting sites for birds; however, none of the special status animals are known to commonly use transmission line towers.

Table N-6 Appendix N shows the acres and percent of the range within grazing allotments for each special status animal. Twelve of 29 species have more than 10 percent of their range within an allotment. Although, impacts of livestock grazing on particular species are poorly known, the



stocking rates and infrequency of use are such Chemehuevi, Rice Valley, and Ford Dry Lake Allotments would likely have little or no effect on special status species in those allotments.

Impacts of vehicle use of minor routes and washes is most important at locations where critical animal activities occur. Among these are nesting, nursing, and watering sites. The following critical sites/activities for specific species or species groups are generally fixed or predictable over time:

- Bats--Caves and mines used for nurseries, winter hibernacula, and summer roosts
- Burro deer--Water sources
- Hawks and falcons--Eyries (cliff nests)

Continuing vehicle activity on roads near these sites at the proper season would potentially disrupt hibernation, rearing of young, or watering, and would thereby reduce populations.

Sites for nesting or rearing of young for other special status animals are more evenly spread out in suitable habitat within the range of each species. Notwithstanding this, due to specific habitat requirements, suitable habitats for the following species are limited even though the range may be extensive: Mountain plover (playas and flats near agriculture), elf owl (riparian), Gila woodpecker (riparian), vermilion flycatcher (riparian), yellow warbler (riparian), Colorado Desert fringe-toed lizard (sand dunes), Mojave fringe-toed lizard (sand dunes), and Couch's spadefoot toad (flooded impoundments in washes). Vehicle activity on roads or cross-country within suitable habitat for these species would disrupt critical activities (e.g, breeding, nesting, rearing of young, foraging) during certain seasons.

The Mojave fringe-toed lizard was recorded by Margaret Fusari at a number of sites in Chuckwalla Valley, including "Chuckwalla Valley Dunes" and Palen Dunes and other sites in 1976 and 1978 (Vertebrate Distribution Records, BLM Calif. Desert Dist. Library). Specimens curated at the Los Angeles County Museum of Natural History, San Diego Natural History Museum, and Museum of Vertebrate Zoology (U. C. Berkeley) were collected in dunes and playas throughout Chuckwalla Valley (i.e., Palen Dunes and Dry Lake and Ford Dunes and Dry Lake) and Rice Valley Dunes (Museum Records, BLM Calif. Desert Dist. Library). A general distribution map and other references on life history and distribution may be found in Zeiner *et al.* (1988). Off-highway vehicles do not heavily use the dunes and playas listed (<10 vehicles per week) (John Blachley, BLM, law enforcement ranger, pers. comm.). Nevertheless, the vegetation on fine, blow sand dunes and playa edges used by fringe-toed lizards are susceptible to loss and degradation with repeated use. In addition, the escape behavior of fringe-toed lizards (i.e., diving into the sand) makes them vulnerable to being run over. Knauf (2002) compared Colorado Desert fringe-toed lizard (*Uma notata*) occurrences on 25 transects in an area closed to vehicles and 25 transects in an adjacent area used heavily for OHV free-play. Comparisons were made in both spring and fall. In the spring and fall seasons, respectively, mean numbers observed on the transects were 240 percent and 220 percent times higher in the OHV closed area than in the open area.

Small-scale mining activity would disrupt important seasonal activity of a species if it occurs at a critical site, such as a cave, mine shaft, water source, eyrie, riparian zone, dune, or playa. Seasonal

restrictions on mining operations would effectively mitigate the impacts in some cases. The reopening of small mines would disrupt bats where they are roosting, nursing, or hibernating.

Large mines, such as open-pit gold mines, disrupt animal activity over a larger area than small mines. Overall impacts would depend upon the habitats to be disturbed and the species present. Even with large mines, reductions in a species' population would likely be only local, and the greatest significance would be at the critical sites listed above.

Other widely disseminated activities that would disrupt local populations or disturb small areas of habitat include camping, long-term visitor (camping) areas, and communications sites. These impacts are not likely to alter populations except at a critical site as listed above. In addition, the number of bird collisions with communication towers has been increasing nationwide, and there is concern that the level may actually effect overall populations of some birds. Effects are probably greatest on birds that migrate at night because they are unfamiliar with and cannot see the structures.

Desert washes are used for access, recreational touring, and camping. These activities would disturb wildlife and degrade habitat by inhibiting plant establishment. As vehicles leave the wash bottoms, the breaking down of wash banks would crush burrows in the banks and disturb wash vegetation, which is usually denser along the banks. Noise and presence of vehicles in washes would disturb sensitive species, such as songbirds and bighorn sheep.

Recreational activities, such as hunting, target shooting, rock-hounding, birdwatching, and rock-climbing can disturb special status animals, but adverse effects probably only occur at critical sites as listed above.

Collecting of animals for pets or other uses would have local effects on the populations of some special status animals, such as rosy boa (especially along low-volume, paved highways), whose reproductive rates may be insufficient to compensate. Collection of prairie falcon fledglings by falconers, poaching of deer, and illegal shooting of other wildlife (Berry 1986) are known to occur, but the amount and significance is not known.

Military aircraft activities within CMAGR potentially disrupt activities of burro deer and other special status animals present there. Weisenberger et al. (1996) found that deer (and bighorn sheep) responded to aircraft overflights with increased heart rates and altered behavior; however, animal response decreased with increased exposure.

#### **From Issue 4: Wild Horses and Burros**

**Desert Tortoise:** Burros in and around the two burro herd management areas in tortoise critical habitat (Table 4-3) would trample burrows, compete for forage, and degrade habitat by reducing biomass and plant cover (Kleiner and Harper 1977). However, burro use of critical habitat is low and intermittent. The Piute Mountain herd area, entirely in critical habitat, currently has an estimated 37 burros even though the target management level is 0.

**Table 4-3. Burro Herd Areas, Herd Management Areas, and Burro Concentration Areas in Desert Tortoise Critical Habitat, in acres and (percent)**

Piute Mountain		Chemehuevi			Chocolate/Mule Mtns		
HA	CA	HA	HMA	CA	HA	HMA	CA
39,781 (2)	6,828 (<1)	128,866 (6)	175,347 (9)	none	128,866 (6)	175,347 (9)	147 (<1)

**Bighorn Sheep:** Populations of wild burros above target levels (i.e. appropriate management levels) would overgraze forage plants (Hanley and Brady 1977; Douglas and Norment 1977, Elliot 1959, McQuivey 1978), expand and graze outside of the herd management area, damage water sources needed by bighorn sheep (Weaver 1959), and physically displace bighorn sheep at water (Dunn and Douglas 1982). Although some springs have been fenced to exclude burros (but not bighorn sheep), others may be impacted from trampling of soil, denudation of vegetation, and fouling of the waters. Seegmiller and Ohmart (1981), Ginnett and Douglas (1982), McMichael (1964), Walters and Hansen (1978), and many others have found a large overlap in diet of bighorn sheep and burros; where burro populations are above forage carrying capacity, competition would be expected. Table 4-4 shows the acres and percent of the “occupied range,” “unoccupied former range,” and “movement corridor” in two burro herd management areas and one herd area (Map 2-25 Appendix A).

**Table 4-4. Bighorn Sheep Use Areas in Burro Herd Management Areas in the NECO Planning Area, in acres and (percent)**

Bighorn Sheep Use Categories	Piute Mountain HA	Chemehuevi HMA	Chocolate/Mule Mtns HMA
Occupied Range	26,521 (2)	155,181 (9)	129,096 (8)
Unoccupied Former Range		1,091 (<.5)	24,680 (4)
Movement Corridor	5,124 (1)	70,261 (12)	24,832 (4)

**Other Special Status Species:** Burros degrade riparian habitat where they seek water and shade by reducing ground cover and hedging lower shrub and tree strata, especially where burro numbers exceed carrying capacity. This would adversely affect riparian birds. The Chocolate Mule Mountains Herd Management Area would include portions (52, 15, and 53 percent, respectively) of the projected ranges of Gila woodpecker (state-listed species), vermilion flycatcher, and yellow warbler. Ninety three percent of the projected range of the state-listed elf owl is within the Chemehuevi Herd Management Area. These four bird species are all insectivores that depend upon riparian habitat with a well developed over-story.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Berry (1996) reviewed the literature on the effects of off-road vehicles on animal populations and habitats. Boarman (1999) reviewed the literature on effects of off-highway vehicles on desert tortoise and its habitat.

**Desert Tortoise:** Tortoise populations are known to be depressed more than ½ mile out from heavily traveled highways (Nicholson and Berry 1978). These effects are greatest along paved roads where traffic volume and speed are greatest. Impacts on dirt roads are presumably less because traffic volume and speed are less.

In the No Action Alternative, adverse effects of travel on existing roads and trails and in washes would continue to cause population suppression along these travel corridors. Among the impacts that cause the observed declines are the following factors:

- direct mortality from being run over by a vehicle
- increases in predator (especially ravens) populations using vehicle roadkills to supplement their diet
- changes in plant community favoring lower nutrition annual plants from (a) vehicle-related fires, and (b) invasive plant introductions along road corridors
- loss of foraging and burrowing habitat due to crushing of vegetation associated with camping along roads and washes
- direct mortality of tortoises from various illegal activities such as collecting (Berry *et al.* in press) and shooting (Berry 1986) of tortoises.

Several annotated bibliographies address these effects of roads on wildlife and wildlife habitat; among these are Boarman 1999, Rowlands 1980, Spellerberg and Morrison 1989, and Webb and Wilshire 1978. Trombulak and Frissell (2000) reviewed the literature on ecological effects of roads, and Lovich and Bainbridge (1999) reviewed a variety of habitat degrading activities, including roads, in the California desert. These bibliographies and literature reviews elaborate on the effects listed above on general wildlife populations or desert tortoise (Boarman 1999), provide additional literature, and describe other effects of roads.

With the proposed designation of routes there are 0.7 miles of road per square mile (or 24 miles per township) in desert tortoise critical habitat. Route density in tortoise habitat outside critical habitat is about the same. In addition, on BLM lands an unknown amount of navigable washes are open for travel. There are also a few open areas, dunes, and playas that are open for travel off of roads and washes, but none of these are in desert tortoise critical habitat.

In JTNP and CMAGR road systems are small and relatively fixed. There is a biological opinion for the use of that portions of CMAGR in critical habitat for the desert tortoise. The biological opinion directs speed limits to 25 mph.

On BLM lands, visitors may drive off of routes to stop, park, or camp. These activities are limited to a strip 300 feet on either side of a route except in Chuckwalla Bench ACEC, where the limit is 100 feet.

The Johnson Valley to Parker and Parker 400 competitive event routes are designated for high-speed, competitive off-road vehicle events and accompanying spectator uses at pits and finish areas. While confined to traditional route alignments and areas, these events have resulted in soil compaction and erosion, widening of existing roads and trails, creation of new roads and trails, and increased direct mortality and harassment of wildlife. In all likelihood, the Parker 400 race route will not be permitted again due to the likelihood of a jeopardy biological opinion on effects to desert tortoise from the USFWS and due to the lack of promoter interest. Retention of the criteria in the CDCA Plan allowing races on existing routes according to specified criteria would mean that new race route alignments could be created. If racing events were permitted on new routes, tortoise habitat would be lost due to route widening and racing off of the course. In addition, there may be direct mortality from high volume, high velocity traffic on the roads unless allowed only in the winter. In any season, crushing of tortoises and burrows could occur off of routes by racing off of the course.

**Bighorn Sheep:** Bighorn occupied range is generally mountainous, and roads are few in the steeper areas where escape, cover, and lambing areas occur. The effects of light use of these routes into bighorn occupied range is not fully known. However, vehicle travel to or near watering sites would cause animals to vacate the area. For example, Jorgensen (1974) found that a desert water source was used 50-percent less on days with vehicle traffic. These effects would be reduced by the closure of those routes that come within 1/4 mile of a natural or artificial water; 29 miles of route are closed under this criteria.

**Other Special Status Species:** Vehicle use on highways and, to a lesser degree, roadways results in some mortality of wildlife, especially to vulnerable or slow moving animals such as flat-tailed horned lizards and desert rosy boa. The amount of mortality for various special status animals and the relative importance to the populations is not known. To the extent that the mortality affects populations, highways and roads would serve as barriers to animals movements and gene flow. Culverts and bridges along major highways may mitigate the barrier effects for some species.

Impacts of vehicle use of minor routes and washes is most important at locations where critical animal activities occur, such as nesting, nursing, and watering. The following critical sites/activities for specific species or species groups listed below are generally fixed or predictable over time. Vehicular activity near these sites at the proper season could disrupt critical animal activities and thereby reduce populations. Criteria were applied as indicated to close routes to reduce the adverse effects on the site/activity listed.

- Bat caves and mines used for nurseries, winter hibernacula, and summer roosts:
  - routes closed within 1/4 mile of significant bat roosts:
    - 15 miles of route closed
- Burro deer water sources
  - routes closed within 1/4 mile of natural or artificial watering site:
    - 30 miles (same as listed above for bighorn sheep)

- Prairie falcon and golden eagle eyries (cliff nests):  
closure of routes within 1/4 mile of falcon or eagle eyrie:  
2 miles of route closed
- Couch's spadefoot toad breeding and foraging habitat:  
closure of routes within 1/4 mile of known occurrences:  
0 miles of route closed.

Mark Dimmitt (Ph.D. candidate at Univ. of Calif. Riverside and later BLM wildlife biologist in the 1970's) recorded numerous sites for Couch's spadefoot toad in the late 1970's in his studies on the species (Vertebrate Distribution Records, BLM Calif. Desert Dist. Library). Specimens curated at the Los Angeles County Museum of Natural History were collected along the major wash beside Highway 78 (Museum Records, BLM Calif. Desert Dist. Library). Dimmitt (1977) mapped 25 sites where he found spadefoot toads in far eastern San Bernardino (1 site), Riverside (5 sites), and Imperial (19 sites) Counties. All the sites were along highways and major roads – Highway 95 in San Bernardino County; Blythe-Midland Road, Chuckwalla Rd, and Interstate 10 in Riverside County; and Highway 78, Ted Kipf Road, and Ogilby Road in Imperial County. He also examined 21 other ponds under favorable conditions where no spadefoot toads were seen. Kim Nicol (CDFG, ecologist, pers. comm.) observed Couch's spadefoot toads in 2000 along in impoundments in "Midway Well Wash" alongside Highway 78.

In the arid environment of far eastern San Bernardino, Riverside, and Imperial Counties, activity of spadefoot toads is restricted to short periods following rains when they emerge to feed and reproduce. Spadefoots are underground most of the year to avoid desiccation. Therefore, the cues for emergence are critical to their survival. Dimmitt and Ruibal (1980) observed that vibration from an electric motor resulted in almost 100 percent emergence except when soil temperature was below 20 deg. C. They speculated that the motor resembled the sound of rain, vital to survival above ground, on the surface. Soil wetting and increasing soil temperature failed to break dormancy in the absence of a sound stimulus. They also noted that toads are easily disturbed when above ground and will retreat quickly into their burrows at night when struck with a beam of light from a flashlight. During, and perhaps just before, the short above-ground period, spadefoots seek refuge just below the surface in shallow burrows. They are then vulnerable to crushing by vehicles driving in washes. However, emergence occurs after summer rains (July-September) when human activity in the desert is lowest.

#### **From Issue 6: Land Ownership Pattern**

The BLM has been acquiring wildlife habitat in the NECO planning area for the past 20 years. Direct purchases have been made in the Chuckwalla Critical Habitat Unit using Land and Water Conservation Funds appropriated by U.S. Congress and using tortoise habitat compensation funds. The primary purpose of these acquisitions was to bring tortoise habitat into federal ownership to reduce the likelihood of surface-disturbing development on private lands.

Recently the BLM has made very large acquisitions from Catellus Corporation using both donated and federal Land and Water Conservation Funds. Most of these lands have been in and around wilderness areas. The purpose of these acquisitions was to bring endangered species habitat (i.e.,

desert tortoise) and wilderness inholdings into federal ownership to reduce the likelihood of surface-disturbing development.

Under the No Action Alternative, the BLM and/or CDFG would continue to purchase land using compensation funds. Other inholdings in critical habitat units would be purchased or acquired by exchange as opportunities arise.

## Summary of Impacts

### *General Wildlife*

Overall, impacts to wildlife from human activities are low in the NECO planning area. This is because a high proportion of the NECO planning area is in reserve level management (i.e., Joshua Tree National Park, BLM wilderness, BLM ACECs, and even most of Chocolate Mountains Aerial Gunnery Range). Despite this, the invasion and spread of invasive plants, heavy burro use in several areas, and barriers to animal movement are significant impacts on wildlife populations.

Various old and new utilities form a network throughout the desert. The direct reduction in habitat is small, but indirect impacts resulting from access on maintenance roads may be significant in some areas. Transmission lines provide perching and nesting sites for birds of prey. This may be beneficial for these species, but may negatively effect populations of some prey species. Additional utilities connecting the Los Angeles and San Diego areas with the rest of the country can be expected.

An established network of roads and highways provides access for miners, recreationists, and others. Roads and paved highways promote raven populations by providing road-kills used as food. Exotic, weedy species increase their distribution by invading down roadways. The Interstate Highway system (I-40 and I-8) is a major fragmenting barrier for wildlife, especially for slow moving reptiles such as desert tortoise.

The spread of invasive, nonnative exotic plants has degraded habitat for wildlife throughout the desert. Tamarisk infestations at springs are especially detrimental in the NECO planning area. Effected animals include migrating songbirds, bats, and other riparian dependent species. Desert habitats have been degraded by the replacement of native perennial grasses with invasive annual grasses and forbs. The effects on wildlife species are not fully understood at this time.

Urbanization in the region is centered around a few rural communities. Most of these have changed little for many decades. To date, loss of habitat to urbanization has not been great, and indirect effects on wildlife have been negligible.

Livestock grazing has occurred historically throughout much of the desert. The four grazing allotments cover about 10 percent of the planning area. Nevertheless, grazing intensity is low, and use is intermittent in three of the four allotments. Grazing is more important in and around the Mojave National Preserve to the north of the NEMO planning area. Overall effects on general wildlife are slight in the planning area.

Burro use in the HMAs along the Colorado River is significant. Monitoring data has shown that some areas have received excessive burro use, resulting in the degradation of riparian habitat in some areas. Where they

exceed the lands carrying capacity, there have been continuing gathering operations to remove burros. Rare and vital habitat associated with springs and riparian areas are critical to migrating songbirds and some resident water and riparian dependent species (e.g., morning doves, Gambel's quail).

Although most mining operations have been small, there are a few large gold mining operations in the southern part of the planning area. There has been some loss of microphyll woodland used by wildlife as movement corridors. Historically, there has been a considerable amount of small item mining and exploration throughout the planning area, especially in mountains. Some of this small mining activity has displaced wildlife at springs in the past, but there is little of such activity in the planning area today.

The California Desert Protection Act of 1994 established wilderness areas throughout the region. Within wilderness areas, the effects of motorized vehicles are virtually eliminated, and other multiple uses are greatly reduced. In addition, Joshua Tree National Park was expanded. Designation of the Mojave National Preserve adjacent to the planning area reduced multiple-use management (except hunting and livestock grazing) over several million acres in the region. Large amounts of desert tortoise habitat are now within the Preserve.

The BLM has several habitat acquisition efforts underway. Among these are small and medium sized acreages bought from time to time using compensation funds. Recent purchases from Catellus Land Development Corporation have added several hundred thousand acres to the public land rolls both in the NECO planning area and in adjacent regions. These acquisitions increase the capability of federal and state agencies to manage these lands as wildlife habitat.

There are numerous military bases in the California Desert and nearby in Nevada. Most are very large covering hundreds of thousands of acres. The only military base in the planning area is the Chocolate Mountains Aerial Gunnery Range. The Marine Corps Air Combat Center is located just west of the planning area. The former is used primarily for bombing practice at small, fixed targets. Only a few acres of wildlife habitat are directly affected by the bombing. For the most part, the Gunnery Range is beneficial to wildlife by excluding conflicting uses.

Various recreational activities, such as camping, hunting, target shooting, rock-hounding, and rock-climbing, can effect wildlife in a localized area. These effects are probably most significant where they occur at a critical habitat feature, such as a spring or cave, or in rare habitats, such as dunes or playas. Wildlife displacement in critical seasons, such as when young are being reared, can be significant.

To the northwest, the West Mojave Coordinated Management Plan (CMP) is currently in preparation. To the south, the Northern and Eastern Mojave CMP is in preparation. To the west, the Coachella Valley Habitat Conservation Plan is in preparation. These plans will implement the desert tortoise recovery plan within their respective areas and will provide management prescriptions and protection for many other special status plants and animals.

Several ACEC plans and habitat management plans have been prepared to address habitat management issues in the planning area. Although some have targeted specific special status animals, several others have focused on important habitat for a wide range of wildlife species (e.g., Chuckwalla Bench ACEC Plan, Chuckwalla Valley Dune Thicket ACEC Plan, and Milpitas Wash Habitat Management Plan). The BLM's Rangeland



Tortoise Plan and California Statewide Tortoise Management Policy apply to much of the planning area; these policy documents provide some benefit to other wildlife species.

### *Desert Tortoise*

Tortoise populations have declined precipitously in much of the California Desert, including some areas in the NECO planning area. Surveys at permanent tortoise study plots have shown declines as high as 90 percent in the Chuckwalla Bench and lower Chemehuevi Wash areas. Causes are not yet clear, but mortality from shell diseases and predation are apparently high in these areas.

In the West Mojave, upper respiratory tract disease (URTD) has reduced desert tortoise populations significantly in the past 15 years or more. Individuals with URTD have been found in most regions of the California Desert, including the NECO planning area. As the URTD epidemic spreads, high mortality from URTD will possibly, if not probably, occur in the planning area.

Overall, disturbance of tortoise habitat has not been great in the NECO planning area (about 1 percent in critical habitat), but there have been large areas where non-native grasses have become dominant. The effects on desert tortoise are not fully understood. Fires have not been common or large in the NECO planning area in the past, but may increase as the invasive, non-native grass cover increases.

Tortoise mortality along highways is high, and populations are depressed significantly within 2 miles of Interstate 10, Interstate 40 and State Highway 78. Effects along major and minor dirt roads is unknown, but may be significant in total.

As evidenced by the large number of desert tortoises in captivity in urban areas, collecting has been high in the past. Whether legal protection and public education have reduced collecting in recent years is unknown.

Agriculture, roadkills, landfills, and other human activities have augmented raven food sources and have resulted in highly inflated raven populations. As a result, raven predation on hatchling and juvenile tortoises has severely reduced recruitment of young in some areas. Although the effects on tortoise populations, have been greatest in the West Mojave, some heavy predation on tortoises has been observed in the planning area, also.

Both the Chuckwalla Bench ACEC Plan and Milpitas Wash Habitat Management Plan included desert tortoise as a target species. Both plans cover portions of Chuckwalla Critical Habitat Area. The BLM's Rangewide Tortoise Plan and California Statewide Tortoise Management Policy prescribe policies on land acquisition and retention and on discretionary activities, but do not resolve conflicts with uses authorized in the CDCA Plan.

### *Other Special Status Animals*

Special status animals are affected as described above for general wildlife. However, most of them have reduced populations because of specialized behavior, habitat, or life history features that place them in conflict with human uses. For some special status species, the NECO planning area is at the margin of their distribution (e.g., Gila woodpecker, elf owl), and their populations are naturally small. There are currently

few management measures planned or implemented for special status animals except bighorn sheep and burro deer.

For both bighorn sheep and deer, there has been an active water development program underway for several decades. This program consists of (1) improvement of natural springs and tenajas (natural rock basin that retains a pool of runoff water), (2) development of artificial waters such as wells and guzzlers, and (3) installation of cattle or burro exclosures at watering sites. Most such improvements for bighorn sheep or located in or at the base of mountain ranges where escape terrain is available. Improvements for burro deer are mostly in washes and rolling terrain near microphyll woodland that provides cover from predators and weather. The water development program, including maintenance of facilities, has been largely directed by CDFG in cooperation with the Society for Conservation of Bighorn Sheep and Desert Wildlife Unlimited with some assistance from BLM.

#### 4.1.4.2 Vegetation Management

##### **From Issue 1: Standards and Guidelines**

**General Vegetation:** Vegetation within grazing allotments would be positively affected by implementation of the four National Fallback standards. Three of the four allotments already meet the standards, but at West Well in the Chemehuevi Allotment the riparian/wetland standard was not met due to infestation of tamarisk and impacts from burros to West Well. Recommended prescribed actions have been proposed and authorized by management to remedy these problems.

Under this alternative, minimal improvement is expected due to the current low level of grazing use in all four allotments. Improvement would come in the form of extended period of growth for perennial forage species in response to continued achievement of the native species standard through implementation of grazing management practices. The period for plants to recover from cattle consumption is expected to increase over the long-term. There would be benefits when biomass and vigor increase for forage plants with sustained maintenance of the standard. Continued maintenance of plant vigor would result in a corresponding short-term decrease in biomass, seed production, and seedling establishment for those species not currently consumed by cattle. Plant volume for forage species is expected to increase the greatest in Sonoran Creosote Scrub and Mojave Creosote Scrub plant communities. However, the Desert Dry Wash plant community may realize the greatest increase in forage plant volume by unit area. The increase in volume would likely increase canopy cover. There would be a benefit from increased litter for those series receiving higher rainfall. Over the long-term, all perennial plants adjacent to existing range improvements would increase in volume and vigor.

Seed production and seedling establishment for forage plants would increase slightly for the short-term. Germination of perennial grass and shrubs are expected to increase in areas where viable seed is present, thereby increasing chances for potential seed production for future germination.

Significant flora expression of plant series or communities is anticipated for those communities that have not reached their potential. Benefits from an increase in vegetative diversity for all plant communities are expected and significant increases in diversity are expected in Sonoran and Mojave

Creosote Scrub plant communities. Where communities have the potential, tree and shrub structure is expected to increase, and development of trees and shrubs for appropriate age-class distribution is expected, as well. Those species of plants and animals that seek greater plant size would benefit with this change. In the long-term, plant series will reflect achievement of later several stages of the plant community. This shift in plant communities should reflect a greater diversity of plants and animals.

Recruitment of perennial species is expected when weather permits. Removal of cattle after a favorable growing season would increase perennial grasses and shrubs. Fire frequency is not expected to change except prescribed burns utilized to increase perennial species or to improve habitat for special status species.

Construction activities that require installation of fence, troughs, pipe, storage tanks, and a corral would remove or trim vegetation in small areas, typically in or adjacent to currently denuded areas. Trimmed plants would sprout and regrowth would occur relatively quickly after construction is complete. Construction of improvements in tortoise habitat must adhere to existing direction listed in the Biological Opinion and Appendix C.

Trends and conditions for vegetation outside allotments would continue as currently observed.

**Biological Soil Crusts:** The disturbance of biological crusts by large grazing animals would affect these species. The crust's response to these disturbances varies depending on soil moisture, soil movement and compaction from the grazing animal's hooves. These allotments have been grazed for decades and continued light grazing would not produce additional changes to species diversity of the biological crust. Changes in grazing management may produce site specific impacts to biological crusts. When impacted sites are identified appropriate management action would be taken to maintain these sites. Trends and conditions for biological crusts outside allotments would continue as currently observed.

**Riparian/Wetland:** Riparian areas at certain spring sources within Lazy Daisy and Chemehuevi Allotments would quickly improve after treatment with prescribed actions. Conditions for all riparian/wetland areas are expected to improve over the long-term with continuous rangeland health assessments. There would be a significant increase in riparian plant species and would benefit riparian obligate plant and animal species with a reduction in occurrence of tamarisk in riparian/wetland areas. There would an increase in structure from trees and shrubs in the riparian zone. The width and length of the riparian zone following the area of moisture would increase. The plant and animal community would benefit from changes in composition of vegetative cover from herbaceous plants, shrubs, and trees. The number of age-classes for plants will increase over the long-term. As plant conditions improve, the diversity of plants and animals would increase. There would be a slow reduction in non-riparian species in the potential wet zone.

Short-term construction related activities for water developments or fence construction for protection of riparian vegetation would temporarily disturb or remove riparian and adjacent upland vegetation. This activity is not expected to significantly affect plant communities due to the relative abundance of soil moisture.

Trends and conditions for riparian/wetland outside allotments would continue as currently observed.

**Noxious Weeds:** There would be a substantial decrease in specific noxious weeds that respond to management techniques. Tamarisk would be reduced in riparian and wetland areas throughout the planning area. Reduction of noxious weeds by increased competition from native plants would move plant series to later seral stages. As native plant species increase, plant and animal species diversity would increase and disturbed areas would decrease reducing potential weed establishment.

Short-term construction related activities for range improvements would increase soil disturbance and may increase noxious weeds at or near the disturbance. Trends and conditions for noxious weeds outside allotments would continue as currently observed.

### **From Issue 2: Recovery of the Desert Tortoise**

**Natural Communities:** The existing planning environment provides a relatively high level of protection of natural communities. This results from the presence of one large National Park (JTNP) that is almost entirely designated wilderness, one large military base (CMAGR) with use restricted to a few relatively small target areas (<1 percent of CMAGR), and designated BLM wilderness areas (Map. 1-3). JTNP and wilderness areas are managed specifically for natural values; disturbance of natural communities in these areas is slight. Table 4-5 shows the acres and percent of each natural community type within these areas. The following figures from the table are notable: (1) very little (4 percent) Desert Chenopod Scrub is in these protected areas; (2) a high proportion (102 of 140=73 percent) of Springs and Seeps are in these areas; (3) all Mojave Pinyon and Juniper Woodland is in these areas; and (4) no Playas are in these areas.

**Table 4-5. Natural Communities within JTNP, CMAGR, and BLM Wilderness, in acres and percent of total**

Natural Community	JTNP		CMAGR		BLM Wilderness		Total
	acres	%	acres	%	acres	%	acres
Sonoran Desert Scrub	408,506	11	323,910	9	1,086,547	29	<b>1,818,963</b>
Mojave Desert Scrub	25,273	3			403,619	50	<b>428,892</b>
Desert Dry Wash Woodland	52,265	8	132,792	20	77,933	12	<b>262,990</b>
Mojave Pinyon / Juniper Woodland					1,928	100	<b>1,928</b>
Desert Chenopod Scrub	76	4					<b>76</b>
Springs and Seeps (no. of sites)	21	15	11	8	70	50	<b>102</b>
Sand Dunes	3,110	5			16,010	26	<b>19,120</b>

Most of the impacts to natural communities occur on private lands or on BLM non-wilderness lands. Impacts on the latter generally result from authorized activities under BLM's multiple-use mandate. Table 4-6 shows the acres and percent of each natural community within each MUC (designated wilderness is included under MUC C in the table). The following numbers from the table are notable: (1) 32 percent of Desert Chenopod Scrub is in MUC I even though it is a very rare community; (2) 64 percent of Playas is in MUC I; (3) no Desert Dry Wash Woodland and only a very small proportion of Sand Dunes (3 percent) are in MUC I; and (4) only one Springs and Seeps site is in MUC I.

MUC M and MUC I have potential impacts to large portions of the Playa community at the Ford Dry Lake and Sand Dunes community in the Rice Valley open areas. Historically, OHV use has been very low at both sites and the impacts have been insignificant.

Impacts from the two cattle grazing allotments and two sheep allotments include: competition with native wildlife for forage (Heske and Campbell 1991), disruption of sensitive natural communities (especially Springs and Seeps), reduction in annual plant diversity (Waser and Price 1981), and compaction of soils. The last two effects are most severe in the vicinity of springs, water troughs, corrals, and salt licks used by cattle (e.g., Sunflower Spring). The effects of grazing on ecosystems in arid lands are reviewed by Archer and Smeins (1991).

**Table 4-6. Natural Communities within each BLM Multiple Use Class**

Natural Community	MUC C	MUC L	MUC M	MUC I
Sonoran Desert Scrub	1,102,310 (30)	997,962 (26)	918,388 (24)	20,045 (<1)
Mojave Desert Scrub	404,303 (51)	196,703 (24)	174,889 (22)	3,200 (<1)
Desert Dry Wash Woodland	79,462 (13)	177,471 (26)	219,833 (32)	
Mojave Pinyon/Juniper Woodland	1,928 (100)			
Desert Chenopod Scrub		677 (33)	670 (32)	655 (32)
Playas		2,692 (3)	28,689 (33)	56,683 (64)
Springs and Seeps (no. of sites)	70 (50)	31 (22)	5 (4)	1 (1)
Sand Dunes	16,059 (26)	7,246 (12)	33,940 (55)	1,766 (3)
<b>All BLM lands in NECO</b>	<b>1,604,062 (**)</b>	<b>1,384,205 (25)</b>	<b>1,389,491 (25)</b>	<b>83,463 (2)</b>

Table 4-7 shows the acres and percent of natural communities within the four livestock grazing allotments on BLM (and interspersed private) lands.

**Table 4-7. Natural Communities within BLM grazing allotments, in acres and (percent of total)**

Natural Community	Lazy Daisy Cattle	Chemehuevi Cattle	Rice Valley Sheep	Ford Dry Lake Sheep
Sonoran Desert Scrub	118,005 (3)	129,415 (3)	57,509 (2)	33,845 (1)
Mojave Desert Scrub	207,450 (26)			
Desert Dry Wash Woodland	5,462 (1)	6,317 (1)	17,389 (3)	5,355 (1)
Mojave Pinyon/Juniper Woodland	1,928 (100)			
Desert Chenopod Scrub				216 (10)
Playas				5,269 (6)
Springs and Seeps (no. of sites)	16 (11)			
Sand Dunes			10,667 (17)	4,996 (8)
<b>All NECO Lands</b>	<b>332,886 (6)</b>	<b>137,321 (2)</b>	<b>85,565 (2)</b>	<b>49,681 (1)</b>

All of the allotments include only a small portion of several natural communities except for the following: (1) Lazy Daisy Cattle Allotment includes all (100 percent) of the Mojave Pinyon and

Juniper Woodland, 26 percent of Mojave Desert Scrub, and 11 percent of the Springs and Seeps; (2) Rice Valley Sheep Allotment includes 17 percent of the Sand Dunes; and (3) Ford Dry Lake Sheep Allotment includes another 8 percent of the Sand Dunes. Other widely disseminated activities that result in low level or localized effects on natural communities include camping, long-term visitor (camping) areas, and communication sites. Various recreational activities, such as hunting, target shooting, rockhounding, birdwatching, and rockclimbing can disturb wildlife, but they have little overall effect on natural communities. Harvesting of plant parts for the dried-plant floral industry can slightly reduce plant volume in a local area, but the overall extent has been very small. The major effect of these activities is from vehicle use on roads and in washes.

The total area of all targets within CMAGR is 2,812 acres, or less than 1 percent of the Range. Potential impacts within the targets include: vegetation removal from bombing, flares, and other use of targets; potential fires; and light use of roads. There is an extensive network of air corridors over the planning area; this could result in minor disturbance to wildlife where flights are low (Weisenberger *et al.* 1996).

### **Ecosystem Processes**

Changes to ecosystem processes that greatly affect natural communities and vegetation include construction of roads, highways, railroads, aqueducts, agriculture, urban development, fencing, and large projects. These barriers restrict movements of animals and can disrupt gene flow of both animals and plants.

### **Special Status Plants**

Similar to the natural communities, the existing planning environment provides a relatively high level of conservation for many special status plants. Table N-1 Appendix N shows the acres and percent of the potential range (number of sites for some species) of each special status plant within these JTNP, CMAGR, and BLM wilderness, management entities with a high level of surface protection and a very low level of use. The table shows that 24 of the 32 special status plants occur in one or more of these areas. For 5 of the 32 (red grama, saguaro, crown-of-thorns, Robison's monardella, and Munz' cholla), more than 80 percent of the range is in these areas. For 12 of the 32 (the previous plus Los Animas colubrina, California ditaxis, spearleaf, Arizona pholistoma, Orocopia sage, Coues' cassia, and Mecca-aster), more than 50 percent of the range is in these areas. And for 20 of the 32, more than 30 percent is in these areas. Only 8 of the 32 plants species do not occur in these areas.

The only federally listed plant in the NECO planning area, Coachella Valley milkvetch, has been found at one site in JTNP and on BLM-administered lands, in MUC L (Map 3-7b Appendix A). These sites are protected by policies that listed plants and their habitat, to the extent known, will be avoided by projects. At a minimum, mitigation measures would be developed in coordination with USFWS and approved by them through formal consultation under Section 7 of the Endangered Species Act. The two BLM sites are not in a utility corridor, not in a livestock grazing allotment, and not in a burro HMA. Off-road travel by vehicles could effect any of the three populations.

Most impacts to special status plants occur on private lands or on BLM non-wilderness lands. Impacts on the latter generally result from authorized activities under BLM's multiple-use mandate. Table N-2 Appendix N shows the acres and percent of each special status plant within each BLM MUC. Class C includes designated wilderness. A considerable portion of the range of some special status plants is in Class C and wilderness; this has been addressed immediately above.

It is significant that 19 percent of the range of angel trumpet, 28 percent of Harwood's rattleweed, and 100 percent of the sites for giant Spanish needle are on Unclassified lands. These lands are planned for disposal into private ownership; development would presumably follow such a transfer.

Table N-3 Appendix N shows the acres and percent of the range (number of sites for some species) of each special status plants within the four livestock grazing allotments on BLM (and interspersed private) lands. The most significant are crucifixion thorn with 61 percent of its range in the two cattle allotments (not eaten by cattle), lobed ground-cherry with 41 percent of its range in the Lazy Daisy Cattle Allotment, glandular ditaxis with 21 percent of its range in the Chemehuevi Cattle Allotment, foxtail cactus with 14 percent of its range in all four grazing allotments, and desert unicorn plant with 10 percent of its range in all four allotments. The remainder of special status plants do not occur, or have less than 2 percent occurrence, in grazing allotments.

Both sheep and cattle can eat special status species. Of the 5 special status plants listed above, crucifixion thorn and foxtail cactus are not eaten by livestock, but the other three might be eaten (Jessica Walker, Botanist, BLM, pers. comm.). Livestock can also trample special status plants. They can damage habitat by compacting soils, reducing cryptogamic crusts (Brotherson *et al.* 1983), reducing annual plant diversity (Waser and Price 1981), and altering other soil water and chemical characteristics; these impacts can lead to elimination of sensitive plant species (Kleiner and Harper 1977). The greatest effects of trampling and soil compaction occur at water troughs, corrals, and salt licks. All but the Lazy Daisy Allotment receive very low, infrequent use, as described earlier.

#### **From Issue 4: Wild Horse and Burros**

Vegetative plant communities vary throughout the Herd Management Access (HMAs) which burros utilize for forage and cover. Key forage areas (areas in which key forage species serves as an indicator of the degree of use of certain associated species) are typically located near water sources, where burros would congregate, especially during the dry season. The objective is to manage these areas at utilization levels between 30 and 40 percent of current years use of key species. This allows the key species to maintain its health, produce seed, allow for establishment of seedlings and allows for continued use of leaders below the browse line. Key areas which have overlapping use by grazing ungulates are most susceptible to overgrazing, especially during drought years.

Rangeland health determinations have been used to evaluate rangeland health standards for cattle grazing allotments which overlap HMAs. The Chemehuevi ephemeral allotment determination found that the Riparian/Wetland and Native Species standards were not met, in part, due to an over population of burros which graze on the key species. Cattle grazing has not been authorized since 1989.



Various degrees of foraging behavior by burros is evident. In some areas within the Chocolate/Mule Mountain HMA, bark stripping of ocotillo (*Fouquieria splendens*) is evident. This typically deforms the growth pattern of ocotillo. Instead of some long shoots growing 8-10 feet tall, the plant will have multiple shorter shoots that doesn't grow above 6 feet. More investigation needs to be done, to see if this is physiologically detrimental to the plant and its ability to reproduce. Another example is a well developed browse line on palo verde (*Cercidium sp.*) and desert iron wood (*Olneya tesota*). These tree species typically grow to twenty feet in height. Sometimes burros reach above the browse line (6 feet) and breaking off branches to retrieve the otherwise inaccessible leaders. This would probably not have any affect on the species ability to store carbohydrates and producing seed for regeneration, but diminishes the availability of browse for the ungulates. Burros graze on these trees up to about 6 feet above the ground.

Burros will typically leave the key areas during the wet season when ephemeral vegetation and waters are located throughout the HMA. If burro populations are maintained at appropriate management levels in the key areas, more than adequate forage is expected to exist for that population level throughout the remainder of the HMA. If the levels of use by burros on the key species exceed the proper use factors, than the excess burros need to be removed to preserve and maintain a thriving ecological balance and multiple-use relationship.

#### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Roads, by their very nature, have low vegetative cover and compacted soils. Although the size of the disturbed area may not be significant in itself, there are a variety of other effects of vehicle use that add to the significance. Among these are the following:

- introduction and spread of exotic plants
- alterations in surface water flow and percolation, especially where the roadbed is not at grade level (the overall effect may be to increase overall plant height, plant biomass, and foliage arthropods through "water harvesting" adjacent to compacted roadbeds [Johnson *et al.* 1975, Vasek *et al.* 1975b])
- loss of native vegetation due to associated camping along routes

The low-level, dispersed recreation use in the planning area has a relatively low impact on habitats and rare plant species. Table 4-8 shows the average number of miles of roads per square mile in each natural community type. The average number of linear miles of roads per square mile for the NECO planning area is 0.611 mile per square mile. These figures represent an 18 percent reduction in the miles of "open" routes, which includes closures created by the CDPA and proposed in NECO alternative (see section 2.5). Even without the NECO proposals the numbers are small due to historical low use and large areas dedicated to low impact uses.

Table 4-8 does not include washes in areas where navigable washes may be driven. Use of washes has similar effects to roads but also may result in loss of native vegetation in the wash or in adjacent areas as drivers leave the wash or "search" for alternate washes. Navigable washes have not been identified and, hence, the quantity is difficult to assess. However, driving in washes occurs mostly in Desert Dry Wash Woodland, which has a relatively high animal species richness. Most of the

driving in washes occurs in the southern half of the planning area, during the period of November through April.

Boarman (1999; pp. 31-33) discussed some of the literature relating to invasive weeds in the California Desert. Hall (1980) reviewed the literature on direct impacts of off-road vehicles on vegetation. He discussed literature relating changes in patterns and composition of vegetation and their reflection in plant density, plant cover, and species diversity.

Brooks (1998) performed the most in-depth analyses of the correlations between invasive annual plants and environmental impacts. He found that, despite comprising only 5 percent of the annual plant species in the desert, two invasive annual grasses--red brome (*Bromus madritensis* ssp. *rubens*) and Mediterranean split grass (*Schismus* spp.)--and one invasive forb--fileree (*Erodium cicutarium*)--accounted for 66 percent of total plant biomass during a high rainfall year. Biomasses of each were positively correlated with disturbances from off-highway vehicles and sheep grazing combined. He concluded that invasive annual grasses out competed native species. Invasive annual grasses contributed greatly to fire fuels, and combustion of dry red brome produced flame lengths and temperatures sufficient to ignite perennial shrubs. He cited other literature (e.g., pp. 11-12) showing that around the world plant invasions are promoted by human disturbances. He also showed that soil nutrients played a significant role and that nitrogen deposition may enhance the rate of invasion.

**Table 4-8. Average Road Mileage (Not Including Navigable Washes) per Square Mile in Each Natural Community**

Natural Community	mi. of road/mi <sup>2</sup>
Sonoran Desert Scrub	0.566
Mojave Desert Scrub	0.610
Desert Dry Wash Woodland	0.888
Mojave Pinyon/Juniper Woodland	0
Desert Chenopod Scrub	2.121
Playas	0.357
Springs and Seeps	N/A
Sand Dunes	0.197
<b>All NECO lands</b>	<b>0.611</b>

Impacts to large portions of the Playa community at the Ford Dry Lake and Sand Dunes community in the Rice Valley open areas are potentially significant. Historically, OHV use has been low at both sites and the impacts have been insignificant.

There are few recreation centers and campgrounds in or near the planning area to support recreation. Long-term winter visitors have been encouraged to congregate in local towns or camp in one of three long-term visitor areas (LTVAs). This has considerably reduced the incidence of random, dispersed camping that could affect of vegetation through crushing and disposal of wastes. The reduction of impacts from dispersed camping is off-set by the amount of area devoted to the LTVAs: 3066 acres for Midland and Mule Mountain LTVAs which are in or near proposed DWMAAs.

The Johnson Valley to Parker and Parker 400 routes would remain designated for competitive racing--i.e., high speed, competitive off-road vehicle events and accompanying spectator uses at pits and finish areas. This activity, while confined to traditional route alignments and areas--and in spite of design and stipulations--does result in soil compaction and erosion, widening of existing roads and trails, creation of new roads and trails, and increased direct mortality and harassment of wildlife. In all likelihood, the Parker 400 is no longer viable due to certainty of a finding of jeopardy opinion (desert tortoise) by the FWS and the fact that the event no longer has promoter interest. Retaining the MUC criteria for new race routes means that new route alignments could be created. While the opportunity for application is limited and would almost certainly have to be addressed in an EIS, potential impacts could be significant.

## Summary of Impacts

### *General Vegetation*

The existing planning environment provides a relatively high level of protection for vegetation communities in the planning area. This is due to the large portion of the planning area that is in Joshua Tree National Park, wilderness areas, BLM ACECs, and Chocolate Mountains Aerial Gunnery Range. Implementation of the Rangeland Health Standards and Guidelines for livestock grazing will positively benefit vegetation communities to a small degree because grazing levels are low in the four grazing allotments and only occasional in three of the four.

Most surface disturbing activities result from authorized activities such as utility installation, communication sites, and mining. Historically, most mining activity in the planning area was small in size. In recent decades, several large mines occupying several thousands of acres have been developed in the southern part of the planning area. Effects of mining are most significant on rare communities such as Playas and Desert Dry Wash Woodland in the planning area.

Invasive plants, especially the widespread conversion from native perennial grasses and forbs to non-native, annual grasses may disrupt community associations. Changes in insect consumption, seed dispersal, and pollination will continue to alter plant community species composition. Increases in fires due to annual grasses may also effect plant community species composition.

Casual use impacts are low. Visitation is low , seasonal and concentrated in LTVAs. Casual use in open dunes and playas has been very low, but heavy use could impact them and adjacent Desert Chenopod Scrub communities.

The proposal designation of routes would (along with the effects of the CDPA in 1994) reduce the total length of roads by 18 percent.

Where Dune and Playa vegetation communities are open for vehicle cross-country travel, these vegetation communities as well as Desert Chenopod Scrub communities adjacent to playas may be altered and even eliminated totally.

In areas where there are overpopulation of burros, the vegetative resources will be impacted through over utilization. The Chemehuevi/Havasui utilization study (October, 2001), key species had utilization levels ranging from 27 percent to 75 percent, with an estimated excess population of 448 burros. In the Chocolate/Mule Mountains and Picacho HMAs, the utilization studies (January, 2002) exhibited use levels below 40 percent as burro population estimates for the area are within the proposed level (120 burros) for the area. Plant communities will benefit, through increased vigor, production and regeneration if burro populations are maintained within the carrying capacity of the habitat.

### *Special Status Plants*

Most special status plants are receiving few, if any, impacts. However, inventories are not thorough, and the actual distribution of each species is poorly known. Generally, surveys for special status plants are conducted prior to project authorization, and avoidance of plants is standard.

Only five special status plants have more than 2 percent of their potential range in grazing allotments. Two of these are not eaten by cattle.

### *Biological Crusts*

Due to the low level of surface disturbing activities in the planning area, biological crusts should be in good condition. In the four grazing allotments, there may be some disturbance from hoof action; this would be most severe near and at water sites and along trailing areas. The effect of the conversion of ground cover from native perennial grasses and forbs to invasive annual grasses is not known.

### *Riparian/Wetland*

The few riparian and wetland areas are receiving only minimal disturbance, except planning area where burro populations exceed carrying capacity. The Rangeland Health Determination (1999) for the Chemehuevi allotment, which overlaps the Chemehuevi HMA, within an excess of 448 burros, indicated that Riparian/Wetland standards were not being met due to high levels of utilization on plant species by burros. Trampling at water sources has disturbed riparian and wetland vegetation at these sites.

Elsewhere, most springs and small streams are in mountains in designated wilderness areas; associated riparian and wetland vegetation is undisturbed. However, tamarisk infestations at springs and seeps has degraded some sites.

### *Noxious Weeds*

Over large areas of the California Desert, including the planning area, invasive non-native grasses have replaced native perennial grasses and forbs. The overall effect of these large scale conversions on plant communities is unknown. Noxious weeds are known to invade new areas along roads and at disturbed sites. The potential for invasion of new noxious weeds remains high.

In addition, non-native tamarisk trees have replaced native riparian communities along rivers and streams and even at springs throughout the West. Due to the scarcity of flowing streams, tamarisk infestation has occurred primarily at springs in the planning area. There has been some effort expended on eradication at these sites.

### **4.1.5 Wilderness Management**

Site-specific projects to (1) implement the National Fallback standards and guidelines (2) facilitate recovery of desert tortoise, and (3) protect special status plants and animals require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

#### **From Issue 1: Standards and Guidelines**

Managing ecosystem health in accordance with National Fallback Standards and managing grazing activities in accordance with the National Fallback guidelines would benefit resource values in the Old Woman Mountains Wilderness and Turtle Mountains Wilderness where portions of the Lazy Daisy Allotment occur, and in the Chemehuevi Mountains Wilderness where a portion of the Chemehuevi Allotment exists. These benefits are accrued upon improvements to air quality, hydrological function and water quality, soil quality, vegetation composition, and habitats for special status species. Such improvements to resource values promote the wilderness character of public lands designated as wilderness.

#### **From Issue 2: Recovery of the Desert Tortoise**

Management of Category I and II desert tortoise habitat within the Northern Colorado Desert and Eastern Colorado Desert Recovery Units in accordance with the California Statewide Desert Tortoise Management Policy, current Multiple-Use Class prescriptions, and existing plans that focus on management to protect desert tortoises (e.g., Chuckwalla Bench Area of Critical Environmental Concern Management Plan and Milpitas Wash Habitat Management Plan) would benefit resources in wilderness areas by improvements to vegetation composition and habitats for special status species.

Category I and II desert tortoise habitat includes all, or portions, of the following wilderness areas: Trilobite, Clipper Mountains, Piute Mountains, Bigelow Cholla Garden, Old Woman Mountains, Stepladder Mountains, Turtle Mountains, Orocopia Mountains, Chuckwalla Mountains, Little Chuckwalla Mountains, and Palo Verde Mountains. Multiple-Use Class C (Controlled Use) prescriptions described in the California Desert Conservation Area Plan (1980), as amended, pertain

to designated wilderness areas. The Chuckwalla Bench ACEC Management Plan affects portions of the Orocopia Mountains, Chuckwalla Mountains, and Little Chuckwalla Mountains Wilderness areas. The Milpitas Wash Habitat Management Plan affects a portion of the Palo Verde Mountains Wilderness.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Protection of special status animals and plants, and natural communities under the No Action Alternative relies principally on existing management of Joshua Tree National Park, Chocolate Mountains Aerial Gunnery Range, and BLM wilderness that restricts human disturbance and habitat modification. Protection of these species and natural communities is consistent with policy established by Congress in the California Desert Protection Act to preserve wildlife values associated with these unique natural landscapes and perpetuate in their natural state significant and diverse ecosystems of the California desert (Section 2, Public Law 103-433).

Existing management of bighorn sheep has resulted in the reestablishment of lost demes and an increase in metapopulation viability in some locations. Such management has benefitted wilderness resources by preserving wildlife values that comprise an important element of designated wilderness in accordance with statutory policy. It is anticipated that benefits to wilderness values will be accrued upon continuation of current management activities.

Management plans implemented for the Corn Springs and Chuckwalla Bench ACEC (affect portions of the (Chuckwalla Mountains, Orocopia Mountains, Chuckwalla Mountains, and Little Chuckwalla Mountains wilderness areas), as well as the Milpitas Wash Habitat Management Plan (affecting a portion of the Palo Verde Mountains Wilderness), protect special habitats used by other special species. Where such habitats are protected in wilderness, perpetuation of natural and diverse ecosystems is fostered.

### **From Issue 4: Wild Horses and Burros**

In accordance with the Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195), such animals are considered an integral part of the natural system of the public lands in areas where found. BLM is required to manage wilderness areas to promote, perpetuate and, where necessary, restore the wilderness character of the land and its specific values (43 CFR 8560.0-6, Management of Designated Wilderness Areas). Since wild horses and burros are considered part of the natural system where found, they must be considered as specific values which, in part, establish wilderness character. Herd Management Areas for burros occur in the following wilderness areas: Chemehuevi Mountains, Whipple Mountains, Palo Verde Mountains, Picacho Peak, Indian Pass, and Little Picacho Peak. A Herd Area is located in the Piute Mountains Wilderness, but it is currently managed for zero burros.

When the number of burros exceeds approved management levels (AML) for established Herd Management Areas, it is reasonably inferred that burros are no longer being managed "in a thriving natural ecological balance" as required by the 1971 Act. Those animals in excess of AML are subject to removal. Population estimates show that an excess number of burros occurs in the Piute Mountain

Herd Area, and the Chocolate/Mule Mountain and Picacho Herd Management Areas (see Section 3.7, Wild Horse and Burro Management). These burro management areas include portions of the Piute Mountains, Palo Verde Mountains, Indian Pass, and Picacho Peak wilderness area. Adverse effects stemming from the presence of burros include contamination of water, soil compaction and erosion, trampling of desert tortoise burrows, and reduction of vegetation and litter cover.

#### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Motorized-Vehicle Access:** Whereas motorized vehicles are prohibited in wilderness except as authorized by the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans, the extent to which unacceptable impacts to wilderness resources occur consequent to motorized-vehicle travel is proportional to the manner and degree of unauthorized incursions into wilderness areas. Prior to October 31, 1994 (date of enactment of the California Desert Protection Act), at least 645 miles of existing vehicle routes were open to motorized-vehicle use in what are now designated wilderness areas (see Table 2-12 ). These routes were extensions of routes that now only provide access to wilderness boundaries.

Since wilderness designation, an unknown number of unauthorized incursions by motorized vehicles into wilderness has occurred on vehicle routes that were once open to motorized-vehicle use. These illegal incursions have chiefly been recognized by the presence of vehicle tracks inside wilderness. Occasionally, individuals are caught driving vehicles inside wilderness and cited with violation notices. It is likely that such incursions would continue, especially since motorized-vehicle access to wilderness boundaries is provided.

The Rice Valley Dunes Off-Highway Vehicle Recreation Area abuts the Rice Valley Wilderness. Given the nature of the landscape, which is characterized by actively shifting sands and scant vegetative cover (see Section 3.4.4), establishing a clearly-identifiable wilderness boundary along the common border with signs or barriers is problematic and has not occurred (BLM staff, pers. comm.). Hence, vehicular intrusions into wilderness can happen without knowledge of the visitor. However, BLM staff report that the Rice Valley Dunes Off-Highway Vehicle Recreation Area is not frequently used (see Section 3.8.6), so intrusions into the Rice Valley Wilderness are concomitantly infrequent.

**Competitive Vehicle Events, Parker 400:** The Parker 400 competitive recreation route established through the California Desert Conservation Area Plan incorporates certain routes that comprise the boundaries (partial) of the Turtle Mountains, Stepladder Mountains, and Whipple Mountains wilderness areas. Prior to enactment of the California Desert Protection Act in 1994, the Parker 400 corridor occurred immediately adjacent to a portion of the Whipple Mountains Wilderness Study Area (WSA) recommended suitable for wilderness, and portions of the Turtle Mountains WSA and Stepladder Mountains WSA recommended as non-suitable for wilderness. Generally, vehicles could not stray into the Whipple Mountains WSA during a race given limitations imposed by topography, but ample opportunity existed for straying into the Turtle Mountains and Stepladder Mountains WSAs because of the relatively flat landscape. Recollection of BLM Needles Field Office staff is that such straying did, in fact, occur during racing events.

Retention of the Parker 400 corridor under the No Action Alternative is not anticipated to impact wilderness resources, as it is unlikely any competitive vehicle event will be permitted in the future given past experiences with similar events such as the Barstow-to-Las Vegas motorcycle race and the potential for adverse impacts to the desert tortoise and its habitat (see Section 3.8). It is anticipated that a finding of jeopardy by the U.S. Fish and Wildlife Service would be issued if such an event is proposed. With BLM's denial in 1990 of an application to use the California loop of the Parker 400 course, organizers moved the event in its entirety to Arizona, and have held it there since that time.

**Competitive Vehicle Events, Johnson Valley to Parker:** The Johnson Valley to Parker competitive recreation route established through the CDCA Plan incorporates certain routes that comprise the boundary (partial) of the Sheephole Valley Wilderness. Event design and stipulations identified in the Johnson Valley to Parker Motorcycle Race Environmental Impact Statement (1980) protect sensitive areas through the use of barriers and flagging, and reduced vehicle speeds (see Appendix K). These event design considerations would remain applicable to future events and would be implemented where necessary to prevent vehicular intrusions into the Sheephole Valley Wilderness.

**Competitive Vehicle Events, Multiple-Use Class Guidelines:** Where competitive off-highway vehicle events may be permitted in accordance with Multiple-Use Class L (Limited Use) guidelines, special limitations such as speed limits and other protective measures can be incorporated into the design of an event (see Section 3.8.4). With the use of barriers and flagging, and requiring that vehicle speeds be reduced when traveling on routes adjacent to wilderness boundaries, it is anticipated that vehicles would not stray into wilderness areas, thereby averting impacts to vegetation, soils, and wildlife. In Multiple-Use Class M (Moderate Use) areas, sensitive areas such as adjacent wilderness can be protected in the same manner as in Multiple-Use Class L areas. An event-specific environmental analysis prepared prior to approval of a special recreation permit would further consider effects of a proposed event. Additional mitigation measures may be incorporated into the permit as necessary to protect resource values.

A portion of the Rice Valley Dunes, which is designated as Multiple-Use Class M, is identified as an Off-Highway Vehicle Recreation Area and abuts the Rice Valley Wilderness. Competitive vehicle events in this area would be managed in accordance with Multiple-Use Class guidelines; measures protecting the wilderness area from vehicular intrusions can be incorporated into the design of an event at this location. However, the BLM has never received an application for a special recreation permit to conduct a competitive vehicle event in this area since its designation in 1980 through the California Desert Conservation Area Plan. It is not known whether interest in conducting such an event at this location will be expressed in the future.

#### **From Issue 6: Land Ownership Pattern**

Acquisition of private lands within wilderness is a continuing independent process requiring no specific action through the NECO Plan. Such acquisitions would benefit wilderness resources to the degree that actions adversely affecting natural conditions are averted. Actions potentially affecting natural conditions include use of existing roads by motorized vehicles or construction of new roads



in wilderness to access private lands. Persons owning lands completely surrounded by a wilderness area are afforded such rights as may be necessary to assure adequate access to such lands (43 CFR 8560.4-3). Determinations are made on a case-by-case basis. As more lands are acquired within wilderness, assurance that ecological processes can be maintained or enhanced is concomitantly increased because the potential for development of private lands and associated access through public lands is reduced.

### **Summary of Impacts**

Since designation of certain public lands in the NECO planning area as wilderness by Congress, threats to wilderness resource values have been reduced. Incursions into wilderness by motorized vehicles, the predominant activity that has adversely affected wilderness values, have decreased with installation of vehicle barriers, patrols by law enforcement personnel, and distribution of informational materials such as Desert Access Guides that promote responsible behavior (BLM staff conclusions). Improvements that may occur through management in accordance with National Fallback Standards and Guidelines, as well as undertaking actions to recover the desert tortoise, would benefit wilderness values. Adverse effects from excessive burros would likely continue. Continuing management to reestablish lost bighorn sheep demes would benefit wilderness values.

#### **4.1.6 Livestock Grazing Management**

##### **From Issue 1: Standards and Guidelines**

For the No Action Alternative, cattle and sheep grazing activities would be managed under National Fallback Standards and grazing guidelines. In addition grazing within four allotments on 605,454 acres of public land is defined under a basic management strategy that includes allotment management and activity plans, grazing regulations, and mitigation measures specified in current biological opinions. Installation of a few minor range improvements (e.g., short lengths of fence for resource protection) would be expected over the long-term to maintain rangeland health and prescribed resource objectives. Lessees would directly incur costs associated with additional labor for construction and maintenance required of selected areas of the allotment that have been found to not meet rangeland health standards due to past grazing activities. For example, traditional areas of grazing use would be altered or abandoned until results from assessments indicate prescribed management is progressing toward the standard. Changes to the lessee's livestock operation would last one to four years.

Rangeland health conditions have been assessed for all allotments. Except the area around West Well in Chemehuevi Allotment, all National fallback standards have been attained (BLM Records). Failure to achieve the standard was not based on impacts from cattle grazing. Excessive burros and an ever increasing infestation of tamarisk, a weedy species, at or adjacent to the well are the primary reasons for not meeting the standard. The prescribed removal of tamarisk by chemical and mechanical methods at West Well and the removal of wild burros would sufficiently increase native vegetation during the short-term to meet the Riparian/Wetland Standard. Mechanical and chemical treatment of vegetation at West Well would not affect the daily cattle operations in the Chemehuevi Allotment. The required treatments to control tamarisk would continue annually for three years with

periodic treatments as needed thereafter to maintain control (Remijio Chavez, BLM, pers. com.). The presence of vehicles, crew, and equipment would preclude cattle from watering at the well during treatment, but cattle would return shortly after operations cease. The removal of excess burros from the Chemehuevi Herd Management Area by water trapping or gathering on horseback with assistance from a helicopter would take, at the most, three to four days and not appreciably affect cattle operations. Cattle would avoid the area until removal of the gathering crews, horses, and equipment.

The annual calf crop would exhibit increased weaning weights with the anticipated improvement of vigor of perennial vegetation with the maintenance of rangeland health standards. A reduction in death loss from stress-related diseases and a general improvement in body condition for the herd would be expected with improvement in forage conditions. Implementation of standards would not impact current sheep grazing operations under this alternative because of the herder's ability to easily move sheep to almost any area of the allotment. If a sheep allotment did not meet one or more rangeland health standards, the affected sheep operations would not be as heavily affected as cattle operations because they could utilize forage from adjacent private lands where forage production is likely to be equal to forage production on BLM grazing allotments.

Minimal positive impacts are a result of implementing standards on grazing allotments only, improvement occurs only on a portion of the allotments and the total area for all allotments are 14 percent of the planning area. Therefore, improvement of resource conditions such as riparian habitat near West Well in Chemehuevi Allotment would affect a very small portion of the planning area. Livestock operations were not a factor in the failure of the riparian-wetland standard.

Meeting National Fallback Standards for upland soils would promote adequate amounts of ground cover to support infiltration, maintain soil moisture, stabilize soils and promote soil conditions that support permeability rates that are appropriate to climate and soils. The standard for riparian-wetland areas would promote residual vegetation for riparian-wetland functions to dissipate energy from flowing water, capture sediment, recharge groundwater, and stabilize banks along streams. The standard for stream channel function would promote stream sinuosity (perennial streams), stream bed roughness, and stream bed depth appropriate with stream banks and watershed. The native species standard would promote physical and biological conditions to sustain native populations and communities, ecological function, and restoration of habitats. Implementation of the standards would result in minimal increases in the above functions to the planning area.

### **From Issue 2: Recovery of the Desert Tortoise**

For the No Action Alternative, mitigation measures listed in current biological opinions (BO) for cattle and sheep grazing in desert tortoise habitat would direct future management. Cattle grazing would occur within critical and non-critical habitat desert tortoise habitat. In cattle allotments, limitations for perennial forage utilization designated by existing range condition would continue and restrictions for protection of tortoises and soil disturbance during construction of range facilities would continue. Temporary, non-renewable and ephemeral forage authorizations are limited in amount and period. The number and type of range improvements and designated period to construct range improvements is detailed in the BO for each allotment.

This alternative would allow grazing use to continue under existing terms and conditions which are similar to livestock grazing prescriptions found in Appendix C. Ephemeral cattle use has not occurred in the Chemehuevi Allotment for more than ten years due in large part to the absence of a lessee for many years. That aside, cattle cannot graze ephemeral forage on the allotment until there is at least 350 pounds of annual grasses and forbs per acre. This type of forage production has not occurred but one to three times in a ten-year period. No impact to this cattle operation is foreseen.

Grazing use of perennial vegetation in the Lazy Daisy Allotment is expected to continue as in the past (Table 3-7). In the last ten years, the lessee has not requested, nor has use been authorized, to graze ephemeral forage or temporary non-renewable perennial forage. The averaged grazing use for the last ten years has been 112 cattle, although 266 cattle could graze the allotment (42 percent utilization of approved use). The averaged grazing use is expected to continue while drier climatic conditions persist. Cattle grazing use has been authorized under existing biological opinions in desert tortoise habitat. Few range improvements have been installed in the last ten years. Installation of these improvements would be based on a case-by-case analysis, available funding, and need. Periodic and annual maintenance is required on existing facilities. Maintenance requires the lessee to visit improvements by foot, vehicle, and horseback. A significant portion of the improvements is found in wilderness. Ongoing maintenance of existing improvements, coupled with minimal additions of new improvements, has marginally increased demands for maintenance. However, continued grazing use at 42 percent of the available permitted use increases the proportional overhead costs for maintenance, animal husbandry, and administration of the lease.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

For the No Action Alternative, mitigation measures listed in current biological opinions (BO) for sheep grazing in desert tortoise habitat would direct future management. Under the BO to authorize sheep grazing activities in desert tortoise habitat, all grazing use and resulting impacts would occur in non-critical habitat for desert tortoise. Where feasible, bedding and water sites are to occur in previously disturbed sites, sheep are to graze across an area of use only once, and sheep will graze through an area in a scattered pattern.

This alternative would allow grazing use to continue under existing terms and conditions which are similar to livestock grazing prescriptions found in Appendix C. These terms and conditions have been in place for more than a decade for sheep grazing operations. Portions of Ford Dry Lake and Rice Valley Allotments are located in desert tortoise habitat. During this time, sheep producers have adjusted their operations to the prescribed mitigation measures. Sheep use in Ford Dry Lake and Rice Valley Allotments would be limited to years when ephemeral forage production exceeds 200 pounds air-dry weight per acre. Sheep operations are further constrained by period and area of use, camping restrictions, and bedding and watering restrictions. Grazing use has occurred once in the last ten years in the Ford Dry Lake Allotment and the lessee's grazing use of that allotment is expected to continue at that level for the foreseeable future. The Ford Dry Lake Allotment lessee has had the opportunity to graze sheep more often, but prefers instead to use areas or allotments adjacent to his base of operation. The Ford Dry Lake Allotment is west of his base of operations and when precipitation falls at Ford Dry Lake Allotment it is likely falling at his base of operations. Grazing

activities at Rice Valley Allotment have occurred twice in the last ten years and that level of use is expected to continue. Sheep activities would not be impacted above that already occurring with ongoing mitigation measures.

Under this alternative animal husbandry practice, maintenance of facilities, and coordination with the BLM for the two sheep and two cattle allotments would not impact the operators and there would be no discernable impact to daily operations.

### **Summary of Impacts**

The California Desert Protection Act established 69 wilderness areas, some of which included existing grazing allotments. Although grazing is allowed within wilderness, the restrictions regarding use of motorized vehicles, equipment and development of new range improvements have made the grazing operation more difficult for the permittees.

Changes to grazing management to meet the National Fallback standards would result in minimal positive impacts to annual and perennial vegetation for the planning area. Current field assessments have found that achievement of standards has not affected cattle and sheep grazing activities. Grazing operations continue to be affected by mitigation measures for listed species.

#### **4.1.7 Wild Horses and Burro Management**

##### **From Issue 1: Standards and Guidelines**

National Fallback Standards and Guidelines only apply to grazing allotments. The Chemehuevi Grazing Allotment is an allotment that overlaps the Chemehuevi Herd Management Area (HMA) for wild burros. It is an ephemeral cattle allotment which has not been authorized for use since 1989. A Rangeland Health Determination for Achievement of Rangeland Health Standards was conducted in 1999. The determination found that the Riparian/Wetland and Native Species standards were not met, in part, due to an over population of burros.

##### **From Issue 2: Recovery of the Desert Tortoise**

The Chemehuevi and Chocolate/Mule Mountain HMAs overlap portions of designated Category I and II desert tortoise critical habitat. The frequency of burro occurrence in these areas is low. Some burros utilize these areas during the wet season, when annual forbs and grasses are available along with intermittent water. This habitat would still be available for burro use under the No Action Alternative.

The Piute Mountain HA is entirely within Category I desert tortoise critical habitat and has an estimated 37 burros. The CDCA Plan (1980) prescribed a management level for zero burros. Burros located in this area will be removed and placed into the BLM's Adopt a Horse or Burro Program.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

There are concerns on the dietary overlap between burros and deer for available forage and the common use of upland waters between burros and bighorn sheep. This alternative would allow the continuation of developing wildlife waters for deer and bighorn sheep. This should alleviate some of the burro/wildlife conflicts surrounding waters and provide for alternative water sources for wildlife during drought conditions when tanajas become critically low or dry.

The placement of wildlife waters should disperse deer and bighorn sheep populations so that dietary overlap between forage species is reduced. Over time, as bighorn sheep and deer populations are increased, the potential for increased dietary overlap between grazing ungulates would increase and create a higher demand on natural waters. The habitat monitoring plan for the HMAs should detect changes in utilization patterns and level of use at natural waters.

Unfenced water developments near burro populations will attract burros to the site, where burros may take residence and potentially expand their ranges outside HMAs. This has occurred along the Coachella Canal near the town of Niland, California, which the BLM is addressing burro removals in areas where burros naturally wouldn't occur, but are drawn to the water.

Current management prescription of special status animals, plants and natural communities identified in this plan do not restrict burro management. Nevertheless, they may limit development of range improvements for burros, such as water developments and tamarisk removal, which would be addressed in separate environmental analysis.

### **From Issue 4: Wild Horses and Burros**

The inconsistent management of a common burro herd between the BLM California administered Chocolate Mule Mountain HMA (AML of 22 burros) and the BLM Arizona Cibola/Trigo HMA (AML 190 burros) would impact burros negatively. Burros would continually be removed on California administered lands to achieve the AML of 22, making management for 190 burros on Arizona administered lands infeasible.

The burros in the Piute Mountain HA would be removed and placed into the BLMs Adopt-A-Horse or Burro Program.

Based on the findings of Singer and Zeigenfuss (2000), all the HMAs, except the Chocolate-Mule Mountains HMA (AML 22), population levels are at the lowest levels for a genetic effective population size (139 - 185 animals), in which the number of breeding individuals (both male and female) that contribute to the next generation maintains genetic variation from one generation to the next. The Chocolate Mule Mountain HMA is below a recognized genetic effective population, of which genetic diversity in the herd would be low, due to inbreeding.

A total of 908,445 acres is available for the management of 362 burros in the NECO planning area. Table 4-9, reflects current burro HAs and HMAs acreage and AMLs for the NECO planning area.

**Table 4-9. Current Herd Area, Herd Management Area, and Appropriate Management Level in the NECO Planning Area**

Burro Herd Areas	Herd Area Acreage	HMA Acreage	AML
Piute Mtn.	39,781	0	0
Chemehuevi	406,894	406,894	150 <sup>a</sup>
Havasu (AZ)	78,952	78,952	150 <sup>a</sup>
Chocolate/Mule Mtns.	641,419	386,069	22
Cibola/Trigo (AZ)	36,530	36,530	190
<b>Total</b>	<b>1,203,576</b>	<b>908,445</b>	<b>362</b>

<sup>a</sup> HMAs share common AML

**Summary of Impacts**

Within the CDD (1980), there was a total 4,973,514 acres designated as burro herd areas as shown on Map 4-1 Appendix A. A total of 3,500,465 acres was designated for the management of 2,747 burros. Currently, there is a total of 1,454,286 acres (including Arizona HMAs) for the management of 560 burros, of which, two HMAs which total an AML of 110 burros, have burro population estimates of zero (see table 3. Chicago Valley and Piper Mountain HMAs). The remaining HMAs have management levels below the genetic effective population size, described by Singer and Zeigenfuss (2000). Cothran (2000), describes loss of genetic variability can lead to a reduction in fertility or viability of individuals in a population. The cumulative reductions in habitat available for burros and subsequent reductions in burro populations, has reduced the representation of this species and has likely compromised their gene pool and ability for populations to maintain genetic viable herds within the CDD.

**4.1.8/9 Recreation Management and Motorized-Vehicle Access**

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Motorized-Vehicle Access:** There is a close relationship between the pursuit of recreational activities and motorized-vehicle use in the California desert, whether motorized vehicles are used to drive for pleasure or are simply a means of access to recreation destinations such as campgrounds and wilderness trail heads. Given the desert's vast expanse and great distances to recreation sites, It is difficult, if not impossible, in many circumstances, to engage in recreational activities in this region without employing a motorized vehicle in some fashion. Therefore, actions which restrict vehicular access may affect opportunities for recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed.

In accordance with the California Desert Conservation Area Plan, motorized-vehicle access would be managed consistent with Multiple-Use Class guidelines (see Section 3.9.4). Vehicle access in

Multiple-Use Class L (Limited Use) areas is directed toward use of approved routes, that is, routes designated “open” or “limited,” while vehicle access in Multiple-Use Class M (Moderate Use) areas would be allowed on existing routes unless it is determined that use must be further limited. In managing motorized-vehicle access, BLM must comply with the criteria at 43 CFR 8342.1 which, in part, require that routes be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Further, special attention must be given to protect endangered or threatened species and their habitats.

To protect the desert tortoise and its habitat, “washes closed zones” would be established in portions of each of the two Desert Tortoise Recovery Units, specifically within designated critical habitat (see and Map 2-10). In these “washes closed zones,” vehicle use would be restricted to specific routes that are individually designated “open” or “limited.” To protect other sensitive species and their habitats, certain routes would be designated “closed” based on criteria developed in furtherance of the regulatory criteria at 43 CFR 8342.1 (see Table 2-14).

Of the 4,982 miles of inventoried unpaved routes within the planning area, excluding non-routes, partial non-routes, and routes in designated wilderness, Joshua Tree National Park, and the Chocolate Mountains Aerial Gunnery Range, 4,743 miles, or approximately 95 percent, would be available for motorized-vehicle use under the No Action Alternative. In addition, washes that constitute existing motorized-vehicle routes, or “navigable” washes, outside “washes closed zones” would be available for use (see Section 3.9.5 for the definition of “navigable” washes). Mileage of wash routes available for use in these “washes open zones” is undetermined.

To protect certain sensitive species and their habitats, 239 miles of routes are identified as closed in the NECO planning area (see Table 2-14). This mileage includes routes that are designated “closed” on public lands and routes on non-public lands for which route designation decisions do not apply.

As the closure of inventoried routes represents about 5 percent of the total mileage in the NECO planning area and access to all regions of the planning area is little changed (see Map 2-31), adverse effects to motorized-vehicle access, hence recreation that relies on such access, are minor.

Vehicles would not be excluded from desert tortoise critical habitat. Within critical habitat in the Northern Colorado Desert Recovery Unit, 431 miles of existing routes in Multiple-Use Class L and 329 miles of existing routes in Multiple-Use Class M would be available for motorized-vehicle use. This total of 760 miles of routes represents approximately 96 percent of the inventoried routes in the critical habitat unit. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone is 326,024 acres, or 35 percent of the critical habitat unit.

Within critical habitat in the Southern Colorado Desert Recovery Unit, 591 miles of open routes in Multiple-Use Class L would be designated open. An additional 526 miles of existing routes in Multiple-use Class M would be available for motorized-vehicle use. This total of 1,117 miles of routes is about 95 percent of the inventoried routes in the critical habitat unit. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone covers 121,189 acres, or 12 percent of the critical habitat unit.

Outside the two desert tortoise critical habitat units, there would be 1,020 miles of unpaved open routes in MUC L and 1,846 miles of unpaved existing routes available for vehicle travel.

As indicated above, motorized-vehicle access to certain washes that constitute existing routes in “washes closed zones” would be prohibited, though the extent (mileage) of such wash closures is undetermined. Hence, the limitations on motorized-vehicle access cannot be quantified. However, motorized-vehicle access within “washes closed zones” would not be altogether precluded. Access within these zones would be provided via specified routes. These routes would afford access to most portions of the “washes closed zones” (see Maps 2-10 and 2-31).

**Stopping, Parking, and Vehicle Camping:** In accordance with the California Desert Conservation Area Plan, stopping, parking, and vehicle camping are restricted to areas within 300 feet of a route, except within sensitive areas (such as Areas of Critical Environmental Concern) where the limit is 100 feet. These limits provide adequate space for stopping and parking alongside routes.

As regards vehicle camping, especially in remote back country areas, the quality of camping experiences depends, in part, on the level of disturbance that occurs. When disturbances are greatest, camping experiences are generally the least satisfactory. One source of potential disturbance when camping alongside back country vehicle routes comes from the approach and passing of motorized vehicles. In desolate areas where few people travel and assistance is far away, the approach of a vehicle is often cause for concern regarding one's safety. Also, vehicles traveling dirt roads generate dust and noise that can adversely affect the camping experience.

One solution to minimize such disturbances is to camp far enough away from roads that others passing by cannot see the campsite, and dust and noise from vehicles would be lessened. Limits that constrain this option and require vehicular camping closer to roads, such as those prescribed by the California Desert Conservation Area Plan, increase the potential for disturbance. However, recreational activities in the NECO planning area, including motorized-vehicle travel, occur at low levels except on a site-specific, seasonal basis. Therefore, the potential for disturbances to vehicular camping in back country areas is also low. Further, with more than 4,700 miles of vehicle routes available for use, ample opportunity exists to select camping locations along less-frequented routes.

**Competitive Vehicle Events, Parker 400:** Although the California Desert Conservation Area Plan provides for competitive vehicle events in this corridor, it is unlikely that such events would be permitted in the future given past experiences with similar events (e.g., Barstow-to-Las Vegas motorcycle race), and the potential for adverse impacts to the desert tortoise and its habitat (see Section 3.8). It is anticipated that a finding of jeopardy by the U.S. Fish and Wildlife Service would be issued if such an event is proposed. With BLM's denial in 1990 of an application to use the California loop of the Parker 400 course, organizers moved the event in its entirety to Arizona, and have held it there since that time. The No Action Alternative leaves intact a competitive event corridor in which no events are likely to occur.

**Competitive Vehicle Events, Johnson Valley to Parker:** Although the “Check chase” using the Johnson Valley to Parker corridor last occurred in the 1980s, interest has recently been expressed to rekindle this or a similar event (American Motorcyclist Association, pers. comm.). This alternative



provides for such an event in the Johnson Valley to Parker corridor in accordance with conditions prescribed in the California Desert Conservation Area Plan and the Johnson Valley to Parker Motorcycle Race Environmental Impact Statement (see Appendix K). Absent a change in the circumstances which led to the establishment of this race corridor, it is assumed that permits for competitive off-highway vehicle events would be issued (see Section 3.8).

**Competitive Vehicle Events, Multiple-Use Class Guideline:** Outside the Parker 400 and Johnson Valley to Parker corridors, competitive events are allowed in accordance with Multiple-Use Class guidelines. Given the expanse of designated wilderness and critical habitat for the desert tortoise in the NECO planning area (see Maps 2-38 and 3-5), it would be problematic to locate a suitable race course that avoids sensitive areas. In addition, the review process under NEPA, especially if a “may affect” determination is made relative to the desert tortoise thereby triggering consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act, could require considerable time and result in an uncertain outcome. Planning for competitive events is, therefore, difficult at best and may discourage event sponsors from pursuing a special recreation permit under these circumstances.

**Rockhounding:** Under the No Action Alternative, existing motorized-vehicle access to rockhound collection areas would be largely retained (see Map 2-31 depicting the motorized-vehicle network of open routes under this alternative and Map 4-2 depicting Rockhounding areas). Hence, opportunities for this activity are largely unaffected.

**California Back Country Discovery Trails.** All routes identified as components of the California Back Country Discovery Trails system (see Section 3.8) would be available for motorized-vehicle use under this alternative. Hence, opportunities for travel on Discovery Trails, upon designation as such, would not be affected.

#### **From Issue 6: Land Ownership Pattern**

In most areas, access to private lands for recreational purposes is not restricted. Landowners, most of whom do not live on their properties, generally have not posted their lands as closed to the public. As such, implicit permission is often assumed by the general public to use these lands for recreational activities. Acquisition of private lands would ensure that use of them for recreational purposes would be considered in the scheme of public lands management. Conversely, disposal of public lands would affect opportunities for recreation if public access is precluded to these parcels. Whether such preclusion will occur is unknown.

#### **Summary of Impacts**

Increases of population in southern California and southwestern Arizona through the last half of the 20th century have been accompanied by greater demands for recreational resources, including use of what were once considered inhospitable regions of the NECO planning area. With these increased demands came conflicts between those who use vehicles as a means of access and those who operate vehicles as a recreational activity. In response to these emerging conflicts, preparers of the California Desert Conservation Area Plan established Multiple-Use Class guidelines which set the stage for managing all forms of

recreational activities in the California desert. Unrestricted vehicle travel on public lands was no longer allowed throughout most of the California desert. Instead, vehicles were restricted at a minimum to existing routes of travel, except in designated open areas. Along with restrictions on motorized-vehicle travel came limitations on where one could park and stop their vehicle, as well as where one could camp with it.

Opportunities for off-highway vehicle racing have also become increasingly constrained upon listing of the desert tortoise as a threatened species. Permits for such events as the Barstow-to-Vegas motorcycle race and the Parker 400 event have not been issued in California for more than 10 years.

Enactment of the California Desert Protection Act of 1994 further changed the picture for motorized-vehicle access with designation of 69 wilderness areas, 23 of which are located in the NECO planning area. As required by statute, casual use of motorized vehicles in wilderness is prohibited. At least 645 miles of motorized-vehicle routes were consequently closed to the casual recreationist in the planning area (see Table 2-12). Among the most notable of the impacts of wilderness designation to motorized recreation was the elimination of certain segments of the East Mojave Heritage Trail, a network of more than 600 miles of routes identified for vehicle touring by the Friends of the Mojave Road. No less notable was the reduction of Rockhounding opportunities as 25 percent of identified collection sites in the California Desert Conservation Area fell into newly-designated wilderness areas. Rockhounding relies heavily on motorized-vehicle access given the remoteness of many collection sites and the nature of the activity (see Section 3.8).

Enactment of the California Desert Protection Act also created the Mojave National Preserve managed by the National Park Service (formally the East Mojave National Scenic Area managed by the BLM) and expanded Death Valley and Joshua Tree National Monuments, thereby encompassing lands formally managed by the BLM. The National Monuments were also redesignated as National Parks in accordance with the Act. As a result of the legislation, an additional 25 percent of identified rockhound collection sites fell into these new and expanded areas managed by the National Park Service wherein rock collection is not allowed.

In general, recreational activities relying on the use of motorized-vehicles have become increasingly limited over the last quarter century. Under this No Action Alternative, approximately 5 percent of existing unpaved routes would be closed.

#### **4.1.10 Mineral Management**

##### **From Issue 2: Recovery of the Desert Tortoise**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place. Mitigation, compensation, and reclamation requirements are currently imposed and increase the cost of operations and also create time delays to gaining permits.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place. Limited surveys, mitigation, disturbance avoidance, and compensation are currently required. Most species mitigation and avoidance are aimed at operations which involve

cyanide and other hazardous materials, rare plants, bighorn sheep, and bats. Requirements are not consistent by place or among agencies and can create time delays.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

There would be a slight loss of access from closing non-routes which could affect casual mining activity. Authorized use of closed routes would be considered for authorized mining activities which would affect such activities to the extent of time and costs of gaining necessary authorization.

**From Issue 6: Land Ownership Pattern**

Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of mining rights in these areas.

**Summary of Impacts**

Over a period of several decades, access to minerals has been reduced from mineral withdrawals and the cost of mining from environmental considerations has increased. The bulk of initial withdrawals created military reservations and new units to the system of national parks. Most recently (1994) was the passage of the CDPA the major effect of which created a considerable amount of new BLM wilderness areas. Until 1994 access to and availability of mineral for development on BLM lands had been set in the 1980 CDCA Plan. Environmental considerations over the past 20 years, especially due to species and habitat listings and other environmental laws, regulations, and considerations has increased costs of developing the remaining available minerals. Uncoordinated land use planning and differing agencies' mandates add additional time delays and complexities to resolve.

Examples of minerals availability (by group) reducing effects of the CDPA throughout the California Desert are as follows (percent of BLM mapped mineral potential now withdrawn):

Construction (6 minerals):	3% to 98%
Industrial (24 minerals):	22% to 100%
Metallic (29 minerals):	45% to 90%
Energy (geothermal and oil/gas):	54% and 83%, respectively

This alternative would essentially not add any additional restrictions or requirements to what has already occurred through other initiatives.

**4.1.11 Cultural Management**

**Analysis Common to All Issues**

Under the No Action alternative, there would be no change to the Cultural Resources Element of the CDCA Plan. In 1980, BLM entered into a Programmatic Agreement with the California State Historic Preservation Officer which governs BLM's implementation of the CDCA Plan for cultural resources and provides processes for the resolution of effects on significant historic properties. The agreement forms the basis for cultural resources program activities, land management planning, and undertakings in the CDCA with regard

to Sections 106 and Section 110 of the National Historic Preservation Act. In this alternative, all undertakings will continue to be reviewed in consultation with the California State Historic Preservation Office under Section 106 of the NHPA, as implemented in the State Protocol Agreement Between The California State Director of The Bureau of Land Management And The California State Historic Preservation Officer (1998) and the Programmatic Memorandum of Agreement Among the Advisory Council on Historic Preservation, the Bureau of Land Management (DOI), and the California State Historic Preservation Officer Regarding the California Desert Conservation Area (1980).

### **From Issue 1: Standards and Guidelines**

The incorporation of National Fallback Standards and Guidelines in the maintenance and promotion of rangeland health is an administrative action that does not qualify as an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA). No historic properties would be affected by this amendment. There are no specific actions proposed for this issue. Subsequent actions that are proposed to meet the Standards and Guidelines might qualify as an “undertaking” under Section 106, such as placement of protective devices, water troughs, seeding, or other ground disturbing activities. Specific proposals would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

The Standards and Guidelines focus on protection and restoration of soils, riparian and wetland areas, streams, and native species. These areas also tend to be associated with historic and archaeological sites. Management proscriptions that promote the restoration of natural ecosystems, such as relocating water troughs away from springs and streams, encouraging the growth of native grasses to protect soil disturbance and inhibit erosion, and reducing continuous season-long livestock use, would also improve the preservation and protection of cultural resources. Cultural resources often occur in proximity to cultural resources, and damage to these resources is greatest in areas where cattle tend to congregate (Halford, 1999; Horne and McFarland, 1993). Relocating cattle away from locations where cultural resources occur would reduce impacts. The growth of native grasses, improvement of soils, and erosion control would help buffer and insulate cultural resources from impacts, as well as stabilize and preserve spatial, geographical, and cultural contexts that provide data essential to site analysis and interpretation.

### **From Issue 2: Recovery of the Desert Tortoise**

The No-Action alternative would continue current MUC class and ACEC designations and would maintain current levels of protection for cultural resources by limiting and conditioning activities that can occur in those areas. Proposals for fencing, bridge, or culvert construction to facilitate tortoise recovery would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

**Grazing Management:** Under the No Action alternative, there would be no change in current management practices. Grazing has occurred in the California Desert since the 19<sup>th</sup> Century. Our knowledge and understanding about the effects of livestock grazing on cultural resources is limited for the California Desert, but studies of grazing impacts on cultural resources have been reported for

other areas in California and the Great Basin. The primary impacts from grazing are damage to artifacts and site integrity resulting from the breakage, chipping, horizontal movement, and vertical displacement of artifacts, which compromises the context and information potential about discrete utilization areas of a site. Grazing impacts on cultural resources are greatest in areas where cattle congregate, around springs, water courses, troughs, shade zones, and salt licks (Halford 1999; Horne and McFarland 1993; Nielson 1991).

In the No-Action alternative, livestock grazing behaviors would continue to threaten cultural resources, including historic structures, archaeological sites and historic landscapes. Currently, our knowledge of cultural resources within the boundaries of the four allotments in the NECO planning area is limited. There are 160 cultural resources recorded within the boundaries of these allotments. There have been 121 cultural resources surveys reported within the allotment boundaries. Table 4-10 shows the number of recorded sites located within each allotment for each alternative.

**Table 4-10. Identified Cultural Resources within Grazing Allotments by Alternative**

Allotment	Type	Alternative			
		No Action	Proposed Plan	Small DWMA A	Small DWMA B
Ford Dry Lake	Sheep	63	0	0	0
Chemehuevi	Cattle	55	0	0	30
Rice Valley	Sheep	7	7	0	7
Lazy Daisy	Cattle	45	45	27	27
<b>Total</b>		<b>160</b>	<b>52</b>	<b>27</b>	<b>63</b>

Current cultural resources management policy is to analyze effects to cultural resources from grazing during the NEPA review of rangeland lease renewals and would continue in the No-Action alternative. New range improvements would continue to be reviewed at the time they are proposed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Actions specific to the management of special status animals, plants, and natural communities, that might affect cultural resources include: land acquisition and disposal; construction, improvement, and maintenance of natural and artificial water sources; and construction of animal enclosures. Under the No-Action alternative, Habitat Management Plans (HMP), as well as specific actions that are proposed through HMPs, such as the installation of water guzzlers, would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Under this alternative, the Ford Dry Lake and Rice Valley domestic sheep allotments would continue to operate within current boundaries. Both allotments currently encompass 135,247 acres of land. Seven sites are recorded within the Rice Valley allotment and 63 sites are recorded in the Ford Dry Lake allotment (Table 4-10). As with Issue 2, grazing behaviors that affect cultural resources would continue within these allotments and would continue to threaten cultural resources. There would be no substantial change in the level of threat or impacts to cultural resources from this alternative.

**From Issue 4: Wild Horses and Burros**

As with grazing, wild horses and burros can adversely affect cultural resources, especially artifacts and site integrity through breakage, chipping, horizontal movement, and vertical displacement of artifacts. Impacts would be greatest in areas where herds congregate around springs, water courses, troughs, bedding areas, and shade zones.

Under the No-Action alternative, herds would continue to be managed within the existing Herd Management Areas (HMA) which encompass an area of approximately 930,906 acres. Currently, there are 816 cultural resources identified within the existing HMAs, as shown in Table 4-11. As with Issues 2 and 3, grazing behaviors that affect cultural resources would continue within these allotments and would continue to threaten cultural resources. The threats and impacts would remain substantially unchanged from current levels.

There are no specific actions proposed in this plan for this alternative. Specific actions that are proposed to meet the standards may qualify as an “undertaking” under Section 106, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Future proposed actions would be reviewed in accordance with Section 106 of the NHPA in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

**Table 4-11. Identified Cultural Resources in HMA for Each Alternative.**

All Herd Management Areas	Alternative			
	No Action	Proposed Plan	Small DWMA A	Small DWMA B
Sites	816	399	0	403

**From Issue 5: Motorized Vehicle Access/Routes of Travel Designations**

Designating a route “open” in the CDCA generally authorizes casual and non-competitive use of route corridors for driving, parking, camping and other recreational activities. The corridor is defined in the CDCA Plan as an area that is 300' on either side of the route, creating a 600' wide Area of Potential Effect (APE) for cultural resources. In ACECs, this area may be limited to 100' on either side of the centerline (200' wide APE). These activities can adversely affect archaeological and

historic properties. Effects range from inadvertent destruction resulting from ground disturbance from tires, camping, and other uses, to increased access to sensitive sites resulting in looting and vandalism of artifacts, rock art, traditional cultural properties, and other features.

Under the No-Action alternative, current management prescriptions would continue. The vast majority of routes (95 percent) located in MUC Class L areas would be designated open. For MUC Class M and I, the majority of routes would remain undesignated, but available, for motorized vehicle use for the foreseeable future. Routes outside MUC Class L lands would be inventoried and designated in accordance with the CDCA plan. Cultural resources effects would be evaluated on a case-by-case basis for each route designation in accordance with the CDCA Programmatic Agreement and the Protocol. The No-Action alternative would result in no significant change in the use or availability of these routes for motorized vehicles, nor result in a significant reduction or increase in threats to cultural resources beyond the conditions that have existed over the past 60 years. Adverse effects to historic properties would be resolved in accordance with the CDCA Programmatic Agreement and the Protocol.

There are over 5,000 miles of routes identified on BLM lands in the NECO planning area. It is important to note that almost all of the routes in the CDCA were in existence at the time the CDCA Plan was approved, and many of these routes date back to at least the 1940s, when desert travel became popular with the advent and availability of four-wheel drive vehicles.

In order to characterize potential or on-going effects for the No-Action, information on existing sites located in the NECO planning area has been compiled from data available in the California Historic Resources Information System (CHRIS) and in BLM cultural resources records. All sites located within the Area of Potential Effect (APE) for "open" routes were identified. For planning purposes, sites were further categorized and delineated by National Register status (listed, determined eligible, or determined not eligible for inclusion on the National Register of Historic Places (NRHP)). Each site record was examined, and based on information and observations in the record, sites were characterized using the National Register criteria to make preliminary judgements about the potential for a site to qualify for inclusion on the National Register (See Code of federal Regulations, Title 36, Part 60, National Register Criteria). Sites were further characterized in terms of the probability that activities that would occur within the APE would be likely to adversely effect the qualities or values that would qualify the site for inclusion on the National Register.

For this alternative, 1,106 of the 3,305 cultural resources identified within the planning area would be located on BLM managed lands and would fall within the 600' wide APE for all routes regardless of proposed designation. For existing routes that would eventually be designated "open", there are 554 recorded cultural resources located within the APE. Of these resources, 184 sites have either been listed, determined eligible, or would be considered potentially eligible for inclusion in the National Register of Historic Places and 167 of these sites would be considered to have qualities and values that might be adversely affected by activities allowed to occur within the APE. Table 4-12 shows the occurrence of all sites and significant sites in relationship to the APE for each alternative.

**Table 4-12. Cultural Resources in the Area of Potential Effect, by Alternative<sup>a</sup>**

Cultural Resources within the Area of Potential Effect, by Alternative						
	No Action		Proposed Plan Amendment		Small DWMA A	Small DWMA B
	All Routes	Open Routes	Outside DWMA	Inside DWMA	Outside DWMA	Outside DWMA
Cultural Resources within APE (300')	1106	554	444	NA <sup>b</sup>	444	460
Cultural Resources within APE (100')	NA		NA	68	NA	NA
Total Cultural Resources within APE	1106	554	512		444	460
Eligible Cultural Resources (Estimated) <sup>c</sup>	NA	184	138	15	138	138
Eligible Resources Potentially Affected (Estimated)	NA	167	121	10	121	121
Cultural Resources Eliminated from Threats by Route Closure	0	552 <sup>d</sup>	594		662	646

<sup>a</sup> The Area of Potential Effect is defined for routes of travel designation as a corridor within which OHV activities are permitted. The width of the corridor is measured from the centerline of the route and varies between 30' and 300' depending on alternative. The APE applies to only those routes on BLM lands that will be designated "open".

<sup>b</sup> NA = Not Applicable in Alternative.

<sup>c</sup> Records for cultural resources identified as located within the APE of a route subject to designation were analyzed and resources were ranked in terms of potential eligibility and vulnerability to ground disturbing activities resulting from camping, parking off-road, hiking, etc.

<sup>d</sup> This would represent a cumulative total for known resources over the undefined period that routes are inventoried and designated. This figure does not represent an immediate elimination of effects. Protection would be realized only at the time of route closure.

**Competitive Off-Highway Vehicle Events:** Under the No-Action alternative, competitive off-highway vehicle events would continue to be allowed on competitive recreation routes established through the CDCA plan. Event-specific NEPA analysis would be required for competitive off-road vehicle events. Under the No-Action alternative, BLM would continue to review all projects for



effects to cultural resources in accordance with the CDCA programmatic Agreement and the Protocol at the time they are proposed.

The Johnson Valley to Parker Race Event has been previously analyzed for effects to cultural resources in an EIS for the proposed race in 1980 (BLM, 1980). In that assessment, the proposed route and alternatives were surveyed at the BLM Class II inventory level (reconnaissance). Several sites, as well as archaeological “districts”, were identified along the race corridor. The EIS indicated that site density was low along the corridor, but that cultural resources information for corridor was limited. There are approximately 205 linear miles of competitive off-highway recreation routes in the NECO planning area. At present, there are 18 archaeological and historic sites identified within 300 feet of the race corridor. These sites would continue to be threatened by race events under this alternative.

#### **From Issue 6: Land Ownership Pattern**

Under the No-Action alternative, adjustments to the land ownership pattern through acquisition and disposal of selected lands would continue. Lands identified for future disposal would continue to be evaluated for effects to cultural resources in accordance with the CDCA Programmatic Agreement and the Protocol. There would be no change in current management practices and no measurable effects to cultural resources in this alternative.

In the process of identifying specific lands for acquisition and disposal, biological factors are the primary considerations contributing to the decision. The criteria developed for identifying lands for the protection and conservation of special status species, such as lands with springs and water sources, may also coincidentally identify lands that are also associated with historic and archaeological sites. Acquiring these lands would result in greater protection for cultural resources. However, disposal of lands identified as having low qualities for habitat would not necessarily mean that those lands also have low values or qualities for cultural resources. Many sites, especially historic mining sites and sites associated with the World War II Desert Training Center / California-Arizona Maneuver Area were located for their associations with other factors, rather than specific biological and natural features. Springs and water sources would not necessarily be indicators for these types of sites.

#### **From Issue 7: Access to Resources for Economic and Social Needs**

There would be no change in current cultural resources management practices and no measurable effects to cultural resources in this alternative. No specific actions are identified in this alternative that would require review under Section 106 for effects to cultural resources.

#### **From Issue 8: Incorporation of Wilderness Areas into CDCA Plan**

Incorporation of the 23 Congressional designated Wilderness Areas into the CDCA plan would be an administrative action not subject to review under Section 106 of NHPA. Nevertheless, the designation of wilderness areas, while limiting ease of access and enjoyment to some cultural resources, would improve cultural resources protection and preservation by limiting a broad range

of activities, such as off-highway vehicles and mining, which often threaten and impact cultural resources.

#### **4.1.12 Lands and Land Use Authorizations**

##### **From Issue 2: Recovery of the Desert Tortoise**

Under the No Action alternative there would be little change to the current management practices of processing for land use application--i.e., utilities and rights-of-way. Applicable mitigation measures and compensation are currently required for new impacts to desert tortoises and its habitat according to current policy. On a case-by-case basis there may be additional costs borne by the proponent to implement other mitigation measures such as specific design features, possibly fencing and bridges and culverts when new construction projects are proposed.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural communities**

Under this alternative there would be little change to the current management practices of processing application for utilities and other rights-of-way. Habitat protection for special status species will continue to help define design and mitigation requirements for lands actions. Pre-project surveys, mitigation, and avoidance are required for some species.

##### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

There would be a slight loss of access from closing non-routes which could affect access to some private lands. Authorized use of closed routes or development of new routes would be considered for authorized actions including access to private lands where designated or existing routes are insufficient to meet needs.

##### **From Issue 6: Land Ownership Pattern**

Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of lands actions which currently cross mixtures of public and private lands.

#### **Summary of Impacts**

Over a period of several decades, access to and across public lands for various lands and rights-of-way has been reduced due to withdrawals of public lands from the application of land laws. Permits processing and mitigation costs have also increased due to an increase in environmental issues as well. There are fewer opportunities for trans-desert transmission and pipelines as a result of military reservations, national parks, and BLM wilderness areas; however, undeveloped portions of existing corridors should still be sufficient to absorb additional needs for the foreseeable future. Species issues will continue to increase as well. Land ownership consolidations should simplify legal aspects of access for rights-of-way and development of private lands. Uncoordinated land use planning and differing agencies' mandates add additional time delays and complexities to resolve. Beyond what is noted above this alternative would essentially not add additional restrictions or requirements to what has already occurred through other initiatives.

#### 4.1.13 Socio-Economic Values

##### **From Issue 1: Standards and Guidelines**

Impacts from this issue would affect those lessees and their employees that direct grazing activities on public lands within grazing allotments. There would be no social impacts from implementation of this alternative. Grazing lessees and their employees would be challenged to invest personal energy and time to operate cattle or sheep operations in accordance with the National Fallback standards and guidelines for grazing management. Current resource conditions on the four allotments indicate that cattle and sheep grazing activities were not a factor in failure to achieve standards.

The economic impacts from implementation of this alternative would not be felt by the lessees of the Rice Valley and Ford Dry Lake Allotments. These two sheep allotments have been found to be within standards. The limited manner and degree sheep presently graze allotments would not invite changes in grazing management. There could be other influences such as a weed infestation that would affect the standards, but it would not be directly related to grazing of domestic sheep.

There would be no economic impact from implementation of this alternative for the Chemehuevi Allotment if it were active. This vacant allotment has not been active for many years, and the last time it was active, 15 cattle grazed for one month in 1989. Prior to 1989 grazing activity was fairly limited. The immediate and surrounding area of West Well did not meet the wetland-riparian standard due to excessive burro use of surrounding vegetation, and in large part, because the area around West Well was infested with tamarisk. Cattle grazing is not a factor in the failure to meet the standard.

The economic impact to the lessee of the Lazy Daisy Allotment from continued implementation of this issue under the No Action Alternative would be insignificant because all standards have been achieved in the Lazy Daisy Allotment. There would be no detectable costs as long as all standards continue to be met within the current application of year-long grazing use (Runyan).

However, if it were found that standards were not met in the Lazy Daisy Allotment, there would be increased time for the lessee to coordinate with the BLM about modifications of cattle use. Modifications of grazing would include, but is not limited to additional costs associated with movement and increased supervision of cattle, and over several years, extra effort and costs associated with maintenance of more range facilities would be realized. However, the Lazy Daisy Allotment is rated in good range condition and based on the past reduced grazing use this condition class would be maintained with the lessee's voluntary reductions in AUMs.

Costs associated with constructing new or refurbishing older range improvements would have to be borne solely by the lessee or through cooperative efforts, costs could be split with the BLM, county, and other contributors to substantially or totally defray all costs. A lessee would incur increased costs to feed or find pasture for grazing if cattle must be removed from that portion or all of the allotment to achieve standards. However, as rangeland health is maintained or improves, and resource objectives for grazing use are achieved, greater benefits are realized with the addition of operational flexibility.

### **From Issue 2: Recovery of the Desert Tortoise**

This alternative would not economically affect the Chemehuevi Allotment or the lessee. Costs associated with additional range facilities would be borne through cooperative funding.

The lessee for the Lazy Daisy Allotment would be economically impacted with the expectation to contribute all/or a portion, depending on available funding sources of the actual cost related to new range improvement construction (estimated to be \$62,960). As the lessee's portion of actual costs for range improvement rises, it would become increasingly difficult for the lessee to maintain his portion of funding based on the past averaged grazing use of 112 cattle while the authorized grazing use is 266 cattle. Based on a 1993 study about rangeland cow-calf operations, the gross income from grazing a herd of cattle ranging in size from 112 to 266 is from \$47,824 to \$113,582, respectively (Nelson). The lessee would be impacted by additional coordination with the BLM prior to construction and during installation of this improvement. The lessee's grazing management efforts in desert tortoise habitat would not be impacted by mitigation measures shown in Appendix C.

Grazing fee receipts as prescribed under the Taylor Grazing Act are distributed to the county's range improvement fund from the federal treasury. A reduction or increase of AUMs would reduce or increase grazing fee revenue. Under this alternative no reduction is planned. The state of California has an assessment on grazing leases called the Possessory Interest Tax. Grazing leases are seen as the private right to the possession and use of publicly-owned property which has value. The tax is assessed on AUM value as calculated by each county (BLM, 1997). Lazy Daisy and Chemehuevi Allotments are located in San Bernardino County, and Rice Valley and Ford Dry Lake Allotments are located in Riverside County. The Chemehuevi, Rice Valley, and Ford Dry Lake Allotments are ephemeral allotments and do not annually produce perennial forage, in fact, the BLM seldom authorizes use of ephemeral forage. However, the lessee for the Lazy Daisy Allotment permitted use is and would be 3,192 AUMs, Nevertheless, Lazy Daisy has been using about 1,500 AUMs annually or less than half this permitted amount. It is not known how many lessees pay possessors tax nor if it is large part of their operating overhead.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

The current socio-economic impacts to lessees of the Rice Valley and Ford Dry Lake Allotments would not change.

As there are few mitigation requirements to permits from other species, there would be little future impacts unless the sensitive status of some of these species were to change (become more sensitive or listed). Proposals for bighorn sheep/desert mule deer artificial waters would continue to be processed on a case-by-case basis which has proven to be costly (time) and has created a difficult to resolve tension among BLM, CDFG and other interests.

**From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

The closing of 239 miles of routes amounts to less than 5 percent of the 4,982 miles of unpaved routes. In addition, 645 miles of routes in wilderness areas were closed by CDPA of 1994 representing about 13 percent, and bringing the total closed to about 18 percent of unpaved roads. This would still allow motorized vehicle travel on 4,743 miles of routes and many more miles of washes that are not in washes closed zones. This would have a minor effect upon casual use access and recreational routes.

**From Issue 6: Land Ownership Pattern**

Acquisition of private lands and disposal of federal lands to achieve a simplification of the land ownership pattern would help both manageability of federal lands and usability of private lands. For both this is a more cost effective pattern of ownership; however, the initiative would not be completely comprehensive and strategic from a conservation point of view and would still leave a difficult to manage land ownership pattern. Federal costs for these transactions would be minimized by land transfer, where prudent.

**Summary of Impacts**

Implementation of this No Action Alternative continues a certain cost of doing business that is inefficient, and, while creates little near-term change, risks long-term measures which have unknown draconian socio-economic implications if more species are listed as a result of a lack of a clear strategic conservation approach to species and habitats management. The current inefficiency mainly relates to the incomplete and case-by-case basis of addressing the consideration of species and habitats needs: conservation, compensation, mitigation, NEPA writing, and consultation with the USFWS.

Changes to the management of grazing leases and designation of routes of travel create additional minor impacts access and use of resources.

## 4.2 Proposed Plan

This major section discusses the environmental consequences of the Proposed Plan in sub-sections for the resource areas identified in Chapter 3. Within each sub-section, issues relevant to that resource are discussed and are followed by a summary of impacts for the resource.

### 4.2.1 Air Quality

Activities such as OHV use, authorized uses, and mineral exploration are affected by the plan amendments. The effects will further change the amount and location of air quality effects both locally and regionally.

Factors considered in determining significance of effects include:

- Applicable state or federal ambient air quality standards. Both federal and state standards have been established for criteria air pollutants.
- An action would have a significant effect if it: (1) violates any ambient air quality standard, (2) contributes substantially to an existing or projected air quality violation, (3) exposes sensitive receptors to substantial pollution concentration, or (4) creates objectionable odors.
- Additional criteria establish significance for specific sensitive air sheds, such as certain national parks and wildernesses (in accordance with federal prevention of significant deterioration requirements).
- The entire NECO Planning area, as well as much of California, has been designated as federal non-attainment areas for PM<sub>10</sub> and Ozone. Consequently, the impacts analysis must consider an additional requirement. Under the Clean Air Act (176(c)) and 40 CFR part 51 subpart W, a federal agency must make a determination that a federal action affecting such air sheds conforms to the applicable state implementation plan. A state implementation plan has been developed for PM<sub>10</sub>.

Particulate matter (PM<sub>10</sub>) is the only air pollutant likely to be affected by the Proposed Plan. Exposed bare ground is sensitive to wind erosion; a significant source of particulate matter. Overall, PM<sub>10</sub> emissions will diminish in the planning area with all alternatives as the mileage of unpaved roads is reduced from the closure of some roads and private lands are acquired in areas of sensitive habitats. These would add to reductions that occurred in 1994 when approximately seven million acres of land were transferred into wilderness areas and national parklands and previously existing roads were closed entirely (wilderness areas) or partially (non-wilderness parklands) and mineralized areas became unavailable for mineral development. The Proposed Plan and two Small DWMA alternatives would result in further reductions in PM<sub>10</sub> emission in the planning area due to DWMA prescriptions, particularly the surface disturbance limitations. The beneficial effects of reducing PM<sub>10</sub> emissions is due primarily to: (1) greater efforts to rehabilitate disturbed areas, (2) closure of washes, (3) narrowing down the distance from the centerline of roads for stopping/parking/camping from 300 to 100-feet, and (4) location of new disturbance areas would be located closer to existing disturbance areas, thus reducing the vehicle miles. There could be additional small contributions to reductions of PM<sub>10</sub>

emissions in these alternatives through reduction in grazing, mitigation measures that would be applied to WHMAs, and closing the small OHV open areas on Ford Dry Lake and Rice Dunes.

The impacts of alternatives on air quality, when added to other past, present, and reasonably foreseeable future actions, would not significantly reduce air quality. Actions approved under the NECO Plan will not exceed *de minimis* levels.

#### **From Issue 1: Standards and Guidelines**

For the Proposed Plan, regional standards for public land health and guidelines for grazing management would be adopted. These regional standards would apply on an area-wide basis rather than just grazing allotments. Applying these regional standards the entire planning area would improve air quality more than the No Action Alternative.

#### **From Issue 2: Recovery of the Desert Tortoise**

The designation of approximately 1,684,248 acres of federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA reduces the amount of grazing by 158,928 acres and designates routes as open, closed or limited. The reduction in surface disturbance would increase vegetative cover on these acres, leading to less wind erosion and reducing the volume of PM<sub>10</sub> emissions.

Restricting surface disturbing activities to 1 percent of the DWMA's potentially benefits air quality by reducing the amount of erosion and airborne pollutants such as PM<sub>10</sub>. Additionally, requirements for vegetation restoration on disturbed sites will have positive benefits to air quality by adding vegetation cover.

Wildfire suppression efforts would result in reduced particulate (PM<sub>10</sub>) production and visibility impairment from smoke and wild-blown dust. Short term impacts from fire suppression potentially would increase levels of particulate from surface disturbance of fire fighting equipment and operations. Fire fighting efforts would use minimal ground distributing techniques such as aerial fire suppression and ground crews with hand tools. Successful fire suppression efforts minimize the number of acres burned, and result in less vegetative loss, and thereby, less wind erosion of particulate matter.

#### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Air quality would be enhanced by limiting future off-road vehicle activity to existing roads and trails. Other competitive off-road vehicle activities are restricted to the Johnson Valley to Parker corridor or other outside corridors if they meet the criteria. Competitive off-road vehicle activity has the potential to produce airborne particulate matter (PM<sub>10</sub>), especially if events are conducted in areas where soils are susceptible to erosion. NECO planning area is in a federal and state non-attainment area for PM<sub>10</sub> and ozone, events would further contribute to these pollutants.

With the deletion of Rice Valley and Ford Dry Lake Open Areas there is a positive benefit to air quality because of the reduction of airborne pollutants.

#### **4.2.2 Water Quality**

##### **From Issue 1: Standards and Guidelines**

Adoption of the regional standards for public land health, and guidelines for grazing management will generally improve water quality from natural sources similar to No Action Alternative in grazing allotments. Water resources outside of allotments would derive a slight positive effect on water quality with implementation of Best Management Practices.

##### **From Issue 2: Recovery of the Desert Tortoise**

The designation of approximately 1,684,248 acres of federal land as ACECs would have a slight positive effect on water quality through implementation of specific management prescriptions designed to improve water quality and reduce surface disturbance. The reduction of livestock grazing and surface disturbing activities would improve vegetative condition and consequently result in better protective ground cover and soil-holding capability. Erosion and soil loss would be reduced and water quality improved as a result of better dissipation of energy associated with storm water runoff.

Loss of forage use on 217,873 acres would result in improvement in water quality at spring sources through removal of coliform bacteria contamination from cattle. There would continue to be contamination at those springs within the open parts of the allotment.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Designation of a 80 percent distribution WHMA will have a small positive benefit to water quality through the implementation of specific prescriptions aimed at improving habitat condition.

Closure of routes within 1/4 mile of a natural or artificial water source will have a small positive benefit to water quality by reducing soil erosion, soil loss and sedimentation contamination.

Improving vegetative conditions on natural communities such as springs and seeps, dunes and plays and microphyll woodland would have a positive benefit to water quality by improving protective ground cover and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized improving water quality.

##### **From Issue 4: Wild Horses and Burros**

Some water resources outside the designated (HMAs) Herd Management Areas would benefit from the reduced burro activity. Water resources can be impacted through soil compaction and the reduction of vegetative and plant litter that reduces water infiltration and increases storm water runoff



and erosion. Additionally, the water quality at some springs would improve with the removal of burros by the reduction in coliform bacteria contamination.

### **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

#### **4.2.3 Soil Quality**

##### **From Issue 1: Standards and Guidelines**

Adoption of the regional standards for public land health, and guidelines for grazing management are similar to the No Action alternative where grazing continues. Implementation of standards throughout the planning area would result in additional management emphasis to modify soil disturbing activities with the ultimate goal of increasing plant litter and soil organic matter, providing adequate infiltration and appropriate permeability of soils, and maintaining microbiotic crusts. The standards would be implemented through results from a series monitoring and field assessments for all soil disturbing activities.

##### **From Issue 2: Recovery of the Desert Tortoise**

Under the Proposed Plan impact to soils would be similar to the No Action Alternative, but there would be tangible differences associated with designation of the ACECs that would preclude or limit use. The designation of approximately 1,684,248 acres of federal land as ACECs would impact soil quality through implementation of prescriptions aimed at improving habitat conditions and reducing impacts from surface disturbing uses.

Loss of forage use on 158,927 acres would improve soil quality by maintaining living and dead standing vegetation and resulting litter on a site where that material was previously removed by grazing animals. Protection of soil from accelerated erosion can occur with the addition of vegetative cover and litter. There would be improvement in water permeating soils at springs and seeps where vegetation was not previously able to reach maturity, to reproduce, and established a full root system. Improved water penetration would reduce overland flow of water and reduce soil erosion by storm water runoff. Since there are few natural springs in the allotments being closed, improvement of soil quality from these areas is limited when compared to the surrounding uplands.

Soil disturbance would occur during development of range improvements in the Lazy Daisy Allotment. The impact of development of range improvements in the Proposed Plan would be similar in types and amounts of impacts of the No Action Alternative. When compared to the No Action alternative, the Proposed Plan would construct an additional 12½ miles of fence and 2 cattle guards to improve cattle distribution, exclude grazing use in areas, and to meet standards. There would be an impact to soils from compaction and disturbance above that described in No Action Alternative for additional fence and cattle guards. Additional disturbance and compaction would occur for hauling equipment, personnel, and materials to the proposed work site for the additional 12½ miles of fence and the additional 2 cattle guards. About 60 percent of the impacts would be recovered in

five to ten years and with the remainder of impacts taking several years more. Some impacts from compaction would be offset when cattle modify current trailing to existing facilities to new facilities. Cattleguards placed along existing or proposed fences in the road would result in negligible impacts after five years to the surrounding soil.

Limiting surface disturbing activities to one percent inside the DWMA's would have a positive impact on soil quality. Improvement in soil quality would occur through natural restoration of plant communities for areas where past mining, grazing, off-road vehicles, and road building activities have been precluded.

Under the Proposed Plan, there would be 208 miles of tortoise fence installed along roads and highways (see Table 2-7). The construction of 208 miles of tortoise fence would result in a large areas of soil surface disturbance, soil compaction, and soil movement. However, installation of tortoise fence would be an integral part of roadway construction and would be covered by a site specific environmental analysis prior to construction of the road and fence.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Designation of WHMA's will have a small, but discernable impacts to soil quality by through the implementation of specific prescriptions aimed at improving habitat condition that would further stabilize-soils.

Improving vegetative conditions for natural communities such as springs and seeps, dunes and playas, and microphyll woodland would benefit soil quality by improving protective ground cover, water holding capacity, and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized.

The Ford Dry Lake Allotment has not been used since 1997 and before that 500 sheep grazed in the fall of 1979. In the spring of 1998, 2,700 sheep grazed Rice Valley Allotment and before that 2,600 sheep grazed during the spring of 1992. Based on the records, sheep spent very little time on these two allotments, rainfall was above average, and forage production was high. Soil disturbance and compaction were localized around bedding and watering sites. Sheep grazing through an area in a scattered fashion away from or toward bedding or watering sites produce limited compaction or disturbance. On some heavier soils, it is difficult to detect that sheep have grazed the area. Consequently, the duration between grazing activity and the limited amount of grazing use when it did occur, means the loss of sheep use on 58,946 acres of Ford Dry Lake and Rice Valley Allotments would eliminate very few impacts.

For the Proposed Plan, there are 87 proposed artificial water developments for bighorn sheep and deer. Impacts to soil quality by each improvement are analyzed under the No Action Alternative. This alternative would remove and abandon some artificial water sources including nine defunct windmills and some high-maintenance pipe-tank facilities. The addition of 87 improvements and removal of several others would impact soil quality on about 2.5 acres. The isolated nature of these

new sites, smoothing excess soil to surrounding gradient, and the protracted installation period would limit soil movement from these sites.

**From Issue 4: Wild Horses and Burros**

Burro trails occur throughout the HMAs but are concentrated near water locations. Trails are typically void of vegetation and, depending on type of soil surface (sandy loam, gravel, cobbles and rock), may have exposed soil substrate. The majority of the trails would have a width of approximately 14-inches. Upland water holes are typically associated with exposed or very shallow bedrock in dry washes. Desert washes are generally sandy. Sandy soils are not susceptible to compaction. They are, even under pristine conditions, susceptible to erosional forces. Upland soils prevalently contain gravels and cobbles, preventing soil loss and armor against compaction.

In some areas along the shore line of the Colorado River, where burros have continuously used the same trails over the years, soil loss can range from 1 to 6 inches below the soil surface, dependent upon the slope of the bank (i.e., confluences of Julian Wash (Cibola-Trigo HMA) and Trampus Wash (Havasut HMA)). These trails have been subject to periodic flood events, in which the stream bank stability has been maintained. Another location is at Arrowweed Spring, where burros have dug water holes when the water table is high enough for them to access water. These holes are located in the wash along a sandy loam shelf that has shown slight surface erosion after a flood event. The level of sedimentary loss has not been measured.

Dust wallows (dust baths) created by burros are evident throughout the HMAs as areas cleared of gravel and cobbles on flat areas. An adult animal may create a dust bath measuring 6 feet by 6 feet. Field observations have not recorded any areas where dust baths have shown to attribute to erosion.

No surface or rill erosion due to the reduction of vegetation and plants by burro grazing has been recorded in field monitoring data (Rangeland Health Determination for the Chemehuevi Valley Allotment, 1999), utilization studies, or observations (field notes).

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Soil quality would be improved by limiting future off-road vehicle activity to existing roads and trails. Competitive off-road vehicle activities are restricted to the Johnson Valley to Parker corridor (and other corridors if they meet all the criteria). Competitive off-road vehicle activity has the potential to impact soil resources through disturbance of soils, which leaves them vulnerable to soil erosion.

With the deletion of Rice Valley and Ford Dry Lake Open Areas, there would be a positive benefit to soil quality because of the reduction of soil disturbance. The soil resource is expected to benefit through the preservation of areas presently undisturbed.

Under the Proposed Plan there are 4,743 miles of routes available for vehicle use. Assuming the average route is 12 feet wide (Ira Long, BLM, pers. com.), there are about 6,900 acres for vehicle

activity in the planning area. Impacts to soil quality are similar to those listed under the No Action Alternative.

### **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

#### **4.2.4 Biological Resources**

The discussion of the environmental consequences of the Proposed Plan for biological resources has been subdivided into Wildlife Management and Vegetation Management.

##### **4.2.4.1 Wildlife Management**

###### **From Issue 1: Standards and Guidelines**

Impacts associated with adoption of the Regional Standards of Public Land Health rather than use of the existing National Fallback Standards, and adoption of Regional Grazing Guidelines rather than fallback Grazing Guidelines, would be similar to those impacts described for the No Action Alternative. Regional Standards and Guidelines are more specific (addressing litter production, age distribution, cover, and other community attributes), and directed at desert resources. Regional Standards would be more sensitive than the National Fallback Standards to changes in the plant forage and cover base and to population changes of special status animals. In the long term, under properly managed rangelands, animal species abundance and diversity would be stabilized or increased as all standards are attained.

###### **From Issue 2: Recovery of the Desert Tortoise**

**Desert Tortoise:** This Proposal Plan would establish large Desert Wildlife Management areas (DWMAs). Management actions proposed for these DWMAs would reduce impacts to tortoise populations and habitat. The establishment of the Joshua Tree DWMA would not change management in JTNP. Under all alternatives (except the No Action), restrictions and management policies in the desert tortoise Rangeland Plan and Statewide Plan for Category I would be applied directly to the DWMAs.

Table 4-13 shows the size of both the Chemehuevi DWMA and the Chuckwalla DWMA and the amount and percent of critical habitat for the desert tortoise that would be included in each DWMA. The percent of critical habitat in all DWMAs would be about 76 percent in this Proposed Plan. Both DWMAs would be considerably above the minimum size recommended (640,000) in the Desert Tortoise Recovery Plan.

**Table 4-13. Area of DWMAS and Critical Habitat for Desert Tortoise**

Desert Tortoise	Chemehuevi DWMA	Chuckwalla DWMA	JTNP, CMAGR, wilderness, DWMAs
Total size, in acres	888,636	798,338	
Critical Habitat Acres, in acres (and % of total critical habitat in planning area)	813,200 (35)	785,550 (34)	1,778,532 (76)

In this alternative, habitat restoration efforts would be increased, resulting in improved habitat conditions for tortoise in previously disturbed areas. Public education programs would be enhanced, leading to greater understanding by the public of the detrimental effects of vandalism, shooting of tortoises, and collecting of tortoises. Mechanisms for improved interagency cooperation would be established, leading to improved law enforcement, raven predation management, research, and monitoring programs.

Overall, surface disturbance in DWMAs would be reduced by limited to one percent. Although new surface disturbances are not expected to reach the 1 percent level for decades, the limitation would increase the BLM’s emphasis on minimizing disturbances in DWMAs to the extent possible and on ensuring that post-project rehabilitation is effective. Fixing compensation at 5:1 in Category 1 (i.e., DWMAs) would not be a significant change from the current formula where compensation in Category I ranges from 3:1 to 6:1.

The loss of grazing from the highest density tortoise habitat in the Lazy Daisy Allotment would reduce the amount of tortoise and burrow trampling and forage competition, known to occur during years of low rainfall when cattle may eat scarce annual forage (Avery 1998). The lack of ephemeral grazing authorizations in years of abundant ephemeral plants and seasonal closure of grazing in the DWMA in years of low annual production (i.e., less than 230 lbs./ac.) would eliminate competition for annual forage. In addition, vegetative cover would improve as plants reach their growth potential. Some grazing in the DWMA and critical habitat would continue, but it would be in areas of lower tortoise density. The allocation of cattle use for the tortoise in the area of Chemehuevi Allotment would only slightly reduce these same impacts because the allotment is only rarely grazed (not for more than 10 years) and by only a few cattle over a large area. Other grazing restrictions would further reduce tortoise mortality and forage competition.

The fencing of 208 miles Interstate Highway 10 and 40 through or alongside DWMAs and portions of State Highway 95 would reduce tortoise run-over mortality greatly and allow natural restoration of depleted populations along these highways. The negative effects of population fragmentation on population genetics would not be a concern for more than a century due to the long tortoise generation time (>20 years). The small amount of interchange needed for genetic viability would presumably be satisfied by movements under bridges and through culverts. The reduction in all wildlife roadkills (especially snakes, lizards, rodents, and rabbits) would also reduce raven food supplementation and, hence, mortality of eggs, hatchlings, and juvenile tortoises.

Boarman (1995) surveyed the effect of fencing along highways on road kill of vertebrates. He selected a 24-km segment of Highway 58 that had tortoise proof fencing and compared that to an unfenced 24-km segment of Highway 395 and 4.8 km of unfenced Highway 58. On four reported surveys a total of 1190 carcasses of 31 species (13 reptiles, 8 birds, 10 mammals) were found along the highways. During four reported surveys, between 1992 and 1994, an average of 37.8 carcasses per km were found along unfenced highway and only 4.3 carcasses per km (102 in 24 km) were found along fenced sections of highways. Surprisingly, individuals of leopard lizard (2), zebra-tailed lizard (2), and antelope ground squirrel (2) were found only along the fenced portion. Six species of snake (of only eight species recorded) were found only on the unfenced portions. Also, surprising is that seven species of birds also had reduced mortality on fenced portions of highway, perhaps due to the reduced road kill on the roadway. Tortoise mortality was 1.2/km (35) along unfenced highway and <0.1/km (2) along fenced highway. The conclusion is that fencing of roadways greatly reduces road kills of many vertebrate species.

Fenced highways will require culverts or underbridges to allow the movement of individuals across the highway for genetic interchange and population dispersal. Boarman (1995) also reported on the use of culverts by tortoises along the highways described above; results were inconclusive due to the low numbers of tortoises near the highways. Additional studies would be needed to assess the overall population fragmentation effects of fencing and culverts combined. However, the mortality along even fenced highways indicates that some animals are crossing the barrier.

Some direct mortality resulting from animals caught in the fence has been observed. Animals caught included leopard lizard (1), western whiptail lizard (5), zebra-tailed lizard (1), coachwhip snake (3), and Mojave rattlesnake (1). These mortalities and other observations of behavior by Boarman indicate that primarily lizards may become caught in the fence.

Raven predation on desert tortoise hatchlings and juveniles has been well documented; Boarman (1999) reviewed the published and unpublished records. Censuses have shown that raven populations are substantially higher than 30 Years ago (Knowles et al. 1989). With a removal program targeting nesting ravens that are known to prey heavily on young tortoises (as evidenced by tortoise carcasses under the nest), excessive raven predation on juvenile and hatchling tortoises would be reduced. This would aid in increasing recruitment of young tortoises into the population. This would be especially important in populations that are below habitat carrying capacity due to other factors such as disease.

Land acquisition in DWMA's would depend upon the availability of funding for purchases and exchanges. Some additional funds would be available from compensation for disturbance of a few natural communities (i.e., Desert Dry Wash Woodland, Chenopod Scrub, Sand Dunes, Playas); however, the low level of disturbance anticipated would produce little compensation funding.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Bighorn Sheep:** The management actions intended to achieve the bighorn sheep goals and objectives would be based on the establishment of two bighorn sheep WHMA's consisting of all

“occupied habitat,” “movement corridors,” and “Unoccupied former range.” Table 4-14 shows the acres and percent for the two bighorn sheep each WHMAs and the two DWMA. A total of 23 percent of the occupied range lies within the proposed DWMA; some of this includes BLM wilderness as shown in the Proposed Plan and Table 4-1 for the No Action Alternative. Specific differences in impacts between No Action Alternatives are described below.

**Table 4-14. Area and percent of area for Bighorn Sheep Use in DWMA and Bighorn Sheep WHMA areas for the Proposed Plan**

Bighorn sheep use categories	Chemehuevi DWMA		Chuckwalla DWMA		Bighorn WHMAs
	Acres	Percent	Acres	Percent	Acres
Occupied Range	186,327	11	269,384	16	1,716,132
Unoccupied Former Range			1,855	1	232,282
Movement Corridor	223,975	37	26,093	4	601,327

Benefits of designation of the Multi-Species WHMA would be similar to those described for natural communities in Section 4.2.4.2. In addition, priority for acquisition of lands would be increased; as lands are actually acquired, the likelihood of surface disturbing development would decrease.

The deletion of all bighorn habitat management plans would have no significant effect because the actions in these plans are fully implemented, and the actions proposed in this alternative would provide more protection and enhancement of habitat.

Fencing of potential hazards (e.g., mine shafts) to bighorn sheep would decrease mortality from accidents and aid in stabilizing demes.

The proposed augmentation of six demes in all the alternatives would aid in establishing stability and minimum size of individual demes and, thereby, viability (i.e., long-term persistence) of the metapopulation on a whole. Similarly reestablishment of three lost demes in the Sonoran Metapopulation would increase the number of demes and, thereby, increase viability of the metapopulation. Domestic sheep use would not be allowed within a nine-mile buffer zone around existing or reestablished demes would guard against disease transmission and an epidemic that could decimate nearby demes.

The addition of 87 new water developments (Map 2-19 Appendix A) for the Sonoran Bighorn Sheep Metapopulation (29 for bighorn sheep only and 58 for burro deer and bighorn sheep dual use) would provide a greater distribution of bighorn sheep within the “occupied range.” That is, the installation of new waters would give access to additional forage more distant from existing waters. With more food and water available bighorn sheep and deer, the number of bighorn sheep in each deme would increase. Increased population size would increase the stability and viability of individual demes and, thereby, the longer-term viability of metapopulation as a whole. Comparing an artificial water site

to a dry site, Cutler and Morrison (1998) found that rodent and reptile populations were affected little, but bird and amphibian abundance and species richness were higher at the watered sites.

The need for drinking water and the utility of artificial water developments have been the focus of some research and much contention in land management in recent years. McCarty and Bailey (1994) reviewed some of the literature on bighorn sheep need for and use of drinking water. Andrew *et al.* (1999) found in a study area in the southeast corner of the planning area that a population of bighorn sheep experienced a severe drought between 1995-1998. During this time, isolated water sources dried up and access by bighorn sheep to the Colorado River was severely restricted. The bighorn population declined from about 160 to less than 50 during this period. They concluded that drinking water sources were a necessary habitat feature in the study area.

Water developments would be designed as generally described in Appendix M. No new waters are proposed at this time for the Southern Mojave Bighorn Sheep Metapopulation.

Closure of some routes near natural or artificial water sources would reduce disturbance of bighorn sheep at these critical sites. Jorgensen (1974) found that a desert water source was used 50 percent less on days with vehicle traffic.

**Burro Deer:** The addition of 108 new water developments (Map 2-19 Appendix A) for burro deer (50 for deer only and 58 for deer and bighorn sheep dual use) would provide for a larger distribution of deer within their range, especially for does and fawns which stay closer to water. With the addition of new waters, there would be greater access to additional forage more distant from existing waters. With more food and water available (i.e., accessible), the number of deer would increase to the extent that other essential habitat elements (e.g., cover) are present. Increased population size would increase the overall deer population viability. Disturbance from watering sites would be reduced by closure of routes near water developments.

**Other Special Status Species:** Benefits of designation of nine Multi-species WHMA are similar to those described for natural communities. In addition, project related inventories for special status animals would occur in the conservation zone resulting in additional information on the distribution and habitat use of special status animals. Lands would be acquired in the conservation zone, reducing the likelihood of surface disturbing development.

Bat gates constructed on caves and shafts where bats might be harmed would give needed protection against disturbance at critical sites. The withdrawal from mining of some large bat roost sites would prevent destruction from mining. Route closures near some significant bat roosts would reduce the likelihood of disturbance at a critical roosting, nursing, or hibernation site.

Disturbance of prairie falcons and golden eagles at eyries would be reduced by closure of routes and reductions in mining and other disturbances near the eyries. Increased monitoring of eyries would aid in preventing disturbance. Elf owl habitat at Corn Springs would be enhanced by improvements to habitat and removal of European starlings that compete with hole-nesting birds for nesting sites. Disturbance of burrowing owls during the critical breeding season would be reduced seasonal restrictions on projects.



Couch's spadefoot toad would receive additional protection from mitigation measures, permanent fencing where necessary, and closure of some routes near habitat. Compensation requirements at 3:1 will discourage surface disturbance in Desert Dry Wash Woodland and aid in habitat acquisition for Couch's spadefoot toad.

Closures of certain dunes to cross-country travel would reduce disturbance of habitat of Mojave fringe-toed lizard. Compensation requirements at 3:1 in Sand Dunes would discourage surface disturbance in dunes and aid in habitat acquisition. The closure of Ford Dry Lake and Rice Valley to cross-country vehicle use would reduce surface disturbing impacts to wildlife.

A compensation requirement of 3:1 in Desert Dry Wash Woodland would discourage development and aid in habitat acquisition, thereby aiding riparian-obligate special status species.

#### **From Issue 4: Wild Horses and Burros**

**Desert Tortoise:** Eliminating of burro grazing would have a positive effect on tortoises over the long term by reducing competition for forage and trampling of vegetative cover. Areas with past overgrazing would be allowed to recover which would increase the amount of forage and cover for desert tortoise.

**Bighorn Sheep:** The degrading of water sources and displacement of bighorn sheep by burros would be reduced by the fencing of 1/3 of the natural waters within occupied range. Some of the additional waters fenced for deer (1/3 of natural waters) might be in occupied range also or in movement corridors. Cleary (1973) showed that burros can be excluded from a water source and forced out of an area by fencing the water sources. Protective fencing would likely be according to the design described by Andrew *et al.* (1997). Additionally, competition for forage and trampling of soil and denudation of vegetation would decrease as burros left areas outside the herd management areas where water would not be available to them. Table 4-15 shows the acres and percent of bighorn areas within herd management areas. The table shows that the acres and percent of bighorn sheep range within burro herd management areas for burros would be much lower than in the No Action alternative. Specifically, the percent of occupied range within herd management areas would decrease from 19 percent to 11 percent, and the percent of movement corridors within herd management areas would decrease from 17 percent to 11 percent.

**Table 4-15. Area and Percent of Area for Three Categories of Bighorn Sheep Use Within Burro Herd Management Areas**

Bighorn sheep use categories	Herd Management Areas			
	Chemehuevi		Chocolate/Mule Mountains	
	Acres	Percent	Acres	Percent
Occupied Range	68631	4	118123	7
Unoccupied Former Range	0	0	11989	5
Movement Corridor	20562	3	49956	8

**Burro Deer:** The impacts on burro deer would be similar to those described for bighorn sheep.

**Other Special Status Species:** The effects of burros would be similar to the effects described in the No Action alternative, except that the area impacted would be much less. Five special status animal species would have more than 10 percent of their range in a burro herd management area (see Table N-7 Appendix N).

Because riparian vegetation would recover over time around springs where burros were excluded, adverse impacts on some special status animals, especially riparian birds would be reduced.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

The establishment of “washes closed zones” would reduce impacts on 359,024 acres (41 percent) in the Chemehuevi DWMA and 121,374 acres (15) of the Chuckwalla DWMA. These wash closures would reduce tortoise mortality, crushing of burrows (tortoises commonly use the banks of washes for burrowing), and other adverse effects described for the No Action alternative. However, substantial areas of DWMA where washes remain open for vehicle use would remain.

The impacts associated with camping would be reduced by the reduction in allowable camping distance off of routes from 300 feet to 100 feet because there would be a reduced potential for vehicles to disturb vegetation and to kill or injure tortoises or crush burrows. In addition, because there would no driving in washes (except those washes designated as routes) in the washes-closed zone, there would be a reduced opportunity to run over tortoises or burrows while camping along washes.

The impacts associated with racing would be greatly reduced by the elimination of the Parker 400 competitive event route and by the elimination of races on access routes.

**Bighorn Sheep:** The impacts of vehicle use of routes on bighorn sheep would be the same as the No Action Alternative.

**Other Special Status Species:** The impacts of vehicle use of routes on other special status species would be the same as the No Action Alternative. Table N-9 shows the resulting number of miles of road per square mile in the range of each special status animal; these numbers do not include navigable washes in areas where they may be driven. The average number is 0.6 miles of route per square mile in the planning area. The route density is highest in the range of burro deer, Gila woodpecker, and yellow warbler. Navigable wash areas are also found within the range of these species.

#### **From Issue : Land Ownership Pattern**

The impacts associated with the land tenure adjustment program will be to increase emphasis on acquisitions in both tortoise critical habitat and in WHMAs, which are designated for other special status species.

#### **4.2.4.2 Vegetation Management**

##### **From Issue 1: Standards and Guidelines**

**Natural Communities:** Impacts associated with adoption of the Regional Standards of Public Land Health rather than use of the existing National Fallback Standards and adoption of Regional Grazing Guidelines rather than fallback Grazing Guidelines would be similar to those impacts described for the No Action Alternative. Regional Standards and Guidelines are more specific (addressing litter production, age distribution, distribution, cover, and other community attributes), and directed at desert resources than National Fallback Standards. Regional Standards would be more sensitive to loss of vegetative cover and reduction in plant vigor.

Improved grazing management practices through implementation of the Regional Standards and Guidelines would result in reduction of the impacts of associated with year-long livestock grazing. An increase in canopy cover and plant vigor would occur. If grazing use exceeds established levels, livestock would be removed or moved to another part of an allotment. In the long term, under properly managed rangelands, species diversity and ecological condition would improve.

Regional standards and guidelines specify: (1) that microbiotic crusts are to be maintained, (2) address specific ecological processes such as nutrient cycle and hydrologic functions), (3) are very specific regarding riparian, wetlands, and stream conditions, (4) address specific livestock/wetlands conflicts at springs, seeps, and water facilities for livestock and (5) are specific with regard to native species standards.

##### **From Issue 2: Recovery of the Desert Tortoise**

The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in the Proposed Plan would be similar to the impacts described for the No Action Alternative. Nevertheless, adverse impacts would be further reduced based on the establishment of DWMA with limitations on surface disturbing activities in DWMA, reductions in livestock grazing, and establishment of “washes closed zones.” Specific differences

in impacts between the Proposed DWMA Alternative and the No Action Alternative are described below.

**Natural Communities:** The establishment of 1,684,248 acres of DWMA would enhance natural communities by increasing the amount of each community inside an area of protection. Table 4-16 shows the acres and percent of each natural community within the DWMA. These acreages in DWMA would augment the portions of each natural community that are in JTNP, CMAGR, and BLM wilderness.

**Table 4-16. Areas and Percent of Total Area of Each Natural Community Within Large DWMA**

Natural Community	DWMA	
	Acres	Percent
Sonoran Desert Scrub	1139072	30
Mojave Desert Scrub	230903	29
Desert Dry Wash Woodland	312556	46
Mojave Pinyon/Juniper Woodland	0	0
Desert Chenopod Scrub	0	0
Playas	1141	1
Springs and Seeps (no. of sites)	38	27
Sand Dunes	0	0

More specifically, the limit of 1 percent on new surface disturbance provides an upper limit on the amount of new surface disturbance that would occur over these large DWMA. Although projected levels of new surface disturbance are below 1 percent, the limitation shows an agency commitment. The prohibition on disposal of lands in the DWMA together with continued acquisition of private and state lands would reduce the potential of surface disturbing development that would potentially occur over time on embedded private lands.

The effects of grazing on natural communities described in the No Action Alternative would be reduced in the Proposed Plan by (1) the reduction in size, (2) authorizations of temporary non-renewable allocations of perennial forage would not be allowed, (3) ephemeral allocations in the Lazy Daisy Allotment would not be allowed and (4) the total elimination of the Chemehuevi Allotment. A lack of grazing would increase above-ground biomass and increase seed reproduction because more plants would reach full size. The health of mature plants would be maintained or improved compared to the No Action alternative. Abundant immature plants would successfully become established, thereby increasing litter for soil stabilization. More lands will be grazed than in the Small DWMA--A Alternative (grazing excluded from DWMA), but the additional grazed lands fall mostly in Sonoran Desert Scrub and Mojave Desert Scrub which are the most common and least

sensitive natural communities. The amount grazed is less than in the No Action alternative, mostly in these two natural communities.

This alternative would provide for relinquishment of the Lazy Daisy allotment upon request of the lessee. This is intended to allocate the land to tortoise conservation upon request; this would be expected if a conservation organization purchased the allotment base property. This would eliminate all impacts on natural communities from cattle grazing in the Lazy Daisy allotment.

The size of the various types of natural community in the Lazy Daisy Cattle allotment is presented in Table 4-17.

**Table 4-17. Areas and percent of total of each natural community within BLM cattle grazing allotments: Lazy Daisy Cattle**

Natural Community	Lazy Daisy Cattle	
	Acres	Percent
Sonoran Desert Scrub	98482	3
Mojave Desert Scrub	207450	26
Desert Dry Wash Woodland	3378	<1
Mojave Pinyon/Juniper Woodland	1928	100
Desert Chenopod Scrub	0	0
Playas	0	0
Springs and Seeps (no. of sites)	16	11
Sand Dunes	0	0
<b>All NECO lands</b>	<b>311279</b>	<b>6</b>

**Ecosystem Processes:** Compared to the No Action Alternative, ecosystem processes would be improved as habitat disturbance is reduced by protective measures and rehabilitation projects in the Proposed Plan. Raven management efforts are aimed at reducing excessive raven predation to more natural levels expected without the augmentation of food and nesting sties. Measures to reduce surface disturbances will aid in inhibiting the spread of exotic plant species and maintaining natural hydrologic processes.

**Special Status Plants:** The beneficial effects described in the No Action Alternative from Issue 2 for plant populations within JTNP, CMAGR, and BLM wilderness would be increased for those plant populations occurring in DWMA's. As shown in Table N-12 Appendix N, all plant species except three special status plants (Howe's hedgehog cactus, Wiggin's cholla, and White margined

beardtongue) would have a high proportion of their populations in one of these conservation areas. These three plants would receive protection as described in the No Action Alternative for species outside of the conservation areas.

**Biological Soil Crusts:** Compared to the No Action Alternative, soil crusts would receive reduced impacts based on the 1 percent limitation on new surface disturbance in DWMAs and with the loss of grazing use.

**Noxious Weeds:** Compared to the No Action Alternative, the 1 percent limitation on new surface disturbance in DWMAs and with the loss of grazing use would result in less surface disturbance and reduction in native plant cover. Both of these promote weed propagation.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Natural Communities:** The closure to vehicles at three dune systems (Palen, Rice Valley, Ford) would aid in stabilizing dune systems and promoting plant growth. This would aid in maintaining viable populations of rare sand-loving plants and endemic invertebrates (Andrews *et al.* 1979). The closure to vehicles at two playas (Palen Dry Lake, Ford Dry Lake) would reduce compaction of soils by vehicles, reduce disturbance of playa surfaces by vehicles and subsequent wind erosion, and reduce direct mortality of rare playa invertebrates.

There would be an elimination of grazing impacts to 49,682-acre Ford Dry Lake Sheep Allotment and a 9,254-acre portion of Rice Valley Sheep Allotment that are no longer be available for sheep grazing on natural communities as described in the No Action Alternative. However, this reduction in effects on natural communities would be small because these allotments are only grazed lightly in about one of every five years.

The requirements for compensation at 3:1 replacement acres would discourage project placement in Desert Dry Wash Woodland and Desert Chenopod Scrub communities. Both of these are present in small amounts, but add greatly to overall plant diversity in the planning area. Similar compensation rates for disturbance of closed dunes and playas communities would likewise discourage projects on these very rare communities.

There will be an increase in consumption of forage by deer and bighorn sheep as their populations increase in size and distribution with the addition of new guzzlers. Consumption will be greatest nearest the water source. Because these two native ungulates, in even greater numbers in the past, have coexisted with the native plant community, effects, if any, on community structure or composition would be sustainable.

Although vegetation harvesting will not be allowed (except for salvage) in the Proposed Plan, the amount and effects of this activity as presently administered (No Action alternative) are very low.

**Special Status Species:** Acquisition of lands out containing federally listed Coachella Valley milk-vetch would aid in the recovery of this plant by reducing the likelihood of a surface disturbing project disturbing the species' habitat on private lands. This population is very small and is disjunct from

the remainder of the in the Coachella Valley. Measures in this alternative addressing special status plants will give added policy direction to avoid disturbance of the habitat of other special status species.

**Ecosystem Processes:** Even though off-highway vehicles do not heavily use the dunes and playas that are open for free-play (<10 vehicles per week) (John Blachley, BLM, law enforcement ranger, pers. comm.), the closing of dunes and playas to vehicles would aid in maintaining natural wind erosion and hydrologic processes in these natural communities because the vegetation on fine, blow sand dunes and wet playa edges are susceptible to loss and degradation with repeated use.

**Noxious Weeds:** Tamarisk removal would receive increased priority in rare and sensitive natural communities, especially springs and seeps. This would promote the growth of native trees and shrubs that have been replaced by the more aggressive tamarisk trees.

#### **From Issue 1: From Wild Horses and Burros**

The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in the Proposed Plan would be similar to the impacts for the No Action alternative. However, adverse impacts would be reduced due to (1) the reduction in the current target herd sizes (i.e., Appropriate Management Levels) from 212 to 121 animals in the southern herd management areas and from 150 to 108 in the northern herd management areas, and (2) the reduction in the herd management areas from 423,598 acres to 223,542 acres in the southern herd management areas and from 485,846 acres to 147,630 acres in the northern herd management areas.

#### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Natural Communities and Noxious Weeds:** The effects on natural communities and noxious weeds in the Proposed Plan would be similar to the impacts for the No Action Alternative. However, adverse impacts would be reduced due to (1) designation of a fixed route network, thereby limiting proliferation of new routes; (2) closing of 239 miles of routes based on criteria including consideration of vegetation and wildlife resources; and (3) designation of “washes closed zones” where driving in open washes would be prohibited. Much of the driving in washes is in the Desert Dry Wash Woodland natural community.

Positive impacts resulting from the closure of washes to vehicle travel include a reduction in the destruction of vegetation along banks where vehicles travel out of the wash bottom. Additionally, an improvement in the stabilization of the bank may be seen. Long term disturbance from vehicle travel would include loss of topsoil, loss of water-storage capacity of soil, lower permeability due to soil compaction, and increased occurrence of exotic plant species.

The elimination of the Parker 400 competitive event route and the criteria in the CDCA Plan (i.e., No Action Alternative) allowing races on existing routes according to specific criteria would eliminate all impacts associated with such events anywhere in the planning area except for the Johnson Valley-Parker competitive event route, which would remain designated. Impacts described

in the No Action Alternative would remain for that event route. However, the alignment of the latter event route does not pass through rare or diverse natural communities.

#### **4.2.5 Wilderness Management**

Site-specific projects to (1) implement the regional standards and guidelines for public land health; (2) facilitate recovery of desert tortoise; and (3) protect special status plants and animals require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects would be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

##### **From Issue 1: Standards and Guidelines**

Managing all activities under specified Regional Standards of Public Land Health and managing grazing activities in accordance with specified Regional Guidelines would benefit wilderness resources in a similar manner as described for the No Action Alternative (see Section 4.1.5, Issue 1), though improvements to air quality, water quality, soil quality, vegetative composition, and habitats for special status species outside grazing allotments would promote the wilderness character of all wilderness areas.

##### **From Issue 2: Recovery of the Desert Tortoise**

Managing Desert Wildlife Management Areas (DWMAs) as prescribed under the Proposed Plan would benefit resource values in wilderness where improvements to vegetation composition and habitats for special status species occur. By improving resource conditions, the wilderness character of lands so designated would be promoted.

DWMAs designated under this alternative encompass all or portions of the following wilderness areas: Clipper Mountains, Piute Mountains, Bigelow Cholla Garden, Old Woman Mountains, Stepladder Mountains, Turtle Mountains, Mecca Hills, Orocopia Mountains, Chuckwalla Mountains, Little Chuckwalla Mountains, and Palo Verde Mountains (see Maps 2-6 and 2-38).

Site-specific projects to facilitate recovery of the desert tortoise require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Bighorn Sheep:** Bighorn sheep currently occupy most of the mountain ranges designated as wilderness (see Map 2-18) and constitute wildlife values associated with wilderness that are to be preserved in accordance with the California Desert Protection Act of 1994 (Section 2, Public Law 103-433). Bighorn sheep habitat is currently fragmented by human developments, populations are isolated, and individual animals are being stressed which challenge the survival of the species on a



metapopulation level (see Section 3.4, Biological Resources). Specific management actions are prescribed under this alternative to protect essential bighorn sheep habitat; maintain, improve, and restore the quality of their habitat; and reestablish bighorn sheep demes (see Section 2.3.1.2).

Expansion of usable habitat is identified as an important component of a conservation strategy to ensure long-term viability of the Sonoran Desert and Southern Mojave Desert Bighorn Sheep Metapopulations. Under the Proposed Plan, new water developments would be established to expand usable habitat for the Sonoran Desert Metapopulation. Of the 22 water developments identified for construction in designated wilderness, ten would be authorized at this time: two in each of the Chuckwalla Mountains, Indian Pass, Little Picacho Peak, and Orocopia Mountains wilderness areas, and one in each of the Little Chuckwalla Mountains and Picacho Peak wilderness areas (see Map 2-19 and Appendix M). The other 12 water developments not authorized at this time may be later authorized with the support of additional biological justification (e.g., through completion of the Sonoran Metapopulation Plan being developed by the California Department of Fish and Game). Upon identification of specific sites for water developments, including the ten authorized at this time, separate environmental reviews, including "minimum tool analyses" which specify the manner in which projects are to be completed, would be prepared.

Fencing of water sources is prescribed under this alternative to achieve an appropriate allocation of water to burros, deer, and bighorn sheep. A specific fencing proposal would be deferred until additional data is acquired. Distribution of water sources in wilderness is depicted on Map 3-1. Design of the fence exclosures is described in Appendix M.

Wildlife water developments may be constructed in wilderness under certain circumstances. Such developments are not categorically defined as nonconforming uses. Although construction of facilities to enhance an area's value for wildlife is not consistent with the free operation of natural processes, such measures may be necessary for the continued existence or welfare of wildlife living in wilderness, particularly in the case of species adversely affected by human activities. Permanent installations to maintain conditions for wildlife may be permitted (1) if the resulting change is compatible with preserving wilderness character; (2) if the resulting change is consistent with wilderness management objectives for the area; and (3) if they are the minimum necessary to accomplish the task (see Section 3.5.2).

**Preservation of Wilderness Character:** In accordance with the Wilderness Act of 1964, wilderness is an area (a) where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain; (b) of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation (certain exceptions apply as cited above); (c) which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (d) which is protected and managed so as to preserve its natural conditions; (e) which has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (f) which has at least five thousand acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (g) which may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value (Section 2, Public Law 88-571). These attributes serve as objectives to guide actions pertaining to the preservation and use of wilderness areas.

Regarding the ten water developments authorized under this alternative, locating no more than two in any one of the six wilderness areas identified would not substantially affect the overall natural character of a given wilderness because each development would be substantially unnoticeable when constructed in the manner prescribed in Appendix M. The size of each affected wilderness area (Chuckwalla Mountains Wilderness of 88,183 acres, Indian Pass Wilderness of 32,967 acres, Little Picacho Peak Wilderness of 35,853 acres, Orocopia Mountains Wilderness of 54,683 acres, Little Chuckwalla Mountains Wilderness of 28,708 acres, and Picacho Peak Wilderness of 8,837 acres) compared to the size of each water development (less than 0.001 acre of disturbance upon installation) provides a sense of project scale relative to the wilderness as a whole that supports this determination regarding noticeability. Visitors would not likely encounter these developments when traversing wilderness areas on foot or horseback. Except when in close proximity to individual drinkers where above-ground facilities would be visible (e.g., drinker entrance and water catchment dam), visitors' perceptions would be that the wilderness appears to have been affected primarily by the forces of nature would remain unchanged.

The other 12 water developments that may be authorized at a later time would be located in the same wilderness areas except for the Little Chuckwalla Mountains Wilderness and Picacho Peak Wilderness, where no additional developments are proposed (see Appendix M). As with the previous ten developments and for the same reasons, these additional water developments would not substantially affect the overall natural character of any one wilderness.

The number and locations of fence enclosures that prevent burros from accessing water sources are yet to be identified, but some would occur in wilderness areas where burros are managed for retention and deer and bighorn sheep populations occur (see Map 2-18 depicting occupied range of bighorn sheep, Map 3-6f depicting the range of deer, Map 2-26 depicting Habitat Management Areas for burros, and Map 2-38 depicting designated wilderness areas). Under the Proposed Plan, such wilderness areas include the Whipple Mountains, Indian Pass, Picacho Peak, and Little Picacho Peak. Existing water sources occur in each of these wilderness areas (see Map 3-1). Relative to these four wilderness areas, new water developments are authorized at this time in the Indian Pass, Picacho Peak, and Little Picacho Peak areas (see Appendix M). Effects on the natural character of wilderness from installation of fence enclosures would be addressed when such facilities are proposed.

During periods of construction and maintenance of new water developments, opportunities for solitude would be adversely affected by the presence of personnel undertaking such activities, but such impacts would be limited to the project area. Construction and maintenance would occur during periods when disturbances to visitors are anticipated to be minimal. The use of motorized vehicles in support of California Department of Fish and Game management activities, including the maintenance of new water developments, is governed by "Memorandum of Understanding between Bureau of Land Management and California Department of Fish and Game for Wildlife Management Activities in Wilderness" (1997).

**Consistency with Wilderness Management Objectives:** In accordance with BLM Manual 8560, Management of Designated Wilderness Areas, a wilderness management plan is developed for each BLM-administered wilderness area as a means of applying wilderness management policy to that

specific area. The plan is tailored to local conditions by prescribing specific objectives appropriate to the area (Section 8560.21).

As management plans have not been developed for the subject wilderness areas, the general objectives described under "Preservation of Wilderness Character" provide guidance for management actions. Relative to these objectives, the effects of developing new drinkers for bighorn sheep in wilderness areas are described above.

**Facilities Necessary to Accomplish the Task:** In accordance with BLM Handbook H-8560-1, wildlife management activities will emphasize the protection of natural processes. Management activities will be guided by the principle of doing only the minimum necessary to manage the area as wilderness. Further, in managing wilderness use, wilderness-dependent use is to be favored. Whereas ten new water developments in wilderness areas would be authorized under this alternative to benefit bighorn sheep populations, 53 such developments would be authorized outside wilderness. To the extent that the water developments proposed in wilderness areas are the minimum necessary to realize the stated goal, these bighorn sheep drinkers constitute "wilderness-dependent" use.

**Desert Mule Deer:** New water developments are identified to expand usable habitat for desert mule deer (see Section 2.3.2.2 and Appendix M). Water developments in wilderness authorized at this time under the Proposed Plan would also be used by bighorn sheep. The effects of these developments on wilderness resources are described above.

No new water developments in wilderness would be authorized at this time solely to expand usable habitat for desert mule deer, though two such developments are identified in the Palo Verde Mountains Wilderness that may be authorized at a later time with the support of additional biological justification and site-specific environmental review. The effects of these additional two water sources on wilderness values are the same as described above. In summary, the overall natural character of the Palo Verde Mountains Wilderness would not be substantially affected, and opportunities for solitude would be adversely affected only during periods of construction and maintenance with the presence of personnel undertaking such activities, but such impacts would be limited to the project area.

**Bats:** Bat gates would be constructed on caves or mine roosts where there is a significant potential for negative effects from human intrusion (see Section 2.3.3.2). The cumulative range for various bats encompasses almost the entire NECO planning area (see Maps 3-6b, 3-6c, and 3-6d). Sites for bat gates, however, are not identified. Effects on the natural character of wilderness from installation of bat gates will be addressed when such facilities are proposed.

#### **From Issue 4: Wild Horses and Burros**

Combining the existing Chemehuevi and Havasu Herd Management Areas into a single, modified Herd Management Area to more accurately reflect burro use would retain most of the Whipple Mountains Wilderness as an area managed for retention of burros and exclude all of the Chemehuevi Mountains Wilderness from the current Herd Management Area (see Map 2-26). The current combined Appropriate Management Level (AML) of 150 burros would be reduced to 108 burros in

this modified Herd Management Area until a new AML is established through monitoring of habitat and population (see Section 2.4.3).

Combining historical burro range and the existing Chocolate/Mule Mountains and Cibola/Trigo Herd Management Areas into a single, modified Herd Management Area to be managed for retention of burros would exclude all of the Palo Verde Mountains Wilderness and portions of the Indian Pass Wilderness and Picacho Peak Wilderness from the current Herd Management Area, and incorporate all of the Little Picacho Peak Wilderness into the modified Herd Management Area (see Map 2-26). The current combined Appropriate Management Level (AML) of 212 burros would be reduced to 121 until a new AML is established through monitoring of habitat and population (see Section 2.4.3).

Wild horses and burros are considered an integral part of the natural system of the public lands in areas where found, including wilderness. The effects of burros in designated wilderness as described in Section 4.1.5, Issue 4 (No Action Alternative) are applicable to this alternative.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

The impacts of the Proposed Plan relative to motorized-vehicle use in designated wilderness, would be the same as described in Section 4.1.5, Issue 5 No Action alternative with the following exception.

The two existing Off-Highway Vehicle Recreation Areas would be closed under the Proposed Plan. All potential for impacts to wilderness resources from competitive vehicle events in the Rice Valley Wilderness, which abuts the Rice Valley Dunes Off-Highway Vehicle Recreation Area, would be eliminated.

**From Issue 6: Land Ownership Pattern**

Actively seeking to acquire lands or interests in lands within DWMA's and WHMA's adds to existing policy regarding land acquisition in wilderness (see Section 2.6.3). The discussion Section 4.1.5, Issue 6 (No Action Alternative) regarding acquisition of additional lands in wilderness is applicable to the Proposed Plan.

**Summary of Impacts**

Since designation of certain public lands in the NECO planning area as wilderness by Congress, threats to wilderness resource values have been reduced. Incursions into wilderness by motorized vehicles, the predominant activity that has adversely affected wilderness values, have decreased with installation of vehicle barriers, patrols by law enforcement personnel, and distribution of informational materials such as Desert Access Guides that promote responsible behavior (BLM staff conclusions). Improvements to air quality, hydrological function and water quality, soil quality, vegetation composition, and habitats for special status species that may occur through implementation of Regional Standards of Public Land Health, as well as undertaking actions to recover the desert tortoise, would benefit wilderness values. Reducing the negative effects of excessive burros and decreasing threats from vehicle incursions during competitive vehicle events would also benefit wilderness values. Reestablishing bighorn sheep demes in wilderness where they formally occurred would add to the natural character of these areas.

#### 4.2.6 Livestock Grazing Management

##### **From Issue 1: Standards and Guidelines**

The effects of adopting regional standards for Public Land Health, and guidelines for grazing management are similar to the No Action alternative.

##### **From Issue 2: Recovery of the Desert Tortoise**

The Chemehuevi Allotment would no longer be available for potential cattle production. Currently there is no lessee of record.

Under the Proposed Plan, the lessee of the Lazy Daisy Allotment may voluntarily relinquish grazing use and related authorizations. Their written request would initiate a grazing decision from the manager to allocate the area of the allotment, and all forage allocations to desert tortoise recovery and conservation. The Proposed Plan would authorize grazing use until the lessee desires to relinquish the grazing lease and then the habitat would be allocated solely for the recovery of the desert tortoise. If that should occur, lessee would be compensated for his financial investment in the Lazy Daisy Allotment. All perennial grazing operations in the NECO planning area would cease after forage is allocated to desert tortoise recovery. Cattle production would be foregone on these public lands and opportunities for future grazing use do not exist elsewhere for the planning area.

Management would not authorize grazing use and related authorizations after the lessee for the Lazy Daisy Allotment voluntarily relinquishes the lease. Existing range improvements for both allotments, but primarily Lazy Daisy Allotment would soon fall into disrepair and eventually abandoned unless the BLM or a cooperator assumes maintenance responsibilities. Some abandoned projects would become a safety hazard and would require complete or partial removal.

The area of the Lazy Daisy Allotment would be reduced by 6 percent or 21,606 acres to devote high quality habitat for recovery of the desert tortoise. This portion of the allotment is rarely utilized by cattle because the area lacks perennial forage and sources of water. Permitted grazing use would not be reduced for lands that are rarely visited by cattle and infrequently produce ephemeral forage.

Reducing the size of Lazy Daisy allotment by 6 percent will not result in lowering perennial AUMs because the area falls within ephemeral rangeland. Current terms and conditions would become a condition of the lease similar to the No Action Alternative. The development of a written grazing strategy by the lessee, BLM, and FWS would mean attendance of numerous coordination meetings. Most years cattle operations would be unaffected with implementation of the grazing strategy; however, year-long grazing operations would be affected by the strategy an estimated four out of ten years. Grazing use would be substantially reduced during these dry years at lower elevations in desert tortoise habitat. Implementation of this strategy would take two to three years with extensive coordination among lessee, BLM, and FWS.

Additional range improvements would be needed to implement the Proposed Plan. Grazing management would be difficult and ineffective for the lessee without installation of proposed

improvements. The lessee for the Lazy Daisy Allotment may relinquish the lease and the BLM would not authorize grazing use and all related authorizations for the allotment.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

For the Proposed Plan, the Ford Dry Lake Allotment would no longer be available and any potential domestic sheep production for lessee would cease. Reducing the size of the Rice Valley Allotment would impact livestock use along the west and southwest edge of the allotment. This loss in area would not seriously impact sheep grazing operations since sheep are herded and herds would be directed away from the area of exclusion. However, in the unlikely event the closed area contains most of that year's forage, the lessee would be prohibited from using the area to preserve the appropriate distance from bighorn sheep.

### **Summary of Impacts**

Perennial forage is allocated to desert tortoise recovery and conservation in the Lazy Daisy Allotment and grazing use is allocated to desert tortoise on the Chemehuevi Allotment which represents a reduction of income and a potential loss of current lifestyle to the lessees. Cattle production would be foregone on these public lands and opportunities for future grazing use do not exist elsewhere in the planning area.

After loss of grazing use and related authorizations, most existing range improvements for both allotments, but primarily Lazy Daisy Allotment would soon fall into disrepair and have to be abandoned unless the BLM or a cooperator assumes the maintenance responsibilities. Abandoned projects could become a safety hazard and will need removal. This process is expected to be costly for the BLM.

With potential loss of grazing in the Northern and Eastern Mojave (NEMO) planning area, the Mojave National Preserve and the NECO planning area, there would be a noticeably decline in the size of the portion of the livestock industry centered on grazing use of BLM administered lands in the California Desert Conservation Area. Loss of cattle operations at this level in these planning areas could change the character of livestock operation.

## **4.2.7 Wild Horses and Burro Management**

### **From Issue 1: Standards and Guidelines**

Rangeland Standards will set criteria for the management of Burro HMAs, which would require a monitoring program to measure the effectiveness of management in meeting the standards. Data collected from this monitoring, shall be used in establishing an Appropriate Management Level (AML) for the HMAs.

If burros are found to be a causative factor in failing to meet one or more rangeland standards, appropriate actions would need to be taken. These actions may include, but not limited to: (1) removal and placement of wild horses and burros into the National Wild Horse and Burro Adoption Program; (2) the manipulation of their distribution; (3) erecting fencing, and/or providing additional

improvements such as water sources, including permanent trap sites on public lands; (4) adjusting the AML downward; and (5) adjust allocation of forage (AUMs) between animal species.

Impacts to burro populations from improved rangeland health could be expected through enhancements in animal health and condition, conception, carrying through term, foal survival and longevity.

### **From Issue 2: Recovery of the Desert Tortoise**

The reduction of approximately 30 percent (122,068 acres) of the Chemehuevi HMA and approximately 30 percent (115,821 acres) of the Chocolate/Mule Mountains HMA (see Issue 4) is due to the designation of DWMA's and the management prescription to not have HMA's inside DWMA's. These areas where the HMA boundary would be removed from DWMA's are not frequently used by burros and would not directly impact the existing herds.

The Piute Mountain Herd Area is entirely within a DWMA, which has an estimated 37 burros. These burros would be removed and placed into the BLM's Adopt-A-Horse or Burro Program.

Loss of grazing use on the Chemehuevi grazing allotment would reduce the intermittent dietary overlap that occurs between cattle and burro grazing in the same area.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

The impacts of new water developments are the same as the No Action alternative.

The expected impacts from the augmentation and reestablishing of bighorn sheep demes within HMA's is the increased dietary overlap between the two species and a higher demand on natural waters. The implementation for the recovery of bighorn sheep populations within HMA's will be addressed in Herd Management Area Plans (HMA's).

The expected impacts from excluding burros from some natural waters within a burro HMA are:

- Change the natural distribution of wild burros.
- Force burros to find alternative waters in other geographical areas, such as the Colorado River or outside the herd management area.
- Concentrate a larger number of burros in areas which have available water which can lead to an increase on utilization on key species, trailing and demand on water.
- The potential for water shortage exists if the springs and tanajas are over utilized, or drought conditions occur. Drought conditions will negatively affect the ability for some of these water sources to sustain a level of continued use (past activities have involved flying in water by helicopter to fill critical tanajas used by bighorn sheep during drought conditions).

- There are some tanajas that are hazardous to burros. Fencing these tanajas would prevent burros from falling in.
- Natural waters which would be fenced to exclude burros will be addressed in the HMAPs.

**From Issue 4: Wild Horses and Burros**

The new Chemehuevi HMA is reduced from a current combined 485,846 acres (Chemehuevi and Havasu HMAs) to 147,630 acres, a 70 percent reduction. The current AML of 150 is reduced 28 percent, to a current management level of 108 burros.

The new Chocolate/Mule Mountain HMA is reduced from a current combined 422,598 acres (Chocolate/Mule Mtns. and Cibola/Trigo HMAs) to 223,542 acres, a 47 percent reduction. The current combined AML of 212 is reduced 43 percent to a single current management level of 121 burros.

Based on the findings of Singer and Zeigenfuss (2000), these population levels are below the lowest range of animals (139-185) necessary for a genetic effective population. Cothran (2000), describes loss of genetic variability can lead to a reduction in fertility or viability of individuals in a population. The HMAPs will address management prescriptions that can alter this relationship through altering breeding sex ratios, increase generation length through less removals or by introducing breeding animals periodically from other herds.

This action removes the HMA designation from national wildlife refuges (NWRs) managed by USFWS, Indian Tribal lands, and from the Picacho State Recreation Area (SRA). Forage allocation for burros in determining AMLs will only occur on BLM lands. However, burros during the summer and dry winters will continue to utilize these other lands for shade, water and food, especially if natural waters in the upland are fenced to exclude burros. In order to minimize burro activity on these lands, the HMAPs will be addressing actions that include, but are not limited to, continuing to remove nuisance burros, erecting fencing, and/or providing additional water sources on public lands for wildlife and burros. Table 4-18 compares Herd Management areas and AML for the No Action and Proposed Plan Alternatives.



**Table 4-18. Comparison of HMA Size and AML for the No Action and Proposed Plan Alternatives**

Burro HMAs	No Action Alternative		Proposed Plan	
	HMA, acres	AML, No. of Burros	HMA, acres	Current Mgt Level, No. of Burros
Piute Mtn.	0	0	0	0
Chemehuevi	406,894	150*	147,630	108
Havasu (AZ)	78,952	150*	**	*
Chocolate/Mule Mtns.	386,069	22	223,543	120
Cibola/Trigo (AZ)	36,530	190	**	*
<b>Total</b>	<b>908,445</b>	<b>362</b>	<b>371,173</b>	<b>228</b>

\* HMAs share common AML

\*\* Arizona HMAs were combined with California HMAs.

Compared to the No Action alternative, there is a 60 percent reduction (537,272 acres) in available habitat for burros and a 37 percent reduction in AML within the NECO planning unit.

Elimination of the Picacho horse HMA would have no significance since any horses that may have once been in the area naturally left many years ago.

The burros in the Piute Mountain HA would be removed and placed into the BLMs Adopt-A-Horse or Burro Program.

### Summary of Impacts

Within the CDD (1980), there was a total 4,973,514 acres designated as burro herd areas. A total of 3,500,465 acres was designated for the management of 2,747 burros. Currently, there is a total of 1,338,804 acres for the management of 370 burros (see Map 4-1, Appendix A). The Clark Mountain and Chicago Valley HMAs are going through a similar amendment process under the Northern and Eastern Mojave Desert Plan where the Proposed Plan is to eliminate these HMAs, a reduction of 353,522 acres and a combined AML of 72. This leaves a total of 563,492 acres remaining for the management of burros, within the CDD. The 3 remaining HMAs outside the NECO planning area, either do not have population of burros (Piper Mountain HMA) or can't support year-long burro populations on public lands (Waucoba/Hunter Mtn. and Lee Flat HMAs). This leaves the Chemehuevi and Chocolate-Mule Mountains HMAs with the most viable herds remaining in the CDD.

The remaining HMAs have management levels below the genetic effective population size, described by Singer and Zeigenfuss (2000). Cothran (2000), describes loss of genetic variability can lead to a reduction

in fertility or viability of individuals in a population. The cumulative reductions in habitat available for burros and subsequent reductions in burro populations, has reduced the representation of this species and has likely compromised their gene pool and ability for populations to maintain genetic viable herds without human intervention within the CDD.

#### **4.2.8/9 Recreation Management and Motorized-Vehicle Access**

##### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Motorized-Vehicle Access:** There is a close relationship between the pursuit of recreational activities and motorized-vehicle use in the California desert, whether motorized vehicles are used to drive for pleasure or are simply a means of access to recreation destinations such as campgrounds and wilderness trail heads. It is difficult, if not impossible in many circumstances, to engage in recreational activities in this region without employing a motorized-vehicle in some fashion given the desert's vast expanse and great distances to recreation sites. Therefore, actions which restrict vehicular access may affect opportunities for recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed.

Under the Proposed Plan, motorized-vehicle access would be managed consistent with Multiple-Use Class L (Limited Use) guidelines as described in the California Desert Conservation Area Plan irrespective of Multiple-Use Class, except in Multiple-Use Class C (Controlled Use or wilderness) and areas designated "open" for vehicle use. Vehicle access in Multiple-Use Class L areas is directed toward use of approved routes, that is, routes designated "open" or "limited." In managing motorized-vehicle access, BLM must comply with the criteria at 43 CFR 8342.1 which, in part, require that routes be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Further, special attention must be given to protect endangered or threatened species and their habitats.

To protect the desert tortoise and its habitat, "washes closed zones" would be established in portions of the Chemehuevi and Chuckwalla Desert Wildlife Management Areas. In these "washes closed zones," vehicle use would be restricted to specific routes that are individually designated "open" or "limited." To protect other sensitive species and their habitats, certain routes are designated "closed" based on criteria developed in furtherance of the regulatory criteria at 43 CFR 8342.1 (see Table 2-11).

Of the 4,982 miles of inventoried unpaved routes within the planning area, excluding non-routes, partial non-routes, and routes in designated wilderness, Joshua Tree National Park, and the Chocolate Mountains Aerial Gunnery Range, 4,743 miles, or approximately 95 percent, would be available for motorized-vehicle use under the Proposed Plan. In addition, washes that constitute existing motorized-vehicle routes, or "navigable" washes, outside "washes closed zones" would be available for use (see Section 3.9.5 for the definition of "navigable" washes). Mileage of wash routes available for use in these "washes open zones" is undetermined.

To protect certain sensitive species and their habitats, 239 miles of inventoried routes would be closed in the NECO planning area (see Table 2-15, Section 2.5.4). This mileage includes routes and

route segments that would be designated “closed” on public lands, and routes and route segments on non-public lands for which route designation decisions do not apply.

As the closure of inventoried routes represents about 5 percent of the total mileage in the NECO planning area and access to all regions of the planning area would be little changed (see Map 2-32), adverse effects to motorized-vehicle access, hence recreation that relies on such access, would be minor.

Vehicles would not be excluded from Desert Wildlife Management Areas (DWMAs). Within the Chemehuevi DWMA, 734 miles of existing unpaved routes would be available for motorized-vehicle use. This represents approximately 96 percent of the inventoried routes in this DWMA. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone covers 359,093 acres, or 41 percent of the Chemehuevi DWMA

Within the Chuckwalla Desert Wildlife Management Area, 960 miles of existing unpaved routes would be available for motorized-vehicle use, representing approximately 95 percent of the inventoried routes in this DWMA. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone covers 121,374 acres, or 15 percent of the Chuckwalla DWMA

In WHMAs there would be 696 miles of open routes, and 56 miles of closed routes. Outside DWMAs and WHMAs, there would be 2,353 miles of open routes, and 99 miles of closed routes.

As indicated above, motorized-vehicle access to certain washes that constitute existing routes in “washes closed zones” would be prohibited, though the extent (mileage) of such wash closures is undetermined. Hence, the limitations on motorized-vehicle access cannot be quantified. However, motorized-vehicle access within “washes closed zones” would not be altogether precluded. Access within these zones would be provided via specified routes. These routes would afford access to most portions of the “washes closed zones” (see Maps 2-10 and 2-32).

**Stopping, Parking, and Vehicle Camping:** In accordance with the California Desert Conservation Area Plan, stopping, parking, and vehicle camping are restricted to areas within 300 feet of a route, except within sensitive areas (such as Areas of Critical Environmental Concern) where the limit is 100 feet. Under the Proposed Plan, these limits are not changed, rather they are measured from the centerline of an approved route instead of the route's edge. Such limits provide adequate space for stopping and parking alongside routes.

Regarding vehicle camping, the discussion in Section 4.1.8 (No Action Alternative) is applicable to the Proposed Plan.

**Competitive Vehicle Events, Parker 400:** Under the Proposed Plan, the Parker 400 competitive recreation route would be eliminated. This action would not adversely affect opportunities for motorized competitive events in the corridor for the reasons described in Section 4.1.8, (No Action Alternative).

**Competitive Vehicle Events, Johnson Valley to Parker:** Under the Proposed Plan, opportunities to conduct competitive vehicle events in the Johnson Valley to Parker corridor would be provided (see discussion in Section 4.1.8, No Action Alternative).

**Competitive Vehicle Events, Multiple-Use Class Guidelines:** Competitive motorized-vehicle events in which speed is the primary competitive factor would be prohibited under the Proposed Plan except within the Johnson Valley to Parker corridor and Off-Highway Vehicle Recreation Areas. However, the two existing Off-Highway Vehicle Recreation Areas in the planning area are closed under this alternative.

No adverse impacts to opportunities for competitive vehicle events in the two Off-Highway Vehicle Recreation Areas are anticipated. The BLM has never received an application for a special recreation permit to conduct a competitive vehicle event in either area since their designation in 1980 through the California Desert Conservation Area Plan, though it is not known whether interest in conducting such an event at these locations would be expressed in the future. Eliminating opportunities for competitive vehicle events outside approved competitive race corridors and outside Off-Highway Vehicle Recreation Areas affects recreation in the same manner as described under Issue 5 of Section 4.1.8 (No Action Alternative).

**Rockhounding:** Under the Proposed Plan, existing motorized-vehicle access to rockhound collection areas would be largely retained (see Map 2-32 depicting the motorized-vehicle network of open routes under this alternative and Map 4-2 depicting Rockhounding areas). Hence, opportunities for this activity would be largely unaffected.

**California Back Country Discovery Trails:** All routes identified as components of the California Back Country Discovery Trails system (see Section 3.8.7) would be available for motorized-vehicle use under the Proposed Plan. Hence, opportunities for travel on Discovery Trails, upon designation, would not be affected.

#### **From Issue 6: Land Ownership Pattern**

Impacts to recreation from the acquisition and disposal of lands under the Proposed Plan are the same as described under Issue 6 of Section 4.1.8 (No Action Alternative).

#### **Summary of Impacts**

Impacts to recreation are essentially the same as described for the No Action Alternative (see Section 4.1.8). The mileage of routes available for motorized-vehicle use would not change under the Proposed Plan. Opportunities stopping, parking, and vehicle camping; competitive events in the Johnson Valley to Parker corridor; Rock-hounding; and future travel on California Back Country Discovery Trails would be the same

#### **4.2.10 Mineral Management**

The following effects would be additional or changes to effects described in the No Action Alternative. No attempt is made to quantify the number of people, companies, or operations affected by the following.

##### **From Issue 1: Standards and Guidelines**

Minerals operations would be subject to some additional mitigation and reclamation requirements that would result in slight to modest increases in the cost of operation and shutdown phases.

##### **From Issue 2: Recovery of the Desert Tortoise**

The compensation requirement would be simplified to one formula (5:1 ratio) but would increase for small operations that would have had been guided by less than a 5:1 ratio and possibly reduce for the few very large operations that would have met a 6:1 ratio requirement. In areas where MUC M changes to MUC L casual use would be subject to more costly and time consuming plans of operations and NEPA review. Nearly all operations would benefit from the authorization streamlining of the 100 acres programmatic plan consultation with the U.S. Fish and Wildlife Service. Mineralized lands currently included in areas no longer covered by critical habitat, especially part of the Chocolate Mountains-Picacho gold belt, would not be subject to DWMA/Critical Habitat management prescriptions, but would still be subject to standard tortoise mitigation. Requiring a performance bond and performance standards for reclamation would increase the cost for all surface-disturbing operations regardless of size. From an analysis of the reasonably foreseeable future, it is anticipated that no operations would be restricted due to the 1 percent surface disturbance limitation.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Minerals operations in WHMAs would be subject to a variety of small scale surveys, mitigation, compensation, and reclamation requirements that would result in a slight increase in the cost of operations and closure. The nature and degree of requirements would vary with the nature of habitats, species and time of year. Access and valid existing rights would not change and mining restrictions would not be added. This includes mining opportunities in the Eagle Mountain area where MUC I would change to MUC L/M, and salt extraction mining on Bristol, Cadiz, and Danby playas which would be included in the system of WHMAs.

##### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

There would be a slight additional loss of access from closing non-routes which could affect casual mining activity. Authorized use of closed routes would be considered for authorized mining activities which would affect such activities to the extent of time and costs of gaining necessary authorization.

### **From Issue 6: Land Ownership Pattern**

Consolidations of land ownership would be a benefit, in that access and operations involving single, uncomplicated ownership patterns could simplify legal aspects of mining rights as long as surface and mineral estates were not split. Acquired lands in areas not already withdrawn from mineral entry would be open to mineral entry. Public lands which would be disposed to private ownership could be developed for mineral values depending upon the disposition of the new land owner.

### **Summary of Impacts**

Proposed designations and management prescriptions for species and habitats would continue the trend of reducing ecological impacts, with only to small additional costs to conducting the search for and development of minerals. While access to minerals has considerably diminished over several years due to a variety of designations, a more sophisticated approach to ecosystem management, proposed in this plan, should obviate the need for further species listings. Since this plan is both strategic, programmatic, and multi-agency cooperative in nature, permit processing and NEPA document writing time should be greatly reduced.

#### **4.2.11 Cultural Management**

##### **From Issue 1: Standards and Guidelines**

Analysis is the same as the No-Action Alternative except that Regional Standards for Public Land Health are applied.

##### **From Issue 2: Recovery of the Desert Tortoise**

Under the Proposed Plan, there would be no change to the Cultural Resources Element of the CDCA Plan. The Proposed Plan would designate the Chemehuevi and Chuckwalla DWMA's, encompassing approximately 1,703,159 acres, for the protection of desert tortoise and significant natural resources. All MUC Class M lands within the DWMA's would be designated as MUC Class L. Cumulative new surface disturbance on federal and percent administered lands would be limited to 1 percent of the federal/ percent proportion of the DWMA. The establishment of DWMA's would result in no measurable impacts to cultural resources. The DWMA's would result in increased protection and preservation of cultural resources within the DWMA boundaries by limiting the activities that would affect cultural resources by capping the cumulative surface disturbance allowed. Activities that would promote recovery of the Desert Tortoise, such as fencing, bridge, or culvert construction would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

**Grazing Management:** Range lease renewals and proposals for range improvements would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources. Approximately 21,606 acres of the Lazy Daisy cattle allotment would be allocated to recovery and conservation of the desert tortoise. This would also eliminate the threats to cultural resources from grazing in this area, as well as impacts from range improvements that would have occurred to support

grazing in this area. Although there could be an increase in threats to cultural resources as a result of intensified grazing use within the remaining allotment boundaries, past grazing patterns and herd densities would indicate that impacts from intensification would not be significant. There are 45 recorded cultural resources located within the existing allotment boundaries (see Table 4-10). These sites would remain within the diminished allotment boundaries in this alternative and would continue to be threatened by grazing. Grazing use on the Chemehuevi Grazing Allotment (137,321 acres) would be precluded for conservation and recovery of the desert tortoise. This would eliminate the threats from grazing to the 55 recorded sites located within the boundaries of the allotment.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

In the Proposed Plan, MUC Class designations in the Eagle Mountains area would be changed from Intensive Use to Limited Use in the proposed Bighorn Sheep WHMA. Fencing would be programmatically proposed around hazards to bighorn sheep. The Ford Dry Lake domestic sheep allotment would be no longer available for grazing use. The Rice Valley domestic sheep allotment boundaries would further refined with a loss of 9,264 acres. Both allotments currently encompass 135,247 acres of land.

Seven sites are recorded within the Rice Valley allotment and 53 sites are recorded in the Ford Dry Lake allotment (Table 4-10). Loss of the Ford Dry Lake allotment would remove 49,682 acres from grazing and would eliminate the threat from grazing to the 53 recorded sites within the allotment. Seven recorded sites would still remain within the boundaries of the Rice Valley allotment. The loss of size of this allotment would not substantially change the level protection and preservation of recorded cultural resources, but would eliminate threats to sites that would remain in the closed area.

There are 137 new water development (guzzler) locations identified in this alternative. Of these locations, nineteen are located within a quarter mile of a recorded cultural resource. Proposals for new water developments would continue to be reviewed as they are proposed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

### **From Issue 4: Wild Horses and Burros**

Analysis is the same as the No-Action alternative. Under the Proposed Plan, existing Herd Management Areas are combined and reduced in size to 371,172 acres. Herd populations will be managed below the numbers prescribed in the No-Action alternative. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of an "undertaking", such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

The Proposed Plan would remove 537,272 acres from management for Wild Horse and Burro herds. This would result in a positive benefit to cultural resources by reducing the number of known sites

subject to impact from herd behavior by 417 sites. There are 399 recorded cultural resources identified within the boundaries of the HMAs for this alternative, as shown in Table 4-11.

#### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations**

In the Proposed Plan, routes outside DWMAAs would permit casual use activities within 300' of a route (600' wide Area of Potential Effect (APE)). Inside DWMAAs, activities would be limited to within 100' of a route (200' wide APE).

There are 4,982 miles of routes on public lands identified in the NECO planning area, of which 4,743 miles of unpaved routes would be available for vehicle travel under the Proposed Plan. For most of the routes in the planning area, our knowledge and understanding of cultural resources and effects is limited. Records indicate that 444 cultural resources have been identified that are on BLM lands and would be located within the 600' corridor (APE) for routes proposed "open" outside the DWMAAs (Table 4-12). Sixty-eight cultural resources would be located within in the 200' corridor (APE) for routes inside the DWMAAs. Of the cultural resources recorded within the APE, 153 sites have been listed, determined eligible, or would be considered potentially eligible for the National Register of Historic Places (NHRP). One hundred thirty-one cultural resources are considered to have qualities and values that would be affected by activities authorized within the APE.

Section 106 of the NHPA, as implemented in the CDCA Programmatic Agreement and BLM Protocol with SHPO, provides for cultural resources inventory, identification, and evaluation as part of the route designation process. Because of the size and scale of the route network, the designation of routes of travel for this alternative would create unusual challenges to completing adequate cultural resources inventory and evaluation of effects in advance of the route designation process. To satisfy agency responsibilities under Section 106 for this alternative, BLM would propose and develop, in consultation with the SHPO, a phased inventory and evaluation strategy to address the issue of effects on historic properties. Since the decisions in the NECO Plan are amendments to the existing CDCA Plan and serve to implement planning decisions prescribed in the CDCA Plan, BLM would propose to amend the CDCA Programmatic Agreement with SHPO to formalize the implementation of a phased cultural resources strategy for routes of travel within the NECO planning area. The agreement would define the nature of the undertaking and the level of effort necessary to address effects, allow the designation of "open" routes to proceed, provide for a phased identification and evaluation effort over a specific period of time, provide for consultation with SHPO, interested persons, and tribal entities over the design and implementation of identification efforts, and provide remedies (route closure, mitigation) when eligible cultural resources would be determined to be affected. Implementation of the amendment to the CDCA Programmatic Agreement would satisfy agency responsibilities under Section 106 of the NHPA.

The Proposed Plan would eliminate threats to cultural resources along routes that would be "closed". This would eliminate the threat to 552 cultural resources located within the APE for routes that are currently undesignated, but available, for motorized vehicle use. For the 444 cultural resources that would remain within the APE for routes proposed "open", there would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by on-going use patterns that have existed over the past century. There



would be no measurable affects on some resources while others would experience a cumulative degrading of integrity and context over time. In this alternative, adverse effects to historic properties as they are identified would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

**Competitive Off-Highway Vehicle Events:** Under the Proposed Plan, the Parker 400 competitive recreation route would be eliminated, reducing the linear miles of competitive recreation routes from 205 to 130 miles. This would eliminate the threats to 18 recorded cultural resources. There are no recorded cultural resources located within 300' APE of the remaining race corridor. The Johnson Valley to Parker Route would be remain available for competitive recreation events. Event specific EAs would be required for competitive off-road vehicle events. These events would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

**From Issue 6: Land Ownership Pattern**

Analysis is the same as No-Action Alternative.

**From Issue 7: Access to Resources for Economic and Social Needs**

Analysis is the same as No-Action Alternative.

**From Issue 8: Incorporation of Wilderness Areas into CDCA Plan**

Analysis is the same as No-Action Alternative.

**Summary of Impacts**

In the Proposed Plan, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There will be a direct benefit to cultural resources by removing the Chemehuevi Range Allotment and portions of the Lazy Daisy from grazing, and reducing the size of burro Herd Management Areas. There will be further benefit in changing MUC classifications from M to L, as well as limiting cumulative surface disturbance within DWMA's to one percent. Reduction of the authorized use area along routes in DWMA's to 100', will directly benefit cultural resources by reducing threats from off-highway vehicle, camping, and parking along those routes. There will also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

#### **4.2.12 Lands and Land Use Authorization**

The following effects would be additional or changes to effects described in the No Action Alternative. No attempt is made to quantify the number people, companies, or actions affected by the following.

##### **From Issue 1: Standards and Guidelines**

Lands actions could be subject to some additional mitigation and reclamation requirements that might result in slight increases in the cost of operation and shutdown phases.

##### **From Issue 2: Recovery of the Desert Tortoise**

Compensation requirement would be simplified to one formula, but would increase for small actions that would have had been guided by less than 5:1 ratio and possibly reduce for the few very large operations that would have met a 6:1 ratio requirement. In areas where MUC M changes to MUC L there would be little difference in management given that the areas of change are currently in critical habitat. Given that this alternative provides strategic management approach and programmatic consultation for the desert tortoise, nearly all lands actions would benefit from processing and authorization streamlining. There is a good chance that this alternative reduces or eliminates additional species listing which in turn would stabilize costs and processing issues. Some lands currently in critical habitat would be excluded from DWMA, but would still be subject to standard tortoise mitigation. Requiring a performance bond and performance standards for reclamation would increase the cost for all lands actions on public lands. From an analysis of the reasonably foreseeable future it is anticipated that few if any proposed lands actions would be restricted due to the 1 percent surface disturbance limitation; however, in light of unknown demand and the long-term implication of this limitation, it is possible that some proposals for which decisions are discretionary could be denied or relocated to a location outside DWMA. The proposed limited closures would have little effect as demand for such lands applications is very low or does not exist.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Lands actions proposals in WHMAs could be subject to a variety of small scale surveys, mitigation, compensation, and reclamation requirements that would result a slight increase in the cost of operation and slight increase in the cost of shutdown of operations. The nature and degree of requirements would vary with the nature of habitats and species and time of year. Given that this alternative provides strategic multi-species management and is coordinated among several management and regulatory agencies, nearly all lands actions would benefit from processing and authorization streamlining. There is a good chance that this alternative reduces or eliminates additional species listing which in turn would stabilize costs and processing issues.

##### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

There would be not additional impacts here from the No Action Alternative.

### **From Issue 6: Land Ownership Pattern**

Consolidations of land ownership is greater than in the No Action Alternative and could be even more beneficial to land actions where there are single, uncomplicated ownership patterns.

### **Summary of Impacts**

This alternative results in increased operational costs due to species and habitats conservation. While costs may rise, the time required for processing should be shortened.

### **4.2.13 Socio-Economic Values**

#### **From Issue 1: Standards and Guidelines**

Socio-economic impacts would be similar to the No Action Alternative for the Lazy Daisy and Rice Valley Allotments. Potential grazing use of Chemehuevi and Ford Dry Lake Allotments would no longer be available for cattle or domestic sheep use.

#### **From Issue 2: Recovery of the Desert Tortoise**

Potential cattle use on the Chemehuevi Allotment would no longer be available under this alternative. Since there is not a lessee for the Chemehuevi Allotment, there would be no economic impact to the lessee. However, the former lessee (deceased) of the Chemehuevi Allotment was a native American associated with the adjacent Chemehuevi Valley Indian Reservation. Close relatives with personal ties to past grazing activities and social events on the allotment would like to see grazing use continue with a member of their family as the lessee.

The northeast portion Lazy Daisy Allotment would be excluded from cattle uses under this alternative. Cattle seldom use this area due to lack of feed and water. The loss of the area would not reduce the perennial forage allocation because the area is ephemeral rangeland. The loss of this area to the lessee would not be an economic impact to the lessee. Along a similar vein, the loss of future ephemeral grazing use under this alternative for the entire allotment would marginally impact livestock production because requested use by the operator of ephemeral forage production is rare.

Development of a grazing strategy to mitigate cattle impacts to tortoise and their habitats would impact year-to-year continuous grazing use. An estimated four years out of every ten, grazing use in the DWMA would be substantially removed from March 15 to June 15 based on ephemeral forage production of 230 pounds of air-dry weight per acre and a written grazing strategy. The development of a written grazing strategy by the lessee, BLM, and FWS would require the lessee to attend numerous coordination meetings. Grazing use would be substantially removed from the prescribed area during dry years usually at lower elevations in desert tortoise habitat which mimics the No Action Alternative. However, grazing non-use for successive dry years during spring would heavily impact the calving season and would directly reduce the calf-crop.

Under the Proposed Plan, the lessee of the Lazy Daisy Allotment may voluntarily relinquish grazing use and related authorizations. Cattle grazing use would continue until the lessee elects to relinquish the livestock operation, then all grazing activities would cease on 311,280 acres and habitat would be allocated solely for recovery of the desert tortoise. There would be no economic impact with this provision until activated. Based on past events of similar actions, the lessee would receive reasonable financial compensation of the grazing lease just prior to the loss of grazing use. Assuming that to be the case, the lessee would be compensated for his financial investment in the Lazy Daisy Allotment. Cattle grazing activities would cease in the planning area.

Construction of range improvements under this alternative would cost an estimated \$196,010. These new facilities would improve cattle distribution and mitigate impacts to tortoise habitat. Fence, cattleguards, corrals, water sites, and facility pipelines are the types of improvements to be installed. It is anticipated that critical improvements would be completed during short-term. This major section upon the timing and funding sources, development for most improvements could take more than ten years. This alternative is not as costly as subsequent alternatives but greater than the No Action Alternative; however, economic impacts would be substantial to the lessee if required to carry all costs. The lessee's operation would no longer be profitable if required to finance installation of all improvements within the life of the plan.

Grazing receipts would be similar to the No Action Alternative even without Chemehuevi and Ford Dry Lake Allotments. San Bernardino County would not receive grazing receipts if grazing use was relinquished on the Lazy Daisy Allotment.

Requiring compensation at a 5:1 ratio inside DWMA boundaries could cause an impact to certain permitted uses such as mining, communication site construction and utility construction by increasing the amount of compensation required.

No significant socio-economic impacts are anticipated for current mining operations. There are no proposed changes expected in employment and income in the mining sectors economy. Any changes to mining operations that will have socio-economic impact are not known. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Potential socio-economic impacts to the sheep grazing and mining operations are as follows:

Deleting Ford Dry Lake Allotment would have a negative impact on the grazing operator by losing the economic benefit from potential sheep production. The economic impact would be minimal because the allotment is rarely grazed. The Ford Dry Lake Allotment has been grazed twice since 1979. Deleting portions of the Rice Valley Allotment would minimally affect potential sheep production. Administration of the area excluded may affect the lessee with incurred costs to stay east of the new allotment boundary.

Expenses incurred by mining operators due to protecting the bat populations that may roost in adits and shafts has yet to be determined. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Potential socio-economic impacts to recreation operations are as follows:

Restricting stopping, parking and camping to 100 feet will have little impact on the public's access to the planning area. No estimation of recreation visitor day numbers are available, therefore the potential socio-economic impacts associated with vehicle camping in these areas is unknown at this time.

Closure of Ford Dry Lake and Rice Valley open areas would have a minor effect on recreation as very little use has ever been made of these two areas. Closing the Parker 400 and retaining the Johnson Valley - Parker competitive race routes are commensurate with diminishing interest in point to point race events.

Designating routes as "open", "closed," or "limited" will not significantly affect traffic patterns. Less than 5 percent of inventoried routes are proposed for closure, and wash-closed zones will have little to no significant socio-economic effect on the human component.

Closure of Ford Dry Lake and Rice Valley Open Areas would have a minor social effect, as very little use has been made of these two areas.

**From Issue 6: Land Ownership Pattern**

Potential socio-economic impacts to recreation operations are as follows:

In looking at this alternative, there are two categories of land ownership that will potentially have socio-economic impacts. These land adjustments categories relate to public lands that will be in protected zones and private lands that the federal government would like to exchange or purchase. The least complicated adjustments that would be made between the Agency and the owners are the single owner per section proprietorship, and the 2-5 owners per section proprietorship. Table 4-19 shows changes in the acres of land identified by public and private classifications. These totals reflect the "realistic" change within the management areas. Social well-being concerns that may impact private owners' decision-making related to the proposed adjustments and their willingness to participate in increasing public land ownership are unknown at this time.

Working with the fewest number of owners will significantly reduce the cost to the Agency and create less disruption to the owners in the more densely owned parcels. The land available for adjustment in the eastern section of the planning area, closest to the cities of Needles and Blythe, may have the most appeal to some of the private land owners since these are areas of higher population and have the greatest potential for generating revenue from tourism activities. Other

public lands outside of the planning area may need to be considered for exchange in order to accomplish public land consolidation objectives. These exchanges outside the planning area may increase social and economic well-being, and thus have appeal to other private land owners. Accomplishing acquisition through exchanges is the preferred method; however, it is impossible to predict what methods may prevail.

**Table 4-19. Privately Owned Lands with five or less owners per section and Public Lands in Conservation Area, Proposed Plan**

County	Proposed Plan Land Ownership Changes	
	Private <sup>a</sup> , in acres	Public <sup>b</sup> , in acres
Imperial	70,701	533,403
Riverside	100,001	1,593,144
San Bernardino	753,106	1,676,249

<sup>a</sup> These would be included in federal acquisition programs through purchase or exchange.

<sup>b</sup> Total federal lands in Proposed Conservation Zones.

### Summary of Impacts

Overall there would be only minor socio-economic impacts in this alternative because (1) uses and use levels in the planning area are low, and (2) on both an area and restrictive basis proposed changes that affect uses are relatively small. Grazing leases proposed for deletion are seldom used, the OHV open areas are seldom used, and most of the roads to be closed show evidence of disuse or are redundant in nature. Just how difficult it will be to design and implement a grazing strategy for the Lazy Daisy allotment remains to be seen. The increased cost of land use permits and proactive agency conservation efforts would be offset by reduced processing time--i.e., streamlining--and a more simplified pattern of land ownership. The opportunity to relinquish a grazing lease and simplify the land ownership pattern involves willing sellers and fair market compensation. Except for the limitation on surface disturbance in DWMAs, the conservation emphasis in this plan is not on restrictions but proposes cost of doing business (mitigation, compensation, rehabilitation of disturbance, proactive habitat work) commensurate with species and habitat values. One public cost, highway fencing for tortoise in DWMAs, is very high, as well as potential tax base loss for counties. If all the measures work over time, then little to no additional restrictions would be required in the future from species and habitat listings/issues.

### 4.3 Small DWMA--A Alternative

This major section discusses the environmental consequences of the Small Desert Wildlife Management Area--A Alternative in sub-sections for the resource areas identified in Chapter 3. Within each sub-section, issues relevant to that resource are discussed and are followed by a summary of impacts for the resource.

#### 4.3.1 Air Quality

##### **From Issue 1: Standards and Guidelines**

The impacts associated with this alternative is similar to the Proposed Plan.

##### **From Issue 2: Recovery of the Desert Tortoise**

The designation of approximately 1,384,310 acres of federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA (ACEC) reduces the amount of grazing by 277,678 acres and designates routes as open, closed or limited. The reduction in surface disturbance is 46 percent more than the Proposed Plan and there would be a positive benefit to air quality from reduction of PM<sub>10</sub> emissions in the Lazy Daisy allotment. Wildfire suppression efforts would result in reduced particulate (PM<sub>10</sub>) production and visibility impairment from smoke and wild-blown dust.

##### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Air quality would be enhanced by limiting future off-road vehicle activity to existing roads and trails. Competitive off-road vehicle activities are deleted from the planning area which will eliminate the airborne particulate matter (PM<sub>10</sub>) produced from events.

#### **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

#### 4.3.2 Water Quality

##### **From Issue 1: Standards and Guidelines**

This alternative is the same as the Proposed Plan.

##### **From Issue 2: Recovery of the Desert Tortoise**

The designation of approximately 1,384,310 acres of federal land as ACECs would have a slight positive effect on water quality through implementation of specific management prescriptions designed to reduce improve water quality and surface disturbance. The deletion of livestock grazing in DWMA's would improve vegetative condition and consequently result in better protective ground

cover and soil-holding capability. Erosion and soil loss would be reduced and water quality improved as a result of better dissipation of energy associated with storm water runoff.

Reduced grazing on 277,678 acres would result in potential improvement in water quality at spring sources through removal of coliform bacteria contamination. The loss of grazing under this alternative is 60 percent greater than the Proposed Plan.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Same as the Proposed Plan.

**Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

**4.3.3 Soil Quality**

**From Issue 1: Standards and Guidelines**

The impacts from this alternative is similar to those discussed in the Proposed Plan.

**From Issue 2: Recovery of the Desert Tortoise**

Impacts to soil quality through implementation of the Small DWMA--A Alternative are similar to the Proposed Plan with the following exception: DWMA size is 18 percent smaller than in the Proposed Plan which will reduce the amount of area managed for improvement of species and habitat.

Reducing area for grazing use by 59 percent with the deletion of Chemehuevi and a portion of the Lazy Daisy Allotments will positively impact soil quality through preservation of vegetative cover and resultant decrease in erosion and soil loss. Additionally, soil compaction which channels and concentrates storm water runoff would be reduced. Although the actual acreage of disturbance is unknown, since cattle don't graze every part of the allotment, it is expected that the potential improvement to soil quality would be significant in highly disturbed areas. Installation of additional improvements would increase soil disturbing impacts (see Proposed Plan). The 638 AUM decrease in the Lazy Daisy Allotment would decrease soil compaction and disturbance.

Under the Small DWMA--A Alternative there would be 637 miles of tortoise fence installed along roads and highways (see Table 2-7). Impacts for this alternative would be similar to the Proposed Plan.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Sheep grazing on Ford Dry Lake and Rice Valley Allotments would cease, and benefits to soil quality derived by this alternative would be slightly better than the Proposed Plan. Fencing all



natural and artificial water sources to prohibit access by burros would result in a measurable stabilization of soil at and adjacent to the water sources that burros currently use.

This alternative is similar to the Proposed Plan for the addition of bighorn sheep and deer artificial water developments.

**From Issue 4: Wild Horses and Burros**

All herd management areas would be managed for zero burro population. Management for zero burro population would result in a measurable, but undefined reduction in soil disturbance and a slow recovery from soil compaction at sites of heavy use. Noticeable changes in soil bulk density would not occur in heavier soils at areas of concentrated grazing or watering use.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Under this alternative there are 4,134 miles of routes available for vehicle use. Assuming the average route is 12 feet wide (Ira Long, BLM, pers. com.), there are 6,013 acres set-aside for vehicle activity in the planning area. Impacts to soil quality are similar to those listed under the No Action Alternative.

**Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

**4.3.4 Biological Resources**

The discussion of the environmental consequences of the Small DWMA--A Alternative for biological resources has been subdivided into Wildlife Management and Vegetation Management.

**4.3.4.1 Wildlife Management**

**From Issue 1: Standards and Guidelines**

The impacts to wild life management for the small DWMA--A Alternative are similar to those of the Proposed Plan.

**From Issue 2: Recovery of the Desert Tortoise**

**Desert Tortoise:** The effects resulting from the Small DWMA--A Alternative on desert tortoise would be similar to the impacts for the Proposed Plan except as described below.

The smaller DWMA's in this alternative are near the minimum size of 1,000 square miles (640,000 acres) recommended in the Recovery Plan for maintenance of a viable population of desert tortoise. Within the DWMA's, surface disturbance would be reduced by restricting stopping and parking to 30 feet from the centerline of the road. This would reduce off-road impacts. Restricting camping

to designated areas rather than allowing it along roads would result in a small reduction of disturbance along routes, but vehicle trail proliferation at designated campsites would likely radiate out at increased levels.

The elimination of non-hunting shooting may reduce tortoise gunshot deaths; however, such mortality is low in these areas (Berry 1986). The requirement that all dogs be on leashes in the DWMA would have unknown benefits because the amount of harassment of tortoises by dogs is not known.

The Chemehuevi Allotment would be reduced to only the area affected in the DWMA rather than entirely as in the Proposed Plan. Effects on desert tortoise would remain as in the No Action Alternative in tortoise habitat outside of the DWMA. However, grazing has been infrequent (not at all for 10 years) and would be only a few head of cattle. The benefits of not grazing the Lazy Daisy Allotment within the DWMA would be greater since that allotment is grazed at light to moderate levels during the tortoise above ground season; however, the DWMA in this alternative has been reduced from the Proposed Plan precisely where grazing occurs. So effects on actual tortoise populations are about the same as the Proposed Plan. Overall, about 120,000 acres (5 percent) of existing critical habitat would still be grazed in the Lazy Daisy Allotment.

The fencing of more than 637 miles of highway and railway in this alternative would have similar effects to those described in the Proposed Plan but over much greater length than the 208 miles in that alternative.

**Bighorn Sheep:** The impacts of the Small DWMA--A Alternative on bighorn sheep would be similar to the impacts described for the Proposed Plan except as described below.

The loss of cattle grazing from the DWMA would result in a small loss of almost 27,000 acres in the amount of occupied range that is grazed by cattle (Table 4-20) compared to the Proposed Plan. It would also reduce the amount of movement corridor that is grazed by almost 75,000 acres. Benefits to bighorn sheep are likely to be small because the DWMA would cover the lower elevations that bighorn sheep seldom use.

**Table 4-20. Areas for three categories of Bighorn Sheep use in Cattle Grazing Allotments in the NECO Planning Area**

Bighorn sheep use categories	Lazy Daisy Cattle		Chemehuevi Cattle	
	Acres	Percent of area	Acres	Percent of Area
Occupied Range	100,562	6	1,148	<1
Unoccupied Former Range	0	0	0	0
Movement Corridor	58,608	10	33,793	6

**Other Special Status Animals:** The impacts of the Small DWMA--A Alternative on other special status animals would be similar in nature to the impacts described for the Proposed Plan. Specific differences in impacts between the Proposed Plan and the Small DWMA--A Alternative are described below. Table N-11 Appendix N shows the acres and percent of the range of each special status animal within the Small DWMA.

Benefits (e.g., compensation, fencing boundaries, changes in fire management practices, restrictions on vegetation harvesting, designated campsites, land acquisition) of designation of the DWMA are similar to those described for natural communities..

The fencing of 637 miles of highways, roads, and railroads (Table 2-7) would reduce roadkills, but, on the other hand, they would create a barrier to animal movements over a much greater length than in the Proposed Plan with 208 miles of fencing.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Desert Tortoise:** Ford Dry Lake and Rice Valley Sheep Allotments would be allocated for reestablishment of bighorn sheep demes. Nevertheless, there would be only slight benefit to tortoise populations in those areas because (1) these areas are outside of proposed tortoise DWMA in lower tortoise density habitats, and (2) these allotments are lightly and infrequently grazed, only in years of high annual plant production when competition with tortoises would be lowest.

**Bighorn Sheep:** Impacts are similar to the Proposed Plan with the following exception:

The loss of the Ford Dry Lake and Rice Valley sheep allotments would lessen opportunities for disease transmission to bighorn sheep. Removal of burros would eliminate competition for water and space at these sites and eliminate competition for forage in these areas.

**Other Special Status Species:** Impacts are similar to the Proposed Plan.

### **From Issue 4: Wild Horses and Burros**

Presuming that all burros were removed over time, the deletion of the burro herd management areas would eliminate all adverse impacts of burros on desert tortoise, bighorn sheep, burro deer, and other special status species as described in the No Action Alternative.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Desert Tortoise:** The effects resulting from the Small DWMA--A Alternative on desert tortoise would be similar to the impacts described for the Proposed Plan except that (1) impacts of the route network would be reduced even further by a lower route network of to 4,134 miles of designated route, (2) the elimination of driving in washes in the "washes closed zones" in the two DWMA would increase to 491,645 square miles and reduce adverse impacts accordingly, and (3) impacts of camping would be reduced as the distance off of roads is reduced from 100 to 30-foot from centerline.

**Bighorn Sheep and Other Special Status Animals:** The effects resulting from the Small DWMA--A Alternative on bighorn sheep and other special status species would be similar to the impacts described for the Proposed Plan.

**From Issue : Land Ownership Pattern**

The impacts in this alternative would be the same as the Proposed Plan.

**Summary of Impacts**

*General Wildlife*

The effects on general wildlife will be similar to the Proposed Plan except for the following.

Two of the DWMA's are smaller, and so associated conservation measures will affect general wildlife over a smaller area; however, the multi-species WHMA will be increased accordingly.

The grazing area of the Lazy Daisy Allotment will be limited even more, increasing benefits to general wildlife. Increased highway fencing will potentially provide greater benefits (i.e., reduced runover mortality) can be found for this increased level of fencing. The elimination of horse and burro herd management areas (and horses and burros) will improve habitat conditions for general wildlife, especially migrating songbirds and bats and mammals using watering sites.

*Desert Tortoise*

The effects on desert tortoise will be similar to the Proposed Plan except for the following:

Two of the DWMA's are smaller, and so associated tortoise conservation measures will provide benefits over a smaller area. The area for grazing use in the Lazy Daisy Allotment will be limited even more than the Proposed Plan, further reducing trampling of tortoises and burrows and potential competition for forage. Increased highway fencing will further reduce tortoise runover mortality, if funds can be found for this increased level of fencing.

*Other Special Status Animals*

The effects on other special status species will be similar to the Proposed Plan except for the following.

The beneficial effects of designation of the DWMA's and the associated conservation measures will be less due to the smaller size of two DWMA's; however, the Multi-species WHMA will be increased accordingly.

The elimination of horse and burro herd management areas (and horses and burros) will improve habitat conditions for special status species that use riparian habitats and natural water sources, such as bighorn sheep, burro deer, and various birds.

Two additional bighorn sheep demes (five total demes) will be reestablished, thereby increasing the viability of the bighorn sheep metapopulation.

The withdrawal from mineral entry of significant bat roosts will provide protection against destruction of some habitat due to mining.

**4.3.4.2 Vegetation Management**

**From Issue 1: Standards and Guidelines**

Impacts of the Small DWMA--A Alternatives are similar to those described for the Proposed Plan.

**From Issue 2: Recovery of the Desert Tortoise**

The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in this Alternative would be similar to the impacts described for the Proposed Plan. Specific differences in impacts between this Alternative (Small DWMA--A) and the Proposed Plan are described below.

**Natural Communities:** Impacts on natural communities are similar to those in the Proposed Plan but greater due to the smaller sizes of the proposed DWMA's and, hence, reduced area of protection. Table 4-21 shows the acres and percent of total of each natural community within the 1,384,310 acres in the DWMA's. The greatest reductions are for Mojave Desert Scrub which drops from 29 percent in the Proposed Plan to 17 percent in this alternative, and Desert Dry Wash Woodland which drops from 46 percent in the Proposed Plan to 28 percent in this alternative. Although the level of conservation management is less, the DWMA's can still be viewed as augmenting the portions of each natural community that are in JTNP, CMAGR, and BLM wilderness.

**Table 4-21. Areas of each Natural Community within Small DWMA's.**

Natural Community	Small DWMA's	
	Acres	Percent of Area
Sonoran Desert Scrub	1,053,756	28
Mojave Desert Scrub	135,751	17
Desert Dry Wash Woodland	192,352	28
Mojave Pinyon/Juniper Woodland	0	0
Desert Chenopod Scrub	0	0
Playas	1,142	1
Springs and Seeps (no. of sites)	33	24

Comparing the No Action Alternative to the Small DWMA--A Alternative (Table 4-22), cattle grazing is further limited in Sonoran Desert Scrub (from 247,420 ac. to 61,490 ac.) and in Mojave Desert Scrub (from 207,450 ac. to 163,197 ac.) based on forage allocations for two cattle allotments to benefit desert tortoise. The impacts of grazing on natural communities as described in the No Action Alternative would be reduced accordingly. Compared to the Proposed Plan, areas of cattle grazing would be reduced from 470,207 acres in the No Action Alternative to 192,529 in this (Small DWMA A) Alternative. The Proposed Plan would retain cattle grazing on about 311,280 acres.

**Table 4-22. Areas of each Natural Community within BLM Grazing Allotments, in acres and percent of total**

Natural Community	Lazy Daisy Cattle		Chemehuevi Cattle		Total
	Acres	%	Acres	%	Acres
Sonoran Desert Scrub	25,871	1	35,619	1	61,491
Mojave Desert Scrub	163,197	20			163,197
Desert Dry Wash Woodland	1,493	<1			1,493
Mojave Pinyon/Juniper Woodland	1,928	100			1,928
Desert Chenopod Scrub	0				0
Playas	0				0
Springs and Seeps (no. of sites)	15	11			15
Sand Dunes	0				0
<b>All NECO lands</b>	<b>192,504</b>	<b>4</b>	<b>35,619</b>	<b>&lt;1</b>	<b>228,124</b>

The net effects of the restriction on camping to designated sites is difficult to assess. Whereas light impacts scattered along existing routes would be reduced, vehicle associated impacts at the designated campsites would increase in size.

**Ecosystem processes:** Fencing of major highways, roads, and railroads would increase from 208 miles in the Proposed Plan to 637 miles in this Alternative. This will provide greater protection from vehicle kills to the animal component of the bisected natural communities. In addition, this will result in reduced amount of carrion used by ravens for food. Reductions in this source of food would presumably reduce raven populations closer to the natural levels at which predation by ravens on other species would be sustainable.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

The impacts would be the same as those described for the Proposed Plan except that the amount of DWMA is lower and the amount of WHMA is higher. (In Table N-12 Appendix N the total Conservation Zone figures are the same.)

**From Issue 4: Wild Horses and Burros**

The impacts described in the No Action Alternative would not occur because all wild horses and burros would be removed from the planning area.

**From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Natural Communities and Noxious Weeds:** The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in this Alternative would be similar to the impacts described for the Proposed Alternative. However, they would be less in quantity because the network of routes would be 4,134 miles rather than 4,743 miles as in the Proposed Plan.

The effects of competitive events described for the No Action Alternative would be eliminated in this Alternative because the Parker 400 competitive event route, the Johnson Valley to Parker competitive event route, and the allowance of competitive events out of off-highway vehicle open areas would be eliminated.

**Summary of Impacts**

Effects on general vegetation will be similar to the Proposed Plan except for two items. First, the reduced DWMA size will result in less benefit from that designation and the associated conservation measures. Second, the elimination of burros from HMAs will eliminate impacts of grazing and trampling by these animals, especially near watering sites.

**4.3.5 Wilderness Management**

Site-specific projects to 1) implement the National Fallback standards and guidelines; 2) facilitate recovery of desert tortoise; and 3) protect special status plants and animals require separate environmental review, including a "minimum tool analysis" which specifies the manner in which projects would be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

**From Issue 1: Standards and Guidelines**

Impacts would be the same as described for the Proposed Plan (see Section 4.2.5).

### **From Issue 2: Recovery of the Desert Tortoise**

Managing Desert Wildlife Management Areas (DWMAs) as prescribed under the Small DWMA--A Alternative would benefit resource values in wilderness where improvements to vegetation composition and habitats for special status species occur. By improving resource conditions, the wilderness character of lands so designated would be promoted.

DWMAs designated under this alternative encompass all or portions of the following wilderness areas: Clipper Mountains, Piute Mountains, Bigelow Cholla Garden, Stepladder Mountains, Turtle Mountains, Mecca Hills, Orocopia Mountains, Chuckwalla Mountains, and Little Chuckwalla Mountains (see Maps 2-6 and 2-38). In contrast to the Proposed Plan, no parts of the Old Woman Mountains or Palo Verde Mountains wilderness areas occur within DWMAs.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Under the Small DWMA--A Alternative, actions relative to the management of special status species and natural communities in wilderness, including development of new drinkers to ensure long-term viability of the Sonoran Bighorn Sheep Metapopulation and installation of bat gates on caves and mine roosts where there is significant potential for negative effects from human intrusion, would be the same as those prescribed under the Proposed Plan, except that fences excluding burros from water sources would be removed once the burro population is reduced to zero. A specific proposal regarding the numbers and locations of fence enclosures is deferred. Hence, the effects of actions in wilderness under this alternative that maintain or enhance populations of special status animals and plants, and preserve or restore natural communities would be the same as those described for the Proposed Plan (see Section 4.2.5).

### **From Issue 4: Wild Horses and Burros**

Eliminating all burro Herd Management Areas in the NECO planning area and in the adjacent Arizona jurisdiction, would benefit wilderness resource values by eliminating negative impacts associated with burros.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Under the Small DWMA--A Alternative, competitive off-highway vehicle events in which speed is the primary factor would be restricted to Off-Highway Vehicle Recreation Areas. With closure of the Ford Dry Lake and Rice Valley Dunes Off-Highway Vehicle Recreation Areas, all opportunities for such events would be eliminated in the NECO planning area. Hence, all potential for impacts to wilderness resources from competitive vehicle events in the Rice Valley Dunes Off-Highway Vehicle Recreation Area (which abuts the Rice Valley Wilderness), the Parker 400 corridor (which abuts the Turtle Mountains, Stepladder Mountains and Whipple Mountains wilderness areas), and Johnson Valley to Parker corridor (which abuts the Sheep Hole Valley Wilderness) would be eliminated.



### **From Issue 6: Land Ownership Pattern**

Actively seeking to acquire lands or interests in lands within DWMA's and WHMA's adds to existing policy regarding land acquisition in wilderness (see Section 2.6.4). The discussion in Section 4.1.5, Issue 6 (No Action Alternative) regarding acquisition of additional lands in wilderness is applicable to the Small DWMA A Alternative.

### **Summary of Impacts**

Impacts are essentially the same as described in Section 4.2.5 for the Proposed Plan, except that negative effects from burros and threats from vehicle incursions during competitive vehicle events would be completely eliminated.

### **4.3.6 Livestock Grazing Management**

#### **From Issue 1: Standards and Guidelines**

Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

#### **From Issue 2: Recovery of the Desert Tortoise**

There would be an estimated 42 percent loss of grazing lands in the Lazy Daisy Allotment; however, not all of the excluded land produce perennial forage. An estimated 20 percent of the perennial forage (638 AUMs) would be excluded from the northern portion of the allotment. This limits the amount of grazing use to 2,554 AUMs or 212 cattle for year-long grazing use. No ephemeral use could be authorized. This 20 percent loss in cattle use is significant when compared to the Proposed Plan. The loss of ephemeral grazing use coupled with a permanent grazing limit of 638 AUMs would reduce potential revenue. Therefore, the lessee's financial flexibility would be hindered when adjustments are necessary to purchase or sell cattle during fluctuating markets. This is a significant and adverse consequence to the lessee because it would be difficult to recoup financial losses during drier years or poor cattle markets. The loss of financial flexibility and loss in the size of the lease results in a less viable operation compared to the No Action Alternative.

Current terms and conditions would become a condition of the Lazy Daisy lease. The Chemehuevi Allotment would no longer be available for cattle use and future livestock production would cease.

Construction of range improvements under this alternative would be the most costly, and would have the largest impacts to soils and vegetation of any of the alternatives (Chapter 2, Table 2-8). Most improvements are necessary to keep cattle out of the DWMA and to improve cattle distribution in the smaller allotment. These improvements would not be completed during the short-term and, depending upon the funding sources, it would take more than ten years to complete. The financial burden for construction is great under this alternative and most improvements would have phased construction periods over the long-term.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

The result of deleting the Ford Dry Lake and the Rice Valley domestic sheep grazing allotments would be a complete removal of livestock production from these areas. However, the impact to the grazing operators would be negligible because the leases are so infrequently grazed.

**4.3.7 Wild Horses and Burro Management**

**From Issue 1: Standards and Guidelines**

Burros are to be removed from all herd areas located in the NECO planning area. Allotments overlapping these areas would not be subjected to burro activity that could cause standards to fail.

**From Issue 2: Recovery of the Desert Tortoise**

This Small DWMA--A Alternative has the most significant negative impacts to burros in which all burros would be removed from the NECO planning area including portions along the California side of the Colorado River (see Table 4-23).

The following table compares the No Action and the Small DWMA--A Alternatives in relation to burro HMA acreage and burro Appropriate Management Levels (AML).

**Table 4-23. Comparison of Herd Management Areas and Appropriate Management Level for No Action and Small DWMA--A Alternatives**

Burro HMAs	No Action Alternative		Small DWMA--A Alternative	
	HMA Acreage	AML	HMA Acreage	AML
Piute Mtn.	0	0	0	0
Chemehuevi	406,894	150 <sup>a</sup>	0	0
Havasu (AZ)	78,952	150 <sup>a</sup>	0	0
Chocolate/Mule Mtns.	386,069	22	0	0
Cibola/Trigo (AZ)	36,530	190	0	0
<b>Total</b>	<b>908,445</b>	<b>362</b>	<b>0</b>	<b>0</b>

<sup>a</sup> HMAs share common AML

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Certain natural and/or artificial water could be fenced to facilitate removal of burros from the area. Burros would be forced to find alternative unfenced water sources in other geographical areas (which may establish herds outside the herd areas), or burros may die of dehydration.

### **From Issue 4: Wild Horses and Burros**

Impacts to wild burros in the subject lands would be in the form of complete removal. These burros will be placed into the BLM's Wild Horse and Burro Adoption Program. Burros removed by helicopter assisted gathers may experience some physical stress (increased body temperatures, heart rate and respiration) due to the distance animals travel, age and condition of the animals, terrain, physical barriers, weather and if roped, the process of being led into the holding pen. The water trapping method is the least stressful to the burro, the animal may become agitated when it can't get out of the trap and when they are being loaded onto the trailer.

Burros would be transported to either the Kingman (AZ) or Ridgecrest (CA) Wild Horse and Burro Holding Facility and placed into the BLM's National Wild Horse and Burro Adoption Program. They are vaccinated, wormed, freeze branded, tested for Equine Infectious Anemia and given any medical treatment needed prior to being placed up for adoption to the public, which typically takes four to six weeks. Burros removed from their natural environment adjust well to domestication. Burros are adopted for use as pack animals, riding, pulling carts or wagons, guard animals for livestock, and as pets. The BLM's Adopt -A -Horse or Burro Program is the only method available for population control and disposition of wild horses and burros removed from the public lands.

The genetics of the original herds may be irretrievable when all burros are removed from the herd areas.

### **Summary of Impacts**

Within the California Desert District (CDD), there was a total 4,973,514 acres designated as burro herd areas. A total of 3,500,465 acres was designated for the management of 2,747 burros. Currently, there is a total of 1,338,804 acres for the management of 370 burros (see Map 4-1, Appendix A). The Clark Mountain and Chicago Valley HMAs are going through a similar amendment process under the Northern and Eastern Mojave Desert Plan where the Proposed Plan is to eliminate these HMAs, a reduction of 353,522 acres and a combined AML of 72. The remaining HMAs either do not have population of burros (Piper Mountain HMA) or can't support year-long burro populations on public lands (Waucoba/Hunter Mtn. and Lee Flat HMAs). The elimination of the HMAs within the NECO planning area, would almost eliminate wild burros within the CDD. There would be 192,319 acres to manage an AML of 126 burros within 3 separate HMAs. These are management levels below the genetic effective population size, described by Singer and Zeigenfuss (2000). Cothran (2000), describes loss of genetic variability can lead to a reduction in fertility or viability of individuals in a population. The cumulative reductions in habitat available for burros and subsequent reductions in burro populations, has reduced the representation of this species and has likely compromised their gene pool and ability for populations to maintain genetic viable herds within the CDD.

#### 4.3.8/9 Recreation Management and Motorized-Vehicle Access

##### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Motorized-Vehicle Access:** There is a close relationship between the pursuit of recreational activities and motorized-vehicle use in the California desert, whether motorized vehicles are used to drive for pleasure or are simply a means of access to recreation destinations such as campgrounds and wilderness trail heads. It is difficult, if not impossible in many circumstances, to engage in recreational activities in this region without employing a motorized- vehicle in some fashion given the desert's vast expanse and great distances to recreation sites. Therefore, actions which restrict vehicular access may affect opportunities for recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed.

Under the Small DWMA--A Alternative, motorized-vehicle access would be managed consistent with Multiple-Use Class L (Limited Use) guidelines as described in the California Desert Conservation Area Plan irrespective of Multiple-Use Class, except in Multiple-Use Class C (Controlled Use or wilderness) and areas designated "open" for vehicle use. Vehicle access in Multiple-Use Class L (Limited Use) areas is directed toward use of approved routes, that is, routes designated "open" or "limited." In managing motorized-vehicle access, BLM must comply with the criteria at 43 CFR 8342.1 which, in part, require that routes be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Further, special attention must be given to protect endangered or threatened species and their habitats.

To protect the desert tortoise and its habitat, the Chemehuevi and Chuckwalla Desert Wildlife Management Areas would be designated as "washes closed zones" in their entirety. In these "washes closed zones," vehicle use would be restricted to specific routes that are individually designated "open" or "limited." Under this Small DWMA--A Alternative, such routes in DWMA's would be limited to paved roads, maintained dirt routes, and recreational touring routes. To protect other sensitive species and their habitats, certain routes would be designated "closed" based on criteria developed in furtherance of the regulatory criteria at 43 CFR 8342.1(see Table 2-11).

Of the 4,982 miles of inventoried unpaved routes within the planning area, excluding non-routes, partial non-routes, and routes in designated wilderness, Joshua Tree National Park, and the Chocolate Mountains Aerial Gunnery Range, 4,134 miles, or approximately 83 percent, would be available for motorized-vehicle use under this alternative. In addition, washes that constitute existing motorized-vehicle routes, or "navigable" washes, outside "washes closed zones" would be available for use (see Section 3.9.5 for the definition of "navigable" washes). Mileage of wash routes available for use in these "washes open zones" is undetermined.

To protect certain sensitive species and their habitats, 180 miles of inventoried routes would be identified as closed in the NECO planning area (see Table 2-16). This mileage includes routes and route segments that would be designated "closed" on public lands, and routes and route segments on non-public lands for which route designation decisions do not apply.

The overall reduction of motorized-vehicle access on inventoried routes under Small DWMA A Alternative would be greater than under all other alternatives, especially within Desert Wildlife Management Areas where the combined mileage of inventoried unpaved routes available for use represents about 47 percent of the total.

Within the Chemehuevi DWMA, 342 miles of existing routes would be available for motorized-vehicle use, representing approximately 56 percent of the inventoried routes in this DWMA. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone covers 491,645 acres, or 66 percent of the Chemehuevi DWMA.

Within the Chuckwalla DWMA, 239 miles of existing routes would be available for motorized-vehicle use, representing approximately 38 percent of the inventoried routes in this DWMA, excluding non-routes and partial non-routes. Mileage of wash routes no longer available for use in the “washes closed zone” is undetermined; this zone covers 293,589 acres, or 47 percent of the Chuckwalla DWMA.

In WHMAs, there would be 1,168 miles of open routes, and 75 miles of closed routes. Outside DWMAs and WHMAs, there would be 2,385 miles of open routes, and 106 miles of closed routes.

As indicated above, motorized-vehicle access to certain washes that constitute existing routes in “washes closed zones” would be prohibited, though the extent (mileage) of such wash closures is undetermined. Hence, the limitations on motorized-vehicle access cannot be quantified. However, motorized-vehicle access within “washes closed zones” would not be altogether precluded. Access within these zones would be provided via specified routes (see Map 2-33), though the restrictions under this alternative are greater than under the Proposed Plan and No Action Alternatives.

**Stopping, Parking, and Vehicle Camping:** In accordance with the Small DWMA--A Alternative, stopping and parking would be restricted to areas within 30 feet from centerline of an approved route within Desert Wildlife Management Areas (DWMAs). Although the options are more constrained than under other alternatives, the restriction provides adequate space for stopping and parking alongside routes.

Vehicle camping within DWMAs would be allowed only in designated areas. Vehicle camping alongside routes with few restrictions as to location (except as regards distance from a route) has long been a recreational opportunity often unique to public lands. On lands under jurisdiction of the National Park Service, such as Joshua Tree National Park of which the eastern part is located within the NECO planning area, vehicle camping is more restricted, that is, vehicle camping is allowed only in designated sites. The same is true for many areas in national forests and state parks. Whereas areas for camping on public lands in DWMAs are not identified under this alternative, camping in DWMAs would be prohibited until such areas are designated for this activity. The current level of vehicle camping on public lands outside such developed sites as the Corn Springs Campground is unknown, but the activity is known to occur within the Chemehuevi and Chuckwalla DWMAs (BLM staff observations). Opportunities for vehicle camping in these DWMAs, therefore, would diminish under this alternative.

Outside DWMA's, stopping, parking, and vehicle camping would be allowed within 300 feet from the centerline of an approved route, except within sensitive areas such as Areas of Critical Environmental Concern where the limit is 100 feet. The effects of these limitations would be the same as described in Section 4.2.8, Issue 5 (Proposed Plan).

**Competitive Vehicle Events:** Under this alternative, competitive off-highway vehicle events in which speed is the primary factor would be restricted to Off-Highway Vehicle Recreation Areas. The Parker 400 and Johnson Valley to Parker competitive recreation routes would be eliminated. With closure of the Ford Dry Lake and Rice Valley Dunes Off-Highway Vehicle Recreation Areas, all opportunities for such events would be eliminated in the NECO planning area.

No adverse impacts to opportunities for competitive vehicle events in the Parker 400 corridor and the two Off-Highway Vehicle Recreation Areas are anticipated for the following reasons: (1) the Parker 400 event has occurred entirely in Arizona since 1990 and interest in reestablishing the event on the California loop is no longer being expressed (see further discussion in Section 4.1.8, Issue 5, No Action Alternative), and (2) the BLM has never received an application for a special recreation permit to conduct a competitive off-highway vehicle event in either of the two Off-Highway Vehicle Recreation Areas since their designation 1980 through the California Desert Conservation Area Plan, though it is not known whether interest in conducting such an event at these locations would be expressed in the future.

Although a competitive off-highway vehicle event last occurred in the Johnson Valley to Parker corridor in the 1980's, interest has recently been expressed to rekindle a similar event. Under this Small DWMA A Alternative, opportunities to conduct such an event would be eliminated.

**Rockhounding:** Under the Small DWMA--A Alternative, existing motorized-vehicle access to rockhound collection areas would be largely retained outside Desert Wildlife Management Areas (DWMA's), but would be reduced within DWMA's (see Map 2-33 depicting the motorized-vehicle network of open routes under this alternative and Map 4-2 depicting Rockhounding areas). Although access in DWMA's would be retained on paved roads, maintained dirt routes, and recreational touring routes, rockhounding along other routes would be limited to that which can be accomplished by non-motorized means. Collecting more than small samples would be increasingly difficult as the distance from one's vehicle increases given the weight of mineral materials. Hence, constraints on vehicular access would concomitantly constrain opportunities for Rockhounding.

**California Back Country Discovery Trails:** All routes identified as components of the California Back Country Discovery Trails system (see Section 3.8.7) would be available for motorized-vehicle use under this alternative. Hence, opportunities for travel on Discovery Trails, upon designation, would not be affected.

#### **From Issue 6: Land Ownership Pattern**

Impacts to recreation from the acquisition and disposal of lands under the Small DWMA A Alternative would be the same as described under Issue 6 of Section 4.1.8 (No Action Alternative).

### Summary of Impacts

Opportunities for recreation would be most limited under this alternative within the Chemehuevi and Chuckwalla DWMA's. In these areas, motorized-vehicle access would be substantially reduced upon closing an additional 609 miles of routes. These route closures would constrain opportunities for such activities as driving for pleasure (touring) and Rockhounding. Also, opportunities for vehicle camping would altogether be eliminated on public lands in DWMA's until camping areas could be designated. Outside DWMA's, opportunities for recreation would essentially be the same as described under the Proposed Plan except that opportunities for competitive vehicle events would be eliminated.

#### 4.3.10 Mineral Management

The following effects are additional or changes to effects described in the Proposed Plan. No attempt is made to quantify the number people, companies, or operations affected by the following.

##### **From Issue 1: Standards and Guidelines**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

##### **From Issue 2: Recovery of the Desert Tortoise**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, but smaller DWMA's would mean that fewer acres would be subject to described effects.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

##### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

Access in DWMA's would be considerably more reduced, having a greater effect on casual mining activity and creating more instances of access authorizations.

##### **From Issue 6: Land Ownership Pattern**

Extended periods of time may be required to complete acquisition goals as there would be fewer acres in higher priority DWMA's and more acres in lower priority WHMA's.

### Summary of Impacts

There is essentially no difference in Summary of Impacts from those described under the Proposed Plan. The area and effects of DWMA would be less.

#### 4.3.11 Cultural Management

##### **From Issue 1: Standards and Guidelines**

Analysis is the same as the Proposed Plan.

##### **From Issue 2: Recovery of the Desert Tortoise**

Analysis is the same as the Proposed Plan, except that cumulative new surface disturbance on federal and state administered lands would be limited to 3 percent of the federal/state proportion of the DWMA.

**Grazing Management:** Potential grazing use on Chemehuevi Grazing Allotment would be allocated for desert tortoise recovery and conservation. This would eliminate the threats from grazing to the 55 recorded sites located within the boundaries of the allotment. Grazing use on approximately 140,357 acres of the Lazy Daisy cattle allotment would be allocated for recovery of the desert tortoise. This would eliminate the threats from grazing to 18 recorded cultural resources in this area, as well as impacts from range improvements that would have occurred to support grazing. Twenty-seven (27) cultural resources would remain within the reduced allotment boundaries in this alternative (Table 4-10). Although there could be an increase in threats to cultural resources as a result of intensified grazing use within the remaining allotment boundaries, past grazing patterns and herd densities would indicate that impacts from intensification would not be significant.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Analysis is the same as Proposed Plan. In addition, potential grazing use for both the Ford Dry Lake and Rice Valley domestic sheep allotments would be lost. Both allotments currently encompass 135,247 acres of land. Seven sites are recorded within the Rice Valley allotment and 53 sites are recorded in the Ford Dry Lake allotment (Table 4-10). Elimination of the Ford Dry Lake allotment would remove 49,682 acres from grazing and would eliminate the threat from grazing to the 53 known sites within the allotment. Allocation of potential grazing use to potential bighorn sheep habitat in the Rice Valley allotment would remove 85,565 acres from grazing and would eliminate the threat from grazing to the seven recorded sites within the allotment. The loss of these allotments would substantially improve the protection and preservation of cultural resources.

##### **From Issue 4: Wild Horses and Burros**

Under the Small DWMA--A Alternative, Herd Management Areas are eliminated. Herd populations will be removed. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of



an “undertaking”, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

The small DWMA--A Alternative would remove 930,906 908,445 acres from management for Wild Horse and Burro herds. This would result in a positive benefit to cultural resources by reducing the number of known sites subject to impact from herd behavior by 816 sites (Table 4-11).

#### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations**

Analysis and resolution of effects is the same as the Proposed Plan, except that DWMA's are smaller and route corridors within DWMA's would be limited to 60'. For the Small DWMA--A Alternative, 444 cultural resources have been recorded on BLM managed lands within the APE for routes that would be proposed “open” (Table 4-12). Analysis has indicated that 138 cultural resources have either been listed, determined eligible, or would be considered potentially eligible for the National Register and 121 cultural resources would be considered to have qualities and values that might be affected by activities authorized within the APE. This Small DWMA--A Alternative would eliminate 662 recorded cultural resources from threats from motorized vehicle use.

**Competitive Off-Highway Vehicle Events:** Under this alternative, all competitive recreation routes would be eliminated. The 18 recorded sites located within the APE for these corridors would no longer be threatened by activities resulting from competitive recreation events. This would substantially improve the protection and preservation of cultural resources located in proximity to the race corridors.

#### **From Issue 6: Land Ownership Pattern**

Analysis is the same as No-Action Alternative.

#### **From Issue 7: Access to Resources for Economic and Social Needs**

Analysis is the same as No-Action Alternative.

#### **From Issue 8: Incorporation of Wilderness Areas into CDCA Plan**

Analysis is the same as No-Action Alternative.

### **Summary of Impacts**

In the Small DWMA--A Alternative, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There will be a direct benefit to cultural resources by removing the Chemehuevi Range and Lazy Daisy range allotments from grazing, eliminating Herd Management Areas, and limiting cumulative surface disturbance within DWMA's to three percent. There will be further benefit in changing MUC classifications

from Moderate to Limited Use. Reduction of the authorized use area along routes in DWMA's to 30', will directly benefit cultural resources by reducing threats from off-highway vehicle, camping, and parking along those routes. There will also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

#### **4.3.12 Lands and Land Use Authorization**

The following effects are additional or changes to effects described in the Proposed Plan. No attempt is made to quantify the number people, companies, or operations affected by the following.

##### **From Issue 1: Standards and Guidelines**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

##### **From Issue 2: Recovery of the Desert Tortoise**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, but smaller DWMA's would mean that fewer acres would be subject to described effects.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, although the area of WHMA's increases to the extent that DWMA area decreases.

##### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

Access in DWMA's would be considerably more reduced, having a greater effect on casual access to private lands and various right-of-way.

##### **From Issue 6: Land Ownership Pattern**

There would be no essential change other than it may require a longer period of time to complete acquisition goals in this alternative as there would be fewer acres in higher priority DWMA's and more acres in lower priority WHMA's.

#### **Summary of Impacts**

There is essentially no difference in Summary of Impacts from those described under the Proposed Plan. The area and effects of DWMA would be less.

### 4.3.13 Socio-Economic Values

#### **From Issue 1: Standards and Guidelines**

Impacts would be similar to the Proposed Plan.

#### **From Issue 2: Recovery of the Desert Tortoise**

Ephemeral forage for the Chemehuevi Allotment would be allocated to desert tortoise which is similar to the Proposed Plan.

When compared to the No Action Alternative, the Lazy Daisy Allotment would lose 140,357 acres and 638 AUMs of permitted use. The reduced area is desert tortoise habitat and primarily at lower elevation. There is a loss of 20 percent of the AUMs and 42 percent of the grazing area. The economic impact of losing AUMs means the value as potential unit for grazing is reduced. However, losing 42 percent of land does not equate to losing to 42 percent of the forage. The per acre production has increased by 28 percent for the remaining lands. If all of the remaining 192,526 acres were of similar character for grazing, the operation would actually benefit from a smaller unit, more production per acre, and more water sources per unit area. However, the remaining grazing land straddles the Old Woman Mountains with deep canyons that run east, west and south off of the north-south ridge line that can only be approached, and managed one canyon at a time. Therefore, the economic impact to the lessee from losing acreage and AUMs and a substantial loss of management flexibility to use all of the lands would increase costs for additional management efforts by 20 percent.

Construction of range improvements under this alternative would cost an estimated \$309,520. The new facilities would perform similarly to the Proposed Plan and serve to separate cattle from DWMA. Most of the improvements to block cattle movement into the DWMA would be constructed within 10 years. This major section upon the timing and funding sources, development for the remaining improvements could take more than ten years. This alternative has the highest cost for proposed range improvements of any alternatives. Economic impact would be substantial to the lessee if lessee is to pay all the costs required. The lessee's operation would no longer be economically viable if required to finance installation of all improvements within the life of the plan.

Grazing receipts would be similar to the No Action Alternative even without Chemehuevi, Rice Valley, and Ford Dry Lake Allotments. San Bernardino County would continue to receive grazing receipts based on the amount of grazing use.

Requiring compensation at a 5:1 ratio inside DWMA boundaries could cause an impact to certain permitted uses such as mining, communication site construction and utility construction by increasing the amount of compensation required.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Economic impacts to lessees for the loss of Rice Valley and Ford Dry Lake Allotments would be similar to the Proposed Plan.

Expenses incurred by mining operators for protecting the bat populations that my roost in adits and shafts has yet to be determined. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Potential socio-economic impacts to recreation operations are as follows:

- Restricting stopping, parking and camping to 100 feet will have little impact on the public's access to the planning area. No estimation of recreation visitor day numbers are available, therefore the potential socio-economic impacts associated with vehicle camping in these areas is unknown at this time.
- Designating routes as "open", "closed" or "limited" will not significantly affect traffic patterns. About 15 percent of inventoried unpaved routes are proposed for closure and wash-closed zones will have little to no significant socio-economic effect on the human component.
- Effect of greater number of closed wash systems and roads in DWMA's and deletion of all competitive racing through the planning area would have a moderate effect upon recreation opportunities.

### **From Issue 6: Land Ownership Pattern**

In looking at this alternative, there are two categories of land ownership that will potentially have socio-economic impacts. These land adjustments categories relate to public lands that will be in protected zones and private lands that the federal government would like to exchange or purchase. The least complicated adjustments that would be made between the Agency and the owners are the single owner per section proprietorship, and the 2-5 owners per section proprietorship. These data are shown in Table 4-24 by county. These totals reflect the potential change within the management areas. Social well-being concerns that may impact private owners' decision-making related to the proposed adjustments and their willingness to participate in increasing public land ownership are unknown at this time.

Working with the fewest number of owners will significantly reduce the cost to the Agency and create less disruption to the owners in the more densely owned parcels. The land available for adjustment in the eastern section of the planning area, closest to the cities of Needles and Blythe, may have the most appeal to some of the private land owners since there are areas of higher population and have the greatest potential for generating revenue from tourism activities. Other public lands outside of the planning area may need to be considered for exchange in order to accomplish public land consolidation objectives. These exchanges outside the planning area may increase social and

economic well-being, and thus, have appeal to other private land owners. Accomplishing acquisition through exchanges is the preferred method; however it is impossible to predict what methods may prevail.

**Table 4-24. Privately owned lands with five or less owners per section and public lands in conservation area, Small DWMA--A Alternative**

County	Small DWMA--A Alternative Land Ownership Changes	
	Private <sup>a</sup> , in acres	Public <sup>b</sup> , in acres
Imperial	75,577	536,015
Riverside	99,990	1,593,155
San Bernardino	70,354	1,681,111

<sup>a</sup> These would be included in federal acquisition programs through purchase or exchange.

<sup>b</sup> Total federal Lands in Proposed Conservation Zones.

### Summary of Impacts

Same as for the Proposed Plan with the following exceptions. The closing of many more miles of routes and all washes on an area basis in DWMA's and all opportunity for competitive vehicle racing represents a significant reduction of casual use access and driving-based recreation opportunities. Closing the Rice grazing allotment and further reducing the Lazy Daisy allotment could be economically difficult for both allotment holders. Tortoise fencing would be dramatically greater than other alternatives. Overall, this alternative is the most restrictive and impacting of the four described.

#### **4.4 Small DWMA--B Alternative**

This major section discusses the environmental consequences of the Small Desert Wildlife Management Area--B Alternative in sub-sections for the resource areas identified in Chapter 3. Within each sub-section, issues relevant to that resource are discussed and are followed by a summary of impacts for the resource.

##### **4.4.1 Air Quality**

###### **From Issue 1: Standards and Guidelines**

The same as the No Action Alternative.

###### **From Issue 2: Recovery of the Desert Tortoise**

The designation of approximately 1,384,310 acres of federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA (ACEC) reduces the amount of grazing by 176,838 acres and designates routes as open, closed or limited. Although the reduction in surface disturbance is 64 percent less than the Small DWMA--A Alternative, there would be a slight increase in vegetative cover on these acres, reducing the volume of PM<sub>10</sub> emissions.

Reducing grazing by 39 percent will result in positive effects on air quality similar to the Proposed Plan.

Limiting surface disturbing activities to 3 percent versus the 1 percent in The Proposed Plan could impact air quality slightly more by allowing a greater number of surface disturbing activities to occur in the DWMA. These activities could include the removal of vegetation, cover and litter and the disturbance of top soils which increase PM<sub>10</sub> emissions.

Wildfire suppression efforts would result in reduced particulate (PM<sub>10</sub>) production and visibility impairment from smoke and wild-blown dust. Short term impacts from suppression potential increase levels of particulate from surface disturbance of fire fighting equipment and operations. However, successful fire suppression efforts minimize the number of acres impacted as a result of vegetative cover loss.

###### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Same as the Proposed Plan.

##### **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

#### 4.4.2 Water Quality

##### **From Issue 1: Standards and Guidelines**

The same as the Small DWMA--A Alternative.

##### **From Issue 2: Recovery of the Desert Tortoise**

Same as the Small DWMA--A Alternative with the following exception:

Reduced grazing on 47,682 acres is 30 percent less than the Proposed Plan and will likely result in an improvement to water quality at springs where cattle had previously caused some degradation.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Designation of a 50 percent distribution WHMA will have a positive benefit to water quality through the implementation of specific prescriptions aimed at improving habitat condition. Compared to the Proposed Plan, the benefit will be less due to the reduced size of the WHMA.

Closure of routes within 1/4 mile of a natural or artificial water source will have a small positive benefit to water quality by reducing soil erosion, soil loss and sedimentation contamination. Improving vegetative conditions on natural communities such as springs and seeps, dunes and plays and microphyll woodland would have a positive benefit to water quality by improving protective ground cover and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized improving water quality.

#### **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

#### 4.4.3 Soil Quality

##### **From Issue 1: Standards and Guidelines**

Impacts to soil quality are similar to those in the Proposed Plan.

##### **From Issue 2: Recovery of the Desert Tortoise**

Impacts to soil quality through implementation of the Small DWMA--B Alternative are similar to the Proposed Plan with the following exception:

Cattle grazing activities would continue on 293,370 acres causing impacts to soil quality primarily through reduction of vegetative and litter cover to protect soil from erosional processes and, to some

degree, soil compaction that channels and concentrates storm water runoff. Grazing use allocation would be reduced by 20 percent and the area of grazing use would be reduced 38 percent from the No Action Alternative which would result in decreased soil compaction and soil surface disturbance on 176,837 acres.

Limiting surface disturbing activities to 3 percent versus the 1 percent in the Proposed Plan results in potentially larger area for soil impacts.

Under the Small DWMA--B Alternative there would be 58 miles of tortoise fence installed along roads and highways (see Table 2-7). Impacts for this alternative would be similar to the Proposed Plan.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Impacts to soil quality from this alternative for sheep grazing are similar to the Proposed Plan.

Under this alternative there are 21 proposed bighorn sheep and deer artificial water developments. Impacts to soil quality are analyzed under the Proposed Plan. The addition of 21 improvements and removal of several others would impact soil quality on only 0.8 acres.

### **From Issue 4: Wild Horses and Burros**

Impacts to soil quality from this alternative are similar to the Proposed Plan except for the addition of 37 burros to the Piute Mountain herd management area. Under the No Action Alternative management level of burros is 0. The adding of burros to this area would decrease vegetative cover for forage areas, and soil surfaces would be disturbed and compacted near water sources.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

Under this alternative there are 4,222 of unpaved routes available for vehicle use. Assuming the average route is 12 feet wide (Ira Long, BLM, pers. com.), there are 6,845 acres set-aside for vehicle activity in the planning area. Impacts to soil quality are similar to those listed under the No Action Alternative.

## **Summary of Impacts**

Impacts are similar to those discussed under the No Action Alternative.

### **4.4.4 Biological Resources**

The discussion of the environmental consequences of the Small DWMA--B Alternative for biological resources has been subdivided into Wildlife Management and Vegetation Management.



#### 4.4.4.1 Wildlife Management

##### **From Issue 1: Standards and Guidelines**

This alternative is the same as the Proposed Plan.

##### **From Issue 2: Recovery of the Desert Tortoise**

**Desert Tortoise:** The effects of the Small DWMA--B Alternative on desert tortoise would be similar to the impacts described for the Proposed Plan except as described below.

Existing habitat management plans and ACECs would be incorporated into the DWMA's rather than deleting them. This would have not impact on desert tortoise because the DWMA prescriptions are stronger.

Cumulative new surface disturbance would be limited to 3 percent in this alternative compared to 1 percent of DWMA's in the Proposed Alternative. This would result in a higher level of new surface disturbance over the long-term and reduced incentive for project rehabilitation or relocation outside of DWMA's.

Grazing would continue on both cattle allotments but the area of grazing use would be further refined in the Lazy Daisy by 11,606 acres and by 38,707 acres on the Chemehuevi allotment. In areas excised from the allotments, positive direct impacts would include a reduction in grazing pressure, increased plant cover and biomass (J. E. Lovich and D. Bainbridge 1999), and improved soil conditions.

Only 58 miles of fencing along Interstate 10 and 40 and Highway 95 would be installed. This is only 9 percent of the amount in the Small DWMA--A Alternative and only 28 percent of in the Proposed Plan. However, the 58 miles would be in the highest tortoise density along the busiest highways. Direct positive impacts to desert tortoise from fencing these roads would includes reduced number of deaths from vehicles and an increase in the density of desert tortoise on either side of the fenced road (Boarman et al. 1992).

Non-lethal control of ravens (mitigation, sanitation, etc) would help in the control and proliferation of ravens, but there is still the potential that a few ravens would forage intensively on hatchling and juvenile tortoises. Limiting the removal of such ravens through non-lethal means, only, would increase costs and decrease effectiveness.

**Bighorn Sheep:** The effects on bighorn sheep in this alternative would be the same as the impacts described for the Proposed Plan except for those differences described below.

The limit on cumulative new surface disturbance at 3 percent rather than 1 percent would reduce incentives for minimizing new surface disturbance and improving restoration efforts.

Loss of grazing use to portions of the Lazy Daisy and Chemehuevi Cattle Allotments would result in little change in impacts on bighorn sheep because the area being excised is in the lower elevations that bighorn sheep seldom use.

**Other Special Status Species:** Effects of this alternative on other special status animals would be the same as those in the Small DWMA--A Alternative.

### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Bighorn Sheep:** The effects on bighorn sheep in this alternative would be the same as the impacts described for the Proposed Plan except that augmenting natural and existing artificial waters with only 21 new artificial waters would likely fall short of attaining the goals and objectives specified for bighorn sheep (see Section 2.3). More specifically, bighorn sheep would not have access to sufficient forage to allow demes to reach the minimum size (50 or more animals in each deme) and stability where overall viability of the metapopulations would be ensured.

### **From Issue 4: Wild Horses and Burros**

Adverse impacts from burros would be similar to those described for the Proposed Plan with the following exception:

Establishing the Piute Mountain HMA could cause additional impacts to desert tortoise where burro grazing occurs within the HMA. The HMA is inside the DWMA and there may be additional impacts to desert tortoise from burrow trampling, competition for forage and degradation to habitat through reduced biomass and plant cover.

### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

The impacts of this alternative are similar those described for the Small DWMA--A Alternative except that (1) the impacts of stopping, parking and camping would increase based on the increase in camping distance from the road to 300 feet in this alternative, and (2) the impacts of competitive events of access roads would be similar to these described for the No Action Alternative.

### **From Issue : Land Ownership Pattern**

The impacts in this alternative would be the same as the Proposed Plan.

## **Summary of Impacts**

Summary of Impacts are similar to those discussed under the Proposed Plan.

#### 4.4.4.2 Vegetation Management

##### **From Issue 1: Standards and Guidelines**

This alternative is the same as the Proposed Alternative.

##### **From Issue 2: Recovery of the Desert Tortoise**

**Natural Communities:** The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in this Alternative would be the same as the impacts for the Small DWMA--A Alternative.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

**Natural Communities:** The effects on natural communities, special status plants, ecosystem processes, biological soil crusts, riparian and wetland areas, and noxious weeds in this Alternative would be similar to the impacts described for the Small DWMA--A Alternative. With respect to effects on natural communities the only difference would be that compensation for surface disturbance in Desert Dry Wash Woodland, Chenopod Scrub, Playas, and Sand Dunes natural communities would be at 1:1 replacement acres rather than 3:1. This would reduce the incentive for proponents to place their projects outside of these communities.

##### **From Issue 4: Wild Horses and Burros**

The impacts would be similar to the impacts described for the Proposed Plan except the impacts would occur over a greater area because the herd management areas are greater in this alternative.

In addition, the Piute Mountain Herd Management Area is established with a target population (i.e., appropriate management level) set at the current estimated population of 37 burros. Impacts in this area will be similar to those described in the Proposed Alternative.

##### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Natural Communities and Noxious Weeds:** The effects of the route network on natural communities and noxious weeds in this alternative would be similar to the impacts described for the Small DWMA--A Alternative. Impacts would be only slightly greater as the route network is increased from 4,134 miles to 4,222 miles. These additional routes would be outside of DWMA's and wilderness areas.

Impacts of long-term visitor areas would be the same as for the No Action Alternative.

As in the Proposed Plan, the Parker 400 competitive event route would be eliminated and the Johnson Valley to Parker would be retained. Thus, impacts would be similar to those described for the Proposed Plan. However, competitive events would be allowed on existing routes according to new criteria specified in this alternative. Impacts described for competitive events in the No Action

Alternative would continue; these impacts include increased soil compaction and wind erosion, widening of existing roads and trails, and creation of new roads and trails, and increased direct mortality and harassment of wildlife along race routes.

### **Summary of Impacts**

Effects on vegetation will be similar to the Small DWMA--A Alternative except that the establishment of the Piute HMA will result in impacts associated with burro grazing and trampling, especially near watering sites.

#### **4.4.5 Wilderness Management**

Site-specific projects to 1) implement the National Fallback standards and guidelines; 2) facilitate recovery of desert tortoise; and 3) protect special status plants and animals require separate environmental review, including a "minimum tool analysis" which specifies the manner in which projects would be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed

##### **From Issue 1: Standards and Guidelines**

Impacts would be the same as described for the Proposed Plan (see Section 4.2.5, Issue 1).

##### **From Issue 2: Recovery of the Desert Tortoise**

Impacts would be the same as described for the Small DWMA A Alternative (see Section 4.3.5).

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Under the Small DWMA--B Alternative, new water developments to expand usable bighorn sheep habitat in the Sonoran Bighorn Sheep Metapopulation Wildlife Habitat Management Area would be authorized outside designated wilderness areas only. Adverse impacts to opportunities for solitude in wilderness during periods of construction and maintenance would therefore be averted.

Bighorn sheep currently occupy most of the mountain ranges designated as wilderness (see Map 2-18) and constitute wildlife values associated with wilderness that are to be preserved in accordance with the California Desert Protection Act of 1994 (Section 2, Public Law 103-433). Bighorn sheep habitat is currently fragmented by human developments, populations are isolated, and individual animals are being stressed which challenge the survival of the species on a metapopulation level (see Section 3.4.2). Under this alternative, limiting development of new artificial water sources to the number specified outside wilderness would concomitantly limit expansion of usable range for existing bighorn sheep demes.

##### **From Issue 4: Wild Horses and Burros**

Combining the existing Chemehuevi and Havasu Herd Management Areas into a single, modified Herd Management Area to more accurately reflect burro use would retain all of the Whipple

Mountains Wilderness and most of the Chemehuevi Mountains Wilderness as an area managed for retention of burros (see Map 2-28). The current Appropriate Management Level (AML) of 150 burros would be retained until a new AML is established through monitoring of habitat and population (see Section 2.4.5).

Combining historical burro range and the existing Chocolate/Mule Mountains and Cibola/Trigo Herd Management Areas into a single, modified Herd Management Area to be managed for retention of burros would retain most of the Palo Verde Mountains Wilderness, Indian Pass Wilderness, and Picacho Peak Wilderness as an area managed for retention of burros. This modification would also incorporate most of the Little Picacho Peak Wilderness in the new Herd Management Area (see Map 2-28). The current combined Appropriate Management Level (AML) of 212 burros would be reduced to 138 until a new AML is established through monitoring of habitat and population (see Section 2.4.5).

Establishing the Piute Mountain Herd Management Area would incorporate most of the Piute Mountains Wilderness into an area to be managed for retention of 37 burros until a new Appropriate Management Level is established through monitoring of habitat and population (see Section 2.4.5).

Wild horses and burros are considered an integral part of the natural system of the public lands in areas where found, including wilderness. The effects of burros in designated wilderness as described in Section 4.1.5, Issue 4 (No Action Alternative) are applicable to this alternative.

#### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

The No Action Alternative is not changed under the Small DWMA--B Alternative relative to motorized-vehicle access in designated wilderness, hence the effects would be the same as described in Section 4.1.5, Issue 5 (No Action Alternative).

**Competitive Vehicle Events, Parker 400:** Under this alternative, the Parker 400 competitive recreation route would be eliminated. This action would neither adversely affect nor benefit wilderness resources for the reasons described in Section 4.1.5, Issue 5 (No Action Alternative).

**Competitive Vehicle Events, Johnson Valley to Parker:** Competitive events in the Johnson Valley to Parker corridor would be allowed under this alternative as under the No Action Alternative and the Proposed Plan. The effects of a competitive vehicle event on resource values in the Sheephole Valley Wilderness would be the same as described in Section 4.1.5, Issue 5 (No Action Alternative).

**Competitive Vehicle Events, Multiple-Use Class Guidelines:** Additional criteria for competitive motorized-vehicle events permitted in accordance with Multiple-Use Class guidelines would be established under this alternative. The effects of competitive vehicle events on wilderness resource values would be the same as described in Section 4.1.5, Issue 5 (No Action Alternative), though protection of such values would be enhanced by further constraining events that occur on routes adjacent to wilderness boundaries.

### **From Issue 6: Land Ownership Pattern**

Actively seeking to acquire lands or interests in lands within DWMA's and WHMA's adds to existing policy regarding land acquisition in wilderness (see Section 2.6.5). The discussion in Section 4.1.5, Issue 6 (No Action Alternative) regarding acquisition of additional lands in wilderness is applicable to the Small DWMA B Alternative.

### **Summary of Impacts**

Summary of Impacts is essentially the same as described in Section 4.2.5 Proposed Plan), except that lost bighorn sheep demes in wilderness may not be reestablished upon precluding development of new water sources therein.

#### **4.4.6 Livestock Grazing Management**

##### **From Issue 1: Standards and Guidelines**

Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

##### **From Issue 2: Recovery of the Desert Tortoise**

Impacts associated with adoption of this alternative for the Lazy Daisy Allotment are similar to Small DWMA--A Alternative except the amount of range improvements needed for implementation.

The Chemehuevi allotment is reduced by 27 percent which would not affect forage production since this allotment is classified for ephemeral forage. Construction of range improvements on the Lazy Daisy and Chemehuevi Allotments would be the most costly of all alternatives. These improvements would be completed over the long-term.

Development and maintenance of existing and proposed improvements would consume much of the lessee's operating budget if he were primarily responsible for construction and maintenance. The lessee would expend one to three days a week to keep cattle within the new allotment boundary until the necessary improvements are in place.

##### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Impacts are the same as the Proposed Plan.

#### **4.4.7 Wild Horses and Burro Management**

##### **From Issue 1: Standards and Guidelines**

Impacts are the same as the Proposed Plan.

**From Issue 2: Recovery of the Desert Tortoise**

There was no reductions in the HMAs size due to the designations of DWMA's, upon which HMAs can overlap desert tortoise critical habitat.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Same as the Proposed Plan with the exception that the overlap with bighorn sheep demes would increase for the Palo Verde mountains, but decrease in the Cargo Muchacho Mountains. As in the Proposed Plan, the continuation of developing wildlife waters for deer and bighorn sheep would continue, which would alleviate some of the burro/wildlife conflicts surrounding waters, and the augmentation of reestablishing bighorn sheep demes within HMAs is expected to increased dietary overlap between the two species and a higher demand on natural waters. The implementation for the recovery of bighorn sheep populations within HMAs, will be addressed in the HMAPs.

**From Issue 4: Wild Horses and Burros**

The new Chemehuevi HMA is reduced from a current combined 485,846 acres (Chemehuevi and Havasu HMAs) to 263,021 acres, a 46 percent reduction. The current AML of 150 is reduced 28 percent, to a current management level of 108 burros.

Table 4-25 compares the No Action and the Small DWMA--B Alternatives in relation to burro HMA acreages and burro management levels.

**Table 4-25. Comparison of Herd Management Areas (acres) and Appropriate Management Level for No Action and Small DWMA--B Alternative**

Burro HMAs	No Action Alternative		Small DWMA--B Alternative	
	HMA Acreage	AML	HMA Acreage	AML
Piute Mtn.	0	0	39,780	37
Chemehuevi	406,894	150*	263,021	150
Havasu (AZ)	78,952	150*	**	0
Chocolate/Mule Mtns.	386,069	22	274,811	138
Cibola/Trigo (AZ)	36,530	190	**	0
<b>Total</b>	<b>908,445</b>	<b>362</b>	<b>577,612</b>	<b>325</b>

\* HMAs share common AML.

\*\* Arizona HMAs were combined with California HMAs.

### **Summary of Impacts**

The new Chocolate/Mule Mountain HMA is reduced from a current combined 422,598 acres (Chocolate/Mule Mtns. and Cibola/Trigo HMAs) to 274,811 acres, a 35 percent reduction. The current combined AML of 212 is reduced 35 percent to a single current management level of 138 burros.

Piute Mountain HMA (39,780 acres) is recognized for the current management of 37 burros, which would reverse, to a small extent, the regional decline of burro HMAs.

Based on the findings of Singer and Zeigenfuss (2000), the proposed population levels for the HMAs are at or below the lowest levels for a genetic effective population size (139-185 animals), in which the number of breeding individuals (both male and female) that contribute to the next generation are at risk of reducing the genetic variation of the herds through inbreeding. Cothran (2000), describes loss of genetic variability can lead to a reduction in fertility or viability of individuals in a population. The HMAPs will address management prescriptions that can alter this relationship through altering breeding sex ratios, increase generation length through less removals or by introducing breeding animals periodically from other herds.

Compared to the Proposed Plan, the Picacho State Recreation Area (SRA) will remain as part of the HMA, in which forage can be allocated for burros in determining the AML for the Chocolate-Mule Mountain HMA. Burros during the summer and dry winters will continue to utilize the national wild refuges (NWRs) managed by SFWS and Indian Tribal lands for shade, water and food, especially if natural waters in the upland are fenced to exclude burros. In order to minimize burro activity on these lands, the HMAPs will be addressing actions that include, but are not limited to, continuing to remove burros, erecting fencing, and/or providing additional water sources on Public lands for wildlife and burros.

Elimination of the Picacho horse HMA would have no significance since any horses that may have once been in the area naturally left many years ago.

Compared to the No Action alternative, there is a 36 percent reduction (330,833 acres) in available habitat for burros and a 11 percent reduction in AML within the NECO planning unit.

Within the CDD (1980), there was a total 4,973,514 acres designated as burro herd areas. A total of 3,500,465 acres was designated for the management of 2,747 burros. Currently, there is a total of 1,338,804 acres for the management of 370 burros (see Map 4-1, Appendix A). The Clark Mountain and Chicago Valley HMAs are going through a similar amendment process under the Northern and Eastern Mojave Desert Plan where the Proposed Plan is to eliminate these HMAs, a reduction of 353,522 acres and a combined AML of 72. This leaves a total of 769,931 acres remaining for the management of burros, within the CDD. The 3 remaining HMAs outside the NECO planning area, either do not have population of burros (Piper Mountain HMA) or can't support year-long burro populations on public lands (Waucoba/Hunter Mtn. and Lee Flat HMAs). This leaves the Chemehuevi, Chocolate-Mule Mountains and the Piute Mountains HMAs with the most viable herds remaining in the CDD, even with management levels at or below the genetic effective population size, described by Singer and Zeigenfuss (2000). The cumulative reductions in habitat available for burros and subsequent reductions in burro populations, has reduced the representation of this species and has likely compromised their gene pool and ability for populations to maintain genetic viable herds without human intervention within the remaining HMAs.



#### 4.4.8/9 Recreation Management and Motorized-Vehicle Access

##### **From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation**

**Motorized-Vehicle Access.** There is a close relationship between the pursuit of recreational activities and motorized-vehicle use in the California desert, whether motorized vehicles are used to drive for pleasure or are simply a means of access to recreation destinations such as campgrounds and wilderness trail heads. It is difficult, if not impossible in many circumstances, to engage in recreational activities in this region without employing a motorized-vehicle in some fashion given the desert's vast expanse and great distances to recreation sites. Therefore, actions which restrict vehicular access may affect opportunities for recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed.

Limitations on motorized-vehicle access, thereby affecting opportunities for recreation that depend on such access, would be the same in Desert Wildlife Management Areas (DWMAs) under this alternative as established under the Small DWMA--A Alternative. Hence, impacts would be the same as described in Section 4.3.8, Issue 5, relative to vehicular activities in DWMAs.

Limitations on motorized-vehicle access outside DWMAs would be the same as established under the Small DWMA--A Alternative except that redundant routes would be available for motorized-vehicle use. A redundant route is defined in Section 2.5.2 as one whose purpose is apparently the same or very similar to that of another route, inclusive of providing the same or very similar recreation opportunities or experiences. A redundant route is further described as one deemed excess or more than is needed. Under the Small DWMA--B Alternative, 88 miles of redundant routes outside DWMAs would be available for motorized-vehicle use (this mileage includes routes that are designated "open" on public lands and routes on non-public lands for which route designation decisions do not apply). These routes would be as closed under all other alternatives.

Of the 4,982 miles of inventoried unpaved routes within the NECO planning area, excluding non-routes, partial non-routes, and routes in designated wilderness, Joshua Tree National Park, and the Chocolate Mountains Aerial Gunnery Range, 4,222 miles, or approximately 85 percent, would remain available for motorized-vehicle use under the Small DWMA B Alternative. In addition, washes that constitute existing motorized-vehicle routes, or "navigable" washes, outside "washes closed zones" would be available for use (see Section 3.9.5s, for the definition of "navigable" washes). Mileage of wash routes available for use in these "washes open zones" is undetermined.

As the closure of inventoried routes under this alternative represents about 15 percent of the total unpaved mileage in the NECO planning area, adverse effects to overall motorized-vehicle access, hence recreation that relies on such access, would be minor, though greater than under the No Action Alternative and the Proposed Plan.

**Stopping, Parking, and Vehicle Camping:** In accordance with the Small DWMA--B Alternative, stopping, parking, and vehicle camping would be limited to no more than 300 feet from the centerline of an approved route of travel within Desert Wildlife Management Areas (DWMAs). This would provide adequate space alongside routes for stopping and parking.

Relative to vehicle camping, the increase to 300 feet (compared to a limit of 100 feet under the Proposed Plan) do little, if anything, to enhance opportunities to escape disturbances from approaching and passing vehicles (see discussion in Section 4.2.8, Issue 5, Proposed Plan). By restricting motorized-vehicle travel in DWMA's to paved routes, maintained dirt routes, and recreational touring routes, vehicle camping would be limited to routes upon which vehicular travel would more likely occur. Opportunities to escape from other visitors would thereby be reduced.

Outside DWMA's, stopping, parking, and vehicle camping would be allowed within 300 feet from the centerline of an approved route except within areas such as Areas of Critical Environmental Concern where the limit would be 100 feet. The effects of these limitations would be the same as described in Section 4.2.8, Issue 5 (Proposed Plan).

**Competitive Vehicle Events:** Under this alternative, the Parker 400 competitive recreation route would be eliminated. This action would not adversely affect opportunities for motorized competitive events in the corridor for the reasons described in Section 4.1.8, Issue 5 (No Action Alternative).

**Competitive Vehicle Events, Johnson Valley to Parker:** Under this alternative, opportunities to conduct competitive vehicle events in the Johnson Valley to Parker corridor would be provided (see discussion in Section 4.1.8, Issue 5, No Action Alternative).

**Competitive Vehicle Events, Multiple-Use Class Guidelines:** Outside the Johnson Valley to Parker corridors and Off-Highway Vehicle Recreation Areas, competitive events would be allowed in accordance with Multiple-Use Class guidelines with additional criteria. However, given the expanse of designated wilderness and critical habitat for the desert tortoise in the NECO planning area (see Maps 2-38 and 3-5), it would be problematic to locate a suitable race course that avoids sensitive areas. In addition, the review process under NEPA, especially if a "may affect" determination is made relative to the desert tortoise thereby triggering consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act, could require considerable time and result in an uncertain outcome. Therefore, planning for competitive events would be difficult at best and may discourage event sponsors from pursuing a special recreation permit under these circumstances.

**Rockhounding:** Under the Small DWMA--B Alternative, motorized-vehicle access to Rockhound collection areas would be the same as under the Small DWMA--A Alternative, except access via redundant routes outside Desert Wildlife Management Areas (DWMA's) would be allowed (see Map 2-34 depicting the motorized-vehicle network of open routes under this alternative and Map 4-2 depicting rockhounding areas). Access to rockhounding areas via redundant routes outside DWMA's would marginally increase motorized-vehicle access to collection sites. Hence, effects on Rockhounding would be essentially the same as described for the Small DWMA--A Alternative (see Section 4.3.8, Issue 5).

**California Back Country Discovery Trails:** All routes identified as components of the California Back Country Discovery Trails system (see Section 3.8.7) would be available for motorized-vehicle use under this alternative. Hence, opportunities for travel on Discovery Trails, upon designation, would not be affected.

### **From Issue 6: Land Ownership Pattern**

Impacts to recreation from the acquisition and disposal of lands under the Small DWMA B Alternative would be the same as described under Issue 6 of Section 4.1.8 (No Action Alternative).

### **Summary of Impacts**

Opportunities for recreation would essentially be the same as described in Section 4.3.8 (Small DWMA A Alternative), except that opportunities for recreation outside DWMA's would be marginally enhanced with the availability of redundant routes for motorized-vehicle travel, and opportunities for competitive vehicle events would be afforded.

### **4.4.10 Mineral Management**

The following effects are additional or changes to effects described in the Small DWMA--A Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

#### **From Issue 1: Standards and Guidelines**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

#### **From Issue 2: Recovery of the Desert Tortoise**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

#### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Fewer acres would be There would be less additional mitigation, compensation, and reclamation requirements and costs to those already in place.

#### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

Access in DWMA's would be considerably more reduced, having a greater effect on casual mining activity and creating more instances of access authorizations; however, outside DWMA's access network would increase to nearly the extent of the No Action Alternative and reduce the need for access authorizations.

#### **From Issue 6: Land Ownership Pattern**

There would be no essential change from the Proposed Plan except that acquisitions/ownership consolidations would cover less area (50 percent conservation zone goal).

## Summary of Impacts

Mining operations would be less effected by the (reduced acres) DWMA and WHMA designations.

### 4.4.11 Cultural Management

#### **From Issue 1: Standards and Guidelines**

Analysis is the same as the Proposed Plan.

#### **From Issue 2: Recovery of the Desert Tortoise**

Analysis is the same as the Proposed Plan.

**Grazing Management:** Analysis is the same as the Small DWMA--A Alternative, except the grazing area for the Chemehuevi Allotment would be restricted by 36,480 acres. There are 55 recorded cultural resources located within the current allotment boundaries (Table 4-10). This alternative would eliminate the threats from grazing to 25 recorded cultural resources. Thirty recorded cultural resources would remain within the reduced allotment boundaries in this alternative. Although there could be an increase in threats to cultural resources as a result of intensified grazing use within the remaining allotment boundaries, past grazing patterns and herd densities would indicate that impacts from intensification would not be significant.

#### **From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Analysis is the same as the Proposed Plan..

#### **From Issue 4: Wild Horses and Burros**

Analysis is the same as the No-Action Alternative. Under the Small DWMA--B Alternative, Herd Management Areas are combined and total size is reduced to 537,612 acres. and the Piute Mountain HMA is established at 39,780 acres. This would result in a positive benefit to cultural resources by reducing the number of known sites subject to impact from herd behavior by 413 sites. There 403 recorded cultural resources identified within the boundaries of the HMAs for this alternative (Table 4-11).

Herd populations will managed at existing levels. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of an “undertaking”, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

#### **From Issue 5: Motorized Vehicle Access/Routes of Travel Designations**

Analysis is the same as the Small DWMA--A Alternative (see Table 4-12), except that routes proposed “open” within the DWMAAs would allow motorized vehicle use within a 600' APE and redundant routes outside DWMAAs would be designated “open”. Under the Small DWMA--B Alternative, 460 recorded cultural resources have been identified as located on BLM managed lands and falling within APE for routes that would be designated “open” (Table 4-12). Of these, 138 cultural resources have either been listed, determined eligible, or are considered likely to be eligible and 121 of these resources are considered to have qualities and values that might be adversely affected by activities authorized within the APE of a route. This alternative would eliminate 646 recorded cultural resources from threats from motorized vehicle use.

**Competitive Off-Highway Vehicle Events:** Analysis and impacts are the same as the Proposed Plan.

#### **From Issue 6: Land Ownership Pattern**

Same as No-Action Alternative.

#### **From Issue 7: Access to Resources for Economic and Social Needs**

Same as No-Action Alternative.

#### **From Issue 8: Incorporation of Wilderness Areas into CDCA Plan**

Same as No-Action Alternative.

### **Summary of Impacts**

In the Small DWMA--B Alternative, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There would be a direct benefit to cultural resources by limiting the area of the Lazy Daisy and Chemehuevi range allotments, as well as the size of Herd Management Areas. There would be further benefit in changing MUC classifications from Moderate to Limited use, as well as limiting cumulative surface disturbance within DWMAAs to three percent. There would also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

#### **4.4.12 Lands and Land Use Authorization**

The following effects are additional or change to effects described in the Small DWMA--A Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

**From Issue 1: Standards and Guidelines**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

**From Issue 2: Recovery of the Desert Tortoise**

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place. A 3 percent surface disturbance limit would result in fewer negative discretionary decisions for Lands actions requests over time or that the threshold would actually be reached.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

Fewer acres would be included in WHMAs so there would be less additional mitigation, compensation, and reclamation requirements implications.

**From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

While access in DWMA's would be considerably more reduced, the access network outside DWMA's would be increased to nearly the same network as in the No Action Alternative. This could possibly reduce the need for access authorizations to private lands.

**From Issue 6: Land Ownership Pattern**

There would be no essential change except that the acquisitions/ownership consolidations target area is reduced (50 percent conservation zone goal).

**Summary of Impacts**

Summary of Impacts would be little changed, except for the 3 percent surface disturbance threshold in DWMA's and fewer acres of WHMA's.

**4.4.13 Socio-Economic Values**

**From Issue 1: Standards and Guidelines**

Impacts would be similar to the Proposed Plan.

**From Issue 2: Recovery of the Desert Tortoise**

Economic impacts for the Lazy Daisy Allotment would be similar to the small DWMA--A Alternative. Economic impacts for the Chemehuevi Allotment would be similar to the No Action Alternative. This alternative proposes the highest cost for improvements of any of the alternatives.

Grazing receipts would be similar to the No Action Alternative even without Ford Dry Lake Allotment. San Bernardino County would continue to receive grazing receipts for grazing use occurring in the Lazy Daisy and Chemehuevi Allotments. Riverside County would receive grazing receipts for grazing use occurring in the Rice Valley Allotment.

The proposed tortoise fencing is several magnitudes less than in either the Proposed Plan or Small DWMA--A Alternatives. With only a 3 percent limit on surface disturbance, more disturbance could potentially occur and with emphasis on effective rehabilitation. The magnitude and effects of routes of travel designations in DWMA's is about the same as in the Small DWMA--A Alternative.

**From Issue 3: Management of Special Status Animals and Plants and Natural Communities**

The cost of compensation and mitigation for other species would be less in the alternative because the amount of multi-species WHMA is less. Potential sheep use on Ford Dry Lake Grazing lease would be lost under this alternative.

**From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation**

Fewer routes would be closed and there is a greater opportunity for competitive racing.

**From Issue 6: Land Ownership Pattern**

Same as Small DWMA A but fewer acres to acquire. Table 4-26 shows changes in the acres of land identified by public and private classifications.

**Table 4-26. Privately Owned Lands with five or less owners per section and Public Lands in Conservation Area, Small DWMA--B Alternative**

County	Small DWMA--B Alternative Land Ownership Changes	
	Private <sup>a</sup> , in acres	Public <sup>b</sup> , in acres
Imperial	68,618	595,120
Riverside	83,644	1,724,248
San Bernardino	57,221	1,765,963

<sup>a</sup> These would be included in federal acquisition programs through purchase or exchange.

<sup>b</sup> Total federal Lands in Proposed Conservation Zones.

**Summary of Impacts**

Overall this alternative carries the least social and economic costs of all alternatives. Mitigation, compensation, disturbance limits, highway fencing, grazing allotments reduction, routes/race routes closed (acres and amounts) are all fewer. On the matter of highway fencing the cost is several magnitudes less.



### 4.5 Summary of Impacts by Alternative

Table 4-27 summarizes the impacts of the Proposed Plan and compares and contrasts those impacts to the impacts of the other alternatives. A comparison actions by alternatives was presented in Table 2-21.

**Table 4-27. Summary of Impacts by Alternative**

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Air Quality</b>			
Implementing Standards and Guidelines would promote the maintenance of the processes and functions necessary to maintain and improve healthy soil and vegetation within grazing allotments which would improve air quality from reduced particulate pollutants.	Adopting the regional standards for Public Land Health, and guidelines for grazing management would be similar to the No Action Alternative. However, the Regional Standards would apply on an planning area-wide basis rather than just grazing allotments. This additional area could contribute to improvement to air quality at a greater rate.	Impacts are similar to the Proposed Plan.	Impacts are similar to the Proposed Plan.
<b>Impacts to Water Quality</b>			
Implementing the National rangeland health standards and grazing guidelines would result in enhancement and improvement in riparian and wetland conditions within grazing allotments through stabilization of streambanks and reduction in water runoff.	Implementing Regional rangeland health standards and guidelines would result in improved rangeland health. There would be less soil erosion, and improved vegetative diversity, livestock forage, upland and riparian habitats, and water quality.	Impacts are similar to the Proposed Plan.	Impacts are similar to the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Soil Quality</b>			
Implementing the rangeland standards and guidelines would result in less soil disturbance and compaction in uplands which would ultimately improve overall watershed health over a long time.	Adopting the regional standards for Public Land Health and guidelines for grazing management would be similar to the No Action Alternative. However, the Regional Standards would apply on an area-wide basis rather than on just grazing allotments. This additional area could contribute to improvement to soil quality at a greater rate.	Impacts are similar to the Proposed Plan.	Impacts are similar to the Proposed Plan.
<b>Impacts to Vegetation Management</b>			
Managing ecosystem health in accordance with National Fallback Standards benefit natural communities, ecosystem processes and special status plants by developing standards for soils, riparian/wetlands, stream function and native species within grazing allotments.	Adopting the regional standards for Public Land Health, and guidelines for grazing management would be similar to the No Action Alternative. However, the Regional Standards would apply on an area-wide basis rather than just grazing allotments. This additional area could contribute to improvement to vegetation at a greater rate.	Same as the No Action Alternative.	Same as the No Action Alternative.--
Current Management on 189,564 acres of ACECs has a positive benefit on natural communities and special status plants through specific prescriptions aimed at improving habitat and reducing surface disturbing activities (i.e., route closures, re-vegetating, tamarisk removal).	Managing 1,684,248 acres of ACECs would enhance natural communities and special status plant species by increasing the amount of each community and species inside of an area of protection. Additionally, prescriptions aimed at improving habitat conditions would have a positive effect on natural communities and special status species.	Impacts to natural communities and special status plant species are similar to those discussed in the Proposed Plan over a smaller area (18 percent).	Same as the Small DWMA--A Alternative.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Vegetation Management (continued)</b>			
Impacts from grazing on 605,453 acres include; disruption of sensitive natural communities, reduction in annual plant diversity and compaction of soils.	Limiting grazed area by 36 percent would reduce impacts from disruption of sensitive natural communities, reduction in annual plant diversity and compaction of soils.	Limiting the grazing area by 69 percent would have similar positive benefit to natural communities and special status plant species as the Proposed Plan on a greater scale.	Positive impacts to natural communities and special status plant species are similar to those described in the Proposed Plan.
Continuing the Parker 400 race would result in loss of vegetation.	Eliminating the Parker 400 race and the MUC criteria for new race routes would reduce or eliminate impacts associated with such events.	Eliminating the Parker 400 race and the Johnson Valley to Parker race routes would eliminate all impacts associated with these events.	Same as the Proposed Plan.
Designating routes and reducing the route network would reduce route proliferation and the spread of alien plants along route corridors.	Designating routes and reducing the route network would reduce route proliferation and the spread of alien plants along route corridors. Closure of two vehicle open areas (a sand dune and playa) would aid in restoration of vegetation communities in and around them.	Impacts from the pattern of road designations would be about the same as for the Proposed Plan except with fewer "open" roads in DWMA's. Impacts to plant communities and special status plant species would be reduced.	Impacts from the pattern of road designations would be about the same as for the Proposed Plan with two exceptions: fewer "open" roads in DWMA's would benefit plant communities and special status plant species; a slightly greater number of "open" roads outside DWMA's would add corresponding additional impact.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wildlife: Desert Tortoise</b>			
Desert tortoise have protection through a combination of designated areas including Critical Habitat, Wilderness, JTNP, Military, ACECs and HMPs.	Designating 1,684,248 acres as ACECs and tortoise DWMA's would provide positive benefits to the desert tortoise through implementation of prescriptions aimed at reducing or eliminating impacts to tortoise.	Designating 1,384,310 acres as ACECs and tortoise DWMA's would provide similar benefit to the desert tortoise as the Proposed Plan.	Same as the Small DWMA--A Alternative.--
Surface disturbing projects are evaluated on a case-by-case basis without a limit. Potential impacts include; surface disturbance on a larger scale, little incentive to direct projects to other less sensitive areas and reduced rehabilitation commitments.	Limiting surface disturbing activities to 1 percent benefits wildlife species through reduction in vegetation removal, decreasing fragmentation affects and maximizing rehabilitation commitments.	Same as the No Action Alternative.	Impacts from limiting surface disturbance to 3 percent are similar to those discussed in the Proposed Plan.
Cattle and sheep grazing on 605,453 acres affect desert tortoise and other species through: (1) competition for forage; (2) trampling of tortoise burrows; (3) changing of plant composition, density, and cover; and (4) compaction of soils.	The effects of limiting cattle grazing area by 36 percent could include: an improvement in vegetative cover, reduction of competitive grazing between tortoise and cattle, and a reduction in burrow trampling.	Impacts are similar to those discussed in the Proposed Plan but to a greater degree due to a reduction of 68 percent.	Impacts are similar to those discussed in the Proposed Plan.
Unfenced highways such as I-40, I-10, and highway 95, cause direct mortality to tortoise as well as habitat fragmentation, and reduced gene flow.	Fencing 104 miles of highways (both sides) would reduce desert tortoise mortality from highways and increase gene flow by providing culverts that allow tortoise to travel under highways safely.	Fencing 318.5 miles of highways (both sides) would have increased protections for tortoise against deaths related to vehicular travel.	Impacts are similar to those discussed in the Proposed Plan to a lesser degree by fencing 29 miles of highways.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wildlife: Desert Tortoise (continued)</b>			
<p>Driving in washes can result in damage to vegetation and tortoise burrows and even direct mortality. Closure of washes to vehicle use in some desert tortoise recovery units would reduce tortoise mortality and destruction of burrows.</p>	<p>Closing washes to vehicles in some areas of the DWMA's would reduce tortoise mortality and crushing of burrows.</p>	<p>Closing all wash systems has similar positive benefits as the Proposed Plan; however the size of the DWMA is reduced so that essentially there is the same area of closed wash systems.</p>	<p>Same as the Small DWMA--A Alternative.--</p>
<p>Burro grazing in two Herd Management Areas inside of Critical Habitat can cause impacts to tortoise which include: burrow trampling, competition for forage, and a decrease in plant biomass and cover.</p>	<p>Eliminating burro grazing inside of DWMA's would have a positive effect on tortoise by reducing competition for forage and improving habitat.</p>	<p>Impacts from elimination of burro grazing throughout the entire Planning Area are similar to those discussed in the Proposed Plan on a larger scale.</p>	<p>Establishing the Piute Mountain HMA could cause additional impacts to desert tortoise where burro grazing occurs within the HMA. The HMA is inside the DWMA and there may be additional impacts to desert tortoise from burrow trampling, competition for forage, and degradation to habitat through reduced biomass and plant cover</p>
<p>Impacts to desert tortoise from vehicle travel would be reduced by route designations. The reduced impacts include: death from being struck by vehicles, habitat fragmentation, increases in predator populations using vehicle roadkills, changes in plant community from vehicle-related fires, and restriction of movements of tortoises.</p>	<p>Designating routes of travel as "open," "limited," and "closed" would result in a decrease in negative impacts associated with off-road activities, such as habitat degradation, proliferation of roads, harassment of wildlife, and road kills.</p>	<p>Impacts are similar to the Proposed Plan.</p>	<p>Impacts are similar to the Proposed Plan.</p>

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wildlife: Bighorn Sheep</b>			
Bighorn sheep receive positive benefits from management of JTNP, CMAGR, and BLM wilderness. A total of 75percent of occupied range are in these protected areas. Additionally, there are five HMPs that afford bighorn sheep protection.	Positive impact to bighorn sheep are similar to those described in the No Action Alternative; however, there are additional benefits through the designation of 1,684,248 acres of ACECs that include specific prescriptions to improve habitat conditions.	Impacts are similar to those discussed in the Proposed Plan over a slightly reduced area.	Same as the Small DWMA--A Alternative.
Cattle grazing potentially impacts bighorn sheep by competing for forage, by altering the vegetation composition, by introducing diseases, by fouling or disrupting water sources, or by causing changes in behavior or habitat use.	Limits grazing on 36 percent of allotments would have a positive impact on bighorn sheep by reducing competitive grazing and alternation of vegetation composition.	Impacts are similar to those discussed in the Proposed Plan but to a greater degree because grazing is reduced by 69 percent overall.	Same as the Proposed Plan.--
Five designated HMPs provide protection and enhancement to bighorn sheep through prescriptions aimed at improving herd size and or habitat. HMPs are generally limited by the Multiple-Use Class designation of the area.	Designating two bighorn sheep WHMAs and an 80 percent Multi-Species WHMA would have a positive benefit to bighorn sheep through prescriptions aimed at reducing impacts to bighorn sheep and reducing the surface disturbance through acquisition.	Same as the Proposed Plan.	Same as the Proposed Plan.
Waters are developed on a case-by-case basis.	The addition of 87 new water developments would have a positive effect on bighorn sheep by giving access to additional forage more distant from existing waters. With more food and water available, the number of big horn sheep in each deme can be expected to increase.	Same as the Proposed Plan.	Impacts from developing 21 artificial waters sites outside wilderness would be similar to those described in the Proposed Plan but would be over a smaller area.
Some routes are closed near natural and artificial water sources, hence the impacts would be the same as for the Proposed Plan..	Closure of some routes near natural or artificial water sources would reduce disturbance of bighorn sheep at critical sites.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wildlife: Bighorn Sheep (continued)</b>			
Burro grazing where Appropriate Management Levels are exceeded cause impacts to bighorn sheep by overgrazing forage, damaging water sources, trampling of soil, and denudation of vegetation.	Reduction in burro grazing along with management actions to fence water would benefit sheep by reducing negative impacts such as competition for forage, trampling of soil and denudation of vegetation.	Managing for zero burro grazing in all of the Herd Areas would have a slightly greater positive impact to bighorn sheep by eliminating the negative effects discussed in the Proposed Plan.	Impacts would be similar to those discussed in the Proposed Plan.
<b>Impacts to Wildlife: Other Special Status Species</b>			
Current management of ACECs, Wilderness, JTNP, CMAGR, and HMPs provide protection to many species.	Designating 1,684,248 acres of ACECs would provide protection for species through prescriptions aimed at improving habitat and reducing surface disturbing activities.	Impacts to wildlife species are similar to those discussed in the Proposed Plan over a smaller area (18 percent).	Same as the Small DWMA--A Alternative.
Surface disturbing projects are evaluated on a case-by-case basis without a limit. Potential impacts include; surface disturbance on a larger scale, little incentive to direct projects to other less sensitive areas and reduced rehabilitation commitments.	Limiting surface disturbing activities to 1 percent of the DWMA's would have a positive impact on many species by potentially reducing impacts from habitat reduction	Same as the No Action Alternative.	Impacts from limiting surface disturbance to 3 percent are similar to those discussed in the Small DWMA--A Alternative.
Management of existing ACECs, HMPs, JTNP, CMAGR, and Wilderness provides protection for many species and habitats.	Species would have positive benefits from designation of DWMA's and the Multi-species WHMA through prescriptions aimed at reducing surface disturbance and improving natural communities.	Same as the Proposed Plan.	Positive impacts are similar to those discussed in the Proposed Plan on a slightly smaller scale.
Some routes are closed near certain sensitive species locations, hence the impacts would be similar to those of the Proposed Plan.	Closure of some routes would reduce the amount of habitat subjected to occasional disturbance from vehicles.	Same as the Proposed Plan.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wildlife: Other Special Status Species (continued)</b>			
<p>Burros may degrade riparian habitat where they seek water and shade, which can have an indirect effect on special status species of birds and deer.</p>	<p>The negative effects of burros on some special status animals, and burro deer in particular, would be reduced somewhat by the fencing of some of the natural waters.</p>	<p>Elimination of burros from HAs would benefit special status animals by reducing habitat damage, especially in sensitive riparian habitat along the Colorado River and in Desert Dry Wash Woodland, increase forage and cover for wildlife, increase availability of water, and allow over-grazed areas to recover.</p>	<p>Impacts are similar to the Proposed Plan.--</p>
<p>Vehicle use on highways and, to a lesser degree, roadways results in some mortality of wildlife, especially to vulnerable or slow-moving animals such as flat-tailed horned lizards and desert rosy boa. Designating routes would decrease these negative impacts.</p>	<p>Designating a routes network would result in a decrease in negative impacts associated with off-road activities, such as habitat degradation, proliferation of roads, harassment of wildlife, and road kills.</p>	<p>Impacts are similar to the Proposed Plan.</p>	<p>Impacts are similar to the Proposed Plan.</p>



No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wilderness</b>			
Management of Category I and II desert tortoise habitat benefits resource values in wilderness where improvements to air quality, water quality, soil quality, vegetation composition, and habitats for special status species occur. By improving resource conditions, the wilderness character of lands so designated is promoted.	Actions specific to the recovery of the desert tortoise in DWMA's would benefit resource values in wilderness in the same manner as described for the No Action Alternative.	Similar to the Proposed Plan.	Similar to the Proposed Plan.
Not addressed.	Construction of 10 bighorn sheep guzzlers in wilderness areas (no more than two per area) would not substantially affect the overall natural character of any particular wilderness area. During periods of construction and maintenance, opportunities for solitude would be temporally adversely affected.	Impacts are similar to the Proposed Plan.	Bighorn sheep guzzlers would be developed outside wilderness areas.--
Continued management of existing Chemehuevi HMA would have no substantial impacts on natural conditions in wilderness areas as long as burros are managed at prescribed levels and in accordance with applicable plans.	Combining the Chemehuevi and Havasu HMAs into one HMA would integrate a substantially larger portion of the Whipple Mountains Wilderness into an area managed for retention of burros.	Managing HA for zero wild horses and burros would eliminate negative impacts associated with burros.	Similar to the Proposed Plan with the addition of the establishment of the Piute Mountain HMA which would incorporate most of the Piute Mountains Wilderness.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wilderness (continued)</b>			
Continued management of existing Chocolate/Mule Mountains HMA would have no substantial impacts on natural conditions in wilderness areas as long as burros are managed at prescribed levels and in accordance with applicable plans.	Combining historical burros range Chocolate/Mule Mountains HA and Cibola/Trigo HA into one HMA would integrate a substantially larger portion of the Indian Pass, Picacho Peak, and Little Picacho Peak Wildernesses into an area managed for retention of burros.	Managing HA for zero wild horses and burros would alleviate potential impacts to natural conditions if herd levels exceed the established AML.	Same as the Proposed Plan.
Competitive events increase the threat of vehicle incursions into wilderness, though event design stipulations would mitigate these threats.	Similar to the No Action Alternative except that competitive events would be allowed only on the Johnson Valley to Parker route, thereby diminishing threats of vehicle incursions to one wilderness.	Threats to wilderness values from vehicle incursions associated with competitive vehicle events would not exist.	Same as the No Action Alternative.
<b>Impacts to Livestock Grazing Management</b>			
Rangeland health conditions have been assessed for all allotments and except for the West Well in the Chemehuevi allotment, all standards have been attained. There may be a need for temporary reduction or shifts in grazing activities in small areas for a limited period to restore soil and vegetative conditions.	Adoption of the Regional Standards for Public Land Health and guidelines for grazing management are similar to those discussed under the No Action Alternative.	Adoption of the Regional Standards for Public Land Health and guidelines for grazing management are similar to those discussed under the No Action Alternative.	Adoption of the Regional Standards for Public Land Health and guidelines for grazing management are similar to those discussed under the No Action Alternative.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Livestock Grazing Management (continues)</b>			
Grazing activities have been reviewed through Section 7 consultation process by the USFWS, and activities have been mitigated through biological opinions. Range improvements are a necessary component of grazing management to control and care for livestock.	The size of the Lazy Daisy Allotment would be cut by 7 percent.	Reducing the size of the Lazy Daisy Allotment by 42 percent would result in a loss of 638 AUM. This is a 20 percent loss in cattle use, which is a significant and adverse consequence to the lessee.	Same as the Small DWMA--A Alternative.
(See above.)	The deletion of the Chemehuevi Allotment would result in the loss of livestock production.	Same as the Proposed Plan.	The Chemehuevi Allotment has been cut by 27 percent of ephemeral forage, which would not reduce AUM.. A grazing strategy could directly affect year-long grazing operations about four out of ten years.
Ford Dry Lake and Rice Valley domestic sheep grazing allotments operate under biological opinions issued.	With the loss of the Ford Dry Lake Allotment, potential sheep production would cease. A loss of area in the Rice Valley Allotment would impact livestock use along the west and southwest edge of the allotment.	The result of deleting the Ford Dry Lake and the Rice Valley domestic sheep grazing allotments would be a complete removal of livestock production from these areas.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wild Horses and Burros</b>			
Portions of Chemehuevi and Chocolate/Mule Mountain HMAs overlap portion of designated Category I and II desert tortoise critical habitat. However, the portions where they overlap have low frequency of burro occurrence.	Negative impacts to burros from recovery of the desert tortoise include exclusion from historical burro range and reduction in overall HMA. However, where there has been a boundary adjustment, there is a low frequency of burro occurrence.	This action has the most significant negative impacts to the management of burros in which all burros would be removed.	Both DWMA's would overlap portions of the proposed Chemehuevi and the Chocolate/Mule Mountains HMAs. However, the portions of overlap have low frequency of use by burros.
Not addressed.	Elimination of competition between cattle and burros on the Chemehuevi grazing allotment would result in a direct positive benefit to burros through the elimination of forage competition.	Not addressed.	Competition between cattle and burros on the Chemehuevi grazing allotment would continue.
Not addressed.	Fencing one third of the new water developments may disperse the use by grazing ungulates of the vegetation resources such that dietary overlap is reduced. Unfenced water developments outside HMAs may expand the burros' range.	Direct impacts related to fencing all waters would include displacement of burros in the area if they aren't removed prior to fencing, and direct mortality from dehydration.	Same as the Proposed Plan.
Working with cooperators to assist in the BLM's mission to manage wild horse and burro herds within their AML and to establish where there are conflicts with species, agencies, and other uses.	Bighorn sheep ranges overlap the majority of burro herd areas. Competition for forage in these overlap areas could occur; however, burros shall be managed within the established AML, which would allocate forage and natural water resources equally among burros and wildlife.	Bighorn sheep ranges overlap the majority of burro herd areas. Competition for forage and water in these overlap areas would be reduced because burros would be totally removed from these areas.	Same as the Proposed Plan.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Wild Horses and Burros (continued)</b>			
The current management of overlapping HAs ad HMAs with variant management decisions and prescriptions would result in inefficient management of burros between California and Arizona.	Combining Chemehuevi and Havasu HMAs into one reduces the area by 336,650 acres and the AML by 42. This alternative maintains one of three current viable wild burro HMAs in the CDD.	Herd Areas would be recognized, but HMAs would not be designated for retention and management of either wild horses or burros. Impacts to wild burros would be complete removal through live trappings using helicopter assisted removals or water/bait trapping.	Combining the Chemehuevi and Havasu HMAs into one reduces the area by 221,260 acres and maintains the AML of 150 burros.
The current management of overlapping HAs ad HMAs with variant management decisions and prescriptions would result in inefficient management of burros between California and Arizona.	Combining the Chocolate/Mule Mountains and Cibola/Trigo HMAs into one reduces the area by 198,602 and the AML by 91 burros.	(See above.)	Combining the Chocolate/Mule Mountains and Cibola/Trigo HMAs into one reduces the area by 147,334 acres and the AML by 74 burros.
Manage the Piute Mountain HA for zero burros, removing current population.	Same as the No Action Alternative.	Same as the No Action Alternative.	Managing the Piute Mountain HA reverses the decision from the CDCA Plan not to manage burros in this HA. Requirements to manage this HA may include augmenting the herd with other burros to increase genetic viability and developing Fenner and Barrel Springs for water.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Recreation Use and Motorized-Vehicle Access</b>			
<p>Closure of inventoried routes would constitute a small percentage of the total mileage; access to all regions of the planning area would be little changed. The extent of non-inventoried wash routes that would be closed in “washes closed zones” is unknown, though access within these zones would be provided via specified routes that afford access to most parts of the zones. Opportunities for recreation would largely be unchanged.</p>	<p>The network of routes available for motorized-vehicle use would be similar to that of the No Action Alternative. Hence, impacts to motorized-vehicle based recreation would be the same.</p>	<p>Motorized-vehicle access in DWMA's would be restricted to a greater degree than under the No Action Alternative and Proposed Plan. Opportunities for certain types of recreation would be reduced in these areas. Outside DWMA's, access would be the same as under the No Action Alternative and Proposed Plan.</p>	<p>Same as the Small DWMA--A Alternative except that motorized-vehicle access would be allowed on redundant routes outside DWMA's, marginally increasing opportunities for recreation.</p>
<p>The existing “300-foot rule” for stopping, parking, and vehicle camping, except in sensitive areas where the limit is 100 feet, provides adequate space for these activities.</p>	<p>Same as the No Action Alternative except of the distance is measured from the center line of the road versus the edge of the road.</p>	<p>Restricting stopping and parking to 30 feet from centerline of an approved route in DWMA's would provide adequate space for these activities. Limiting vehicle camping to designated sites in DWMA's would diminish opportunities for this activity. Outside DWMA's, opportunities for stopping, parking, and vehicle camping would be the same as under the Proposed Plan.</p>	<p>Limiting stopping, parking and vehicle camping to within 300 feet of route centerline in DWMA's would provide adequate space for these activities, though opportunities for vehicle camping would be diminished upon limiting motorized-vehicle travel to paved roads, maintained dirt routes, and recreational touring routes. Outside DWMA's, opportunities for stopping, parking, and vehicle camping would be the same as under the Proposed Plan.</p>

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Recreation Use (continued)</b>			
Not addressed.	Under this alternative, the area designations of Ford Dry Lake and Rice Valley Dunes would be changed to preclude vehicular "free-play." This action would affect relatively few OHV enthusiasts due to the low level of use at both areas.	Same as the Proposed Plan.	Same as the Proposed Plan.
Competitive vehicle events in the Johnson Valley to Parker corridor would be retained. Opportunities for events in the Parker 400 corridor or in accordance with MUC guidelines are already substantially constrained by resource conditions	Competitive vehicle events in the Johnson Valley to Parker corridor would be retained. Elimination of the Parker 400 corridor and events permitted in accordance with MUC guidelines outside established corridors would result in no additional impacts to recreational opportunities as they are already substantially constrained by resource conditions (Parker 400 race has not been run in over a decade and interest is no longer being expressed).	Same as Proposed Plan with addition of the following. Events conducted outside the Johnson Valley to Parker corridor and OHV open areas would be prohibited. With closure of the two OHV open areas under this alternative, opportunities for events are restricted to the Johnson Valley to Parker corridor; adverse impacts to recreation are not anticipated since BLM has never received an application to conduct an event in either OHV open area.	Same as the Proposed Plan.
<b>Impacts to Mineral Development</b>			
There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place.	Compensation requirements would be simplified to one formula but would increase for small operations and would possibly reduce for a few large operations. In areas where MUC M changes to MUC L casual use would be subject to more costly and time-consuming plans of operations and NEPA review.	There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place, but smaller DWMA's would mean that fewer acres would be subject to described effects.	There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Mineral Development (continued)</b>			
Not addressed.	Nearly all operations would benefit from the authorization streamlining of the 100 acres programmatic plan consultation with the U.S. Fish and Wildlife Service. Requiring a performance bond and performance standards for reclamation would increase the cost for all surface-disturbing operations regardless of size.	There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place, but smaller DWMAs would mean that fewer acres would be subject to described effects.	There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place.--
There would be no additional mitigation, compensation, and reclamation requirements and costs beyond those already in place.	Minerals operations in WHMAs could be subject to a variety of small scale surveys, mitigation, compensation, and reclamation requirements that could result in a slight increase in the cost of operation and shutdown of operations.	Same as the No Action Alternative.	Impacts are similar to those described in the Proposed Plan; however, the WHMAs are smaller. Therefore mitigation, compensation, and reclamation requirements would be over a smaller area.--
There would be a slight loss of access from closing non-routes which could affect casual mining activity.	Same as the No Action Alternative.	Access in DWMAs would be considerably more reduced, having a greater effect on casual mining activity and creating more instances of access authorizations.	Access in DWMAs would be considerably more reduced, having a greater effect on casual mining activity and creating more instances of access authorizations; however, the access network outside DWMAs would increase to nearly the extent of the No Action Alternative and reduce the need for access authorizations.
Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of mining rights in these areas.	Consolidations of land ownership would benefit access and operations and simplify legal aspects of mining rights (where surface and mineral estates were not split).	Extended periods of time may be required to complete acquisition goals as there would be fewer acres in higher priority DWMAs and more acres in lower priority WHMAs.	There would be no essential change from the Proposed Plan except that acquisitions/ownership consolidations would cover less area (50 percent conservation zone goal).



No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Cultural Resources</b>			
Not Addressed	Cattle grazing impacts to cultural resources would be reduced by the 7 percent reduction in size of Lazy Daisy Allotment and deletion of Chemehuevi Allotment. Loss of grazing use on Ford Dry Lake Allotment would help protect any resources in that area.	Similar to Proposed Plan but less impact due to 37 percent reduction in Lazy Daisy allotment. Loss of Ford Dry Lake and Rice Valley sheep Allotments would reduce damage to cultural resources. Additional cultural resource benefits would occur by eliminating Herd Management Areas for wild horses and burros.	Similar to Proposed Plan but less impact due to 37 percent reduction in Lazy Daisy allotment.
Not Addressed	Elimination of the Parker 400 corridor would limit further impacts to cultural resources.	Elimination of the Parker 400 corridor and Johnson Valley to Parker corridor would limit further impacts to cultural resources.	Similar to the Proposed Plan.
Land disturbing projects approved on a case-by-case basis with cultural resource surveys and studies	Limiting total land disturbance to one percent on federal lands in DMWAs would protect cultural resources.	Same as the No Action Alternative	Limiting total land disturbance to three percent on federal lands in DMWAs would protect cultural resources.
Routes designated closed would protect cultural resources. Assessment of potential cultural resource sites will be coordinated with SHPO.	Same as No Action Alternative with 239 miles of routes closed.	Same as No Action Alternative but more miles (848) of routes closed	Same as No Action Alternative, but more miles (760) of routes closed.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Lands and Land Use Authorization</b>			
Under this alternative there would be little change to the current management practices of processing for land use application. Applicable mitigation measures and compensation are currently required for new impacts to desert tortoise and its habitat according to current policy.	Compensation would be simplified to one formula, (5:1) for all actions in DWMA resulting in increased compensation for small actions and possibly reductions for the few very large operations.	Impacts are similar to those described in the Proposed Plan, but smaller DWMA's would mean that fewer acres would be subject to described effects.	Same as the Small DWMA--A Alternative but a 3 percent surface disturbance limit would result in fewer negative discretionary decisions for lands actions requests over time or that the threshold would actually be reached.--
Under this alternative there would be little change to the current management practices of processing application for utilities and other rights-of-way. Habitat protection for special status species would continue to help define design and mitigation requirements for land actions.	Lands action proposals in WHMA's could be subject to a variety of small-scale surveys, mitigation, compensation, and reclamation requirements that could result in impacts ranging from a slight increase in the cost of operation and closure operations.	Same as the Proposed Plan.	Same as the Proposed Plan with the exception that there would be fewer acres in the WHMA's so there would be less mitigation, compensation, and reclamation requirements implications.--
There would be a slight loss of access from closing non-routes which could affect access to some private lands.	Same as No Action Alternative.	Access in DWMA's would be considerably less and would impact casual access to private lands and various rights-of-way.	While access in DWMA's would be considerable less, the access network outside DWMA's would be increased to nearly the same network as in the No Action Alternative. This could possibly reduce the need for access authorizations to private lands.
Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of lands actions that currently cross mixtures of public and private lands.	Consolidation of land ownership is greater than in the No Action Alternative and would benefit land actions where there is single, uncomplicated ownership.	There would be no essential change from the Proposed Plan other than it may require a longer period of time to complete acquisition goals in this alternative because there would be fewer acres in higher priority DWMA's and more acres in lower priority WHMA's.	There would be no essential change from the Small DWMA--A Alternative except that the acquisitions/ownership consolidations target area is reduced to 50 percent of the conservation zone.

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Socio-Economic</b>			
<p>Developments proposed in Lazy Daisy Allotment would impact the lessee by increased coordination and cost associated with installation of improvements.</p>	<p>A loss of acreage (21,000 acres) in the Lazy Daisy Allotment would not significantly affect grazing operations due to the ephemeral production of the area.</p>	<p>Loss of the northeast portion of the Lazy Daisy Allotment and loss of ephemeral grazing use would directly impact livestock production on 140,357 acres. Based on past use, impacts to Lazy Daisy Allotment appear minor. . If the lessee requests relinquishment, cattle grazing would cease on 332,886 acres.</p>	<p>Impacts are the same as the Small DWMA--A Alternative.</p>
<p>Current socio-economic impacts to lessees that lease the Chemehuevi Allotment would not change.</p>	<p>The loss of ephemeral forage use from the Chemehuevi Allotment would directly impact livestock production and preclude potential production of livestock.</p>	<p>Same as the Proposed Plan.</p>	<p>A loss of grazing use on the Chemehuevi allotment by 27 percent would not be a loss of perennial AUMs because this is an ephemeral allotment. There would be substantial impact to management flexibility. The consequence of this reduction would make the grazing season so short and cattle numbers so low that economic benefits would be marginal.</p>
<p>Current, socio-economic impacts to lessees that lease the Rice Valley and Ford Dry Lake Allotments would not change.</p>	<p>Deleting the Ford Dry Lake Allotment would have a negative impact on the grazing operator by eliminating the economic benefit from potential sheep production. Nevertheless, the economic impact would be minimal because the allotment is rarely grazed.</p>	<p>Deleting Rice Valley Sheep allotment would have a negative impact on the grazing operator by eliminating the economic benefit from sheep operations. The economic impact would be minimal, however, because the allotment is ephemeral and is only grazed in years when forage production is greater than 200 pounds-per-acre.</p>	<p>Same as the Proposed Plan.</p>

No Action	Proposed Plan	Small DWMA--A	Small DWMA--B
<b>Impacts to Socio-Economic (continued)</b>			
<p>The closing of routes that would add to routes already closed through the CDPA in 1994 would bring the total roads closed to about 18 percent. This would have a minor effect upon casual use access and recreation.</p>	<p>Designating routes as “open,” “closed,” or “limited” would not significantly affect traffic patterns. Less than 5 percent of inventoried routes are proposed for closure, and wash-closed zones would have little to no significant socio-economic effect on the human component.</p>	<p>Same as the Proposed Plan.</p>	<p>Same as the Proposed Plan.</p>

## **4.6 Cumulative Effects**

Cumulative effects are the incremental effects of a proposal added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes them (see 40 CFR 1508.7). The analysis of cumulative effects identifies the context within which effects of the proposed actions would occur and the implications of interaction of proposed actions with other actions within the region. The entire California Desert Conservation Area (CDCA) is considered in this analysis. In order to understand the cumulative effects of this plan, previous actions and plans need to be reviewed. The following presents a brief, chronological review of major changes in land use management in the CDCA and relates past actions to proposed NECO decisions.

### **4.6.1 Prior to 1976**

The California Desert remained a desolate area for the first few decades of the 20th century. It was pass-through country for highways, railroad, and utilities and had episodes of mining and grazing in several localities. Scattered towns, industrial centers, and infrastructure were established to support trans-desert uses and mining. In the 1930s, Death Valley and Joshua Tree National Monuments (now national parks) were designated. In the 1940s, several large military reservations were created for military training, testing, and staging areas. The aggregate of these national monuments and military lands totaled about six million acres, or one-quarter of the CDCA which encircles about 25 million acres. These designations affected some public uses and access. Until the 1950s, relatively little of the desert had been visited with any intensity by humans for economic or social purposes, except for military uses, livestock grazing, and urban areas along rivers. By the 1960s, uses in the desert were increasing, meeting a variety of new demands of adjacent, ever-expanding southern California population centers. A general concern arose over surface disturbances that had caused losses of natural and cultural values and tensions developed among various public interests.

### **4.6.2 The 1976 Federal Land Policy and Management Act and the 1980 California Desert Conservation Area Plan**

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA). Up to this time, there was no management mandate or comprehensive land use plan to guide land management across the vast California Desert. FLPMA established the California Desert Conservation Area (CDCA). Congress recognized that the desert contains special values for a number of different interests; had fragile ecosystems, natural resources and cultural values that needed to be conserved; and was under significant use pressure from large adjacent population centers in southern California. BLM was to develop a land use plan (for lands managed by BLM) relying on good science and public participation and resolve inherent conflicts with values and uses. FLPMA mandated that BLM administer public lands on the basis of multiple-use management. The BLM completed the CDCA Plan in 1980. A number of management tools were included: programmatic management zones, program elements with specific use allocations, and special management areas. The CDCA Plan allocated uses, brought order and regulation, specified environmental protection and mitigation, and required additional planning for a number of areas and uses, including routes of travel designations. Multiple-use management is not one-dimensional, but allows for the co-existence of many uses with natural resources and cultural values. Unauthorized land uses and new access routes on public lands were to end. Meeting the CDCA multi-use management mandate in FLPMA required across-the-board compromises.

The CDCA Plan decisions included the following:

1. managing species and habitats through regulated uses and general zoning
2. allocating various shrub lands, dunes, and playas as OHV use areas
3. designating (to be accomplished later) routes of travel in limited use management areas
4. providing for a variety of recreation opportunities including OHV, competitive events, appreciation of natural and cultural values, and hunting
5. conserving cultural/Native American values through preservation, mitigation, and enhancement actions and protocols
6. proposing 2.1 million acres for wilderness designation (use restrictions)
7. managing mining and rights-of-way through zoning, corridors, and mitigation measures consistent with state regulations
8. allocating specific areas and levels of grazing to livestock grazing and wild horses and burros
9. designating 73 Areas of Critical Environmental Concern (ACEC) for natural and cultural values

#### **4.6.3 State and Federal Endangered Species Acts**

Over the last 20 years, approximately 30 species of plants, amphibians, reptiles, birds, or mammals were listed as threatened or endangered under federal and state endangered species acts (ESA). Habitats for most of these species are localized, but habitats for the desert tortoise, Mohave ground squirrel, and Peninsular bighorn sheep cover millions of acres. An additional 120 species are referred to as “special status” species. These listings result from a variety of causes including the following:

1. cumulative habitat loss from a variety of uses on both private and federal lands
2. decline in habitat quality due to a variety of factors such as water diversions, habitat fragmentation, and wild fires
3. diseases
4. changes in ecosystem dynamics such as exotic plant invasions
5. natural rarity combined with any of the above.

For these listed species, the USFWS has designated “critical habitat” that covers about 5.5 million acres, 60 percent of which is located outside military reservations, national parks, and wilderness boundaries. Most critical habitat occurs in lower elevations, while designated wilderness areas generally occur at higher elevations in the desert. Congressional designation areas and sensitive species habitat cover a great majority of all federal lands in the CDCA.

The listing of species under the federal ESA required federal land management agencies in the CDCA to consult with the USFWS on the effects of land use plans on the listed species. The plans (or amendments to existing plans in the CDCA) will fulfill this requirement. Until the plans are completed, agencies must consult on a case-by-case basis with the USFWS regarding any use authorizations which may have an effect on the species involved. Some consultations have resulted in temporary use requirements and restrictions which will remain in place until plans and biological opinions are completed. Some requirements are being brought forward into plan proposals.

#### **4.6.4 The California Desert Protection Act**

In 1994, Congress passed the California Desert Protection Act (CDPA), which transferred to the National Park Service 3,500,000 acres of the 13,000,000 acres managed by the BLM. These transfers added to Death Valley and Joshua Tree National Parks, and created the Mojave National Preserve. Nearly 3,800,000 acres (40 percent of the remaining 9.5 million acres managed by BLM) were designated as wilderness areas. With this act, half of the CDCA was included in either military reservations, national parks, or wilderness areas. The remaining lands are equally split between private and federal lands (30 percent of which are encumbered with critical habitats).

In designated wilderness areas and national parks, many uses are limited or prohibited. These uses include livestock grazing, wild horses and burros, mining, rights-of-way, hobby rock collecting, and vehicle access. Other uses such as livestock grazing, wildlife management, and access to, and use of, private lands require a higher standard of demonstrated need for installation of facilities. Other adjustments to development and commodity production not specifically prohibited by law in national parks are being made through land use planning. Given the size of lands involved, the effect of the CDPA on current and potential uses was dramatic. For instance, 40 of the 49 mineral commodities with identified potential occurrence in the CDCA have from a third to all of their potential occurrence locations in wilderness areas. Half of the former popular rock hounding areas are now in NPS and wilderness areas. While current and future economic values of minerals in these areas are not known, new mineral exploration, location, and development are not allowed in wilderness areas. Hobby rock and mineral collecting is not allowed in national parks, and in BLM wilderness areas is dictated by practicalities of walking distance, temperatures, and the weight of minerals. In addition, NPS land use decisions eliminated four burro herd management areas and ten former BLM cattle grazing allotments.

#### **4.6.5 Benefits to Species and Habitats**

The CDCA Plan, prior designations of military and NPS units, and the more recent CDPA and ESA listings have all had positive effects upon the conservation of species and habitats. Nevertheless, many issues remain unresolved. These previous actions were not developed on a landscape basis and have resulted in fragmented conservation units.

#### **4.6.6 New Land Use Plans/CDCA Plan Amendments--2002**

The California Desert Conservation Area has been divided into geographic and jurisdictional regions. Ten land use plans have been, or are being, prepared. These plans are:

1. Northern and Eastern Colorado Desert (NECO) Coordinated Management Plan
2. Northern and Eastern Mojave Desert (NEMO) Management Plan
3. West Mojave Plan
4. Coachella Valley Multi-Species Conservation Plan (MSCP)
5. Imperial Sand Dunes Recreation Area Management Plan
6. Western Colorado Desert Routes of Travel Designations
7. Colorado River MSCP (lies outside the CDCA)
8. Joshua Tree National Park General Management Plan

9. Death Valley National Park General Management Plan
10. Mojave National Preserve General Management Plan

Most of these plans are reviewed in Chapter 1. Cumulatively, the plans will cover nearly the entire 25 million acres of the CDCA as well as the narrow strip of land between the CDCA and the Colorado River. The first seven update existing land use plans with an emphasis on species and habitats issues, while the last three NPS plans primarily focus on general management. The first six plans will amend the CDCA Plan. Three plans--West Mojave, Coachella Valley MSCP, and Colorado River MSCP--will also apply to state and private lands as habitat conservation plans (HCP) in the Antelope, Victor, and Coachella valleys and along the Colorado River. The plans address the recovery of 30 listed species and the conservation of an additional 120 special status species on a landscape scale.

Reallocation of some uses is required. In the case of HCPs, solutions include the search for the amount and location of land to retain as habitat and land that can be developed. In the case of public lands, solutions focus on conservation with minimal use impacts. The nature of decisions will be relationship-specific to uses and species. Because half of the CDCA was already withdrawn from mineral development and vehicle entry, an assumption is made in this cumulative effects analysis that CDCA Plan amendments will essentially include no new mineral land withdrawals and area closures, but instead will rely on general (non-use specific) surface disturbance limits, as proposed in NECO. With the completion of these plans, species protection and use issues should decline. These plans should serve as a basis for future decisions on use authorizations for many years.

Congress is currently considering the designation of more wilderness areas (550,000 acres); and, while much less likely than in the past, there could be more species listings under ESA.

The timing of plans varies by plan. General Management Plans for Joshua Tree and Death Valley National Parks and the Mojave National Preserve have been completed. NECO and NEMO FEISs are being released to the public. Imperial Sand Dunes and Coachella Valley DEISs have been released for public review. Other plans are still in the planning stage. Therefore, it is not possible to clearly assess cumulative effects of all the plans. However, judging from work in progress, coordination on the CDCA Plan amendments, and a look at the reasonably foreseeable future, a limited picture can be offered and adds to this review. As plans continue to be developed, discussions of cumulative impacts will be refined.

- National Parks continue the mandate of resource preservation and meeting public demand for parkland experiences.
- Military lands would have no change in uses or area, except that Fort Irwin is considering increasing the size of the base by 100,000 acres. It may be necessary to increase the level of conservation on surrounding public lands (addressed in the West Mojave Plan).
- For urbanizing areas on private lands, areas of development and habitat preserves will be defined and local governments and land owners will benefit from plan-level incidental take permits and find project-level regulatory relief with HCPs. Intermingled public lands in these areas will largely be dedicated to habitat conservation. For remote private lands, county governments



estimate little to no growth due to lack of water and infrastructure. Federal lands in key locations, such as freeway exits, would be made available for development.

- Public Lands--covers all BLM plan amendments
  - Off Highway Vehicle (OHV) use will continue to be focused in OHV open areas. In the Imperial Sand Dunes, the amount of open area is in question.
  - Access on routes of travel, including navigable washes, will be designated as open, closed, or limited use as required in the CDCA Plan and CFR regulation. The nature and array of designations vary from plan to plan according to routes inventories, access needs of stakeholders, planning criteria, and distributions of sensitive species. An inventory of existing routes is included in all plans. The vast majority of current routes evolved over decades of mining, ranching, urban development, military testing/training, trans-desert infrastructure, and recreation. Since uses and needs change over time, it does not necessarily follow that all routes are equally needed today. Executive orders and regulations require BLM to make judicious review of access for needs, evaluate conflicts, and make decisions. As a result of route designation, the number of currently available routes will probably be reduced by small to moderate levels (5 percent closure in NECO). Designations should largely satisfy the need to protect the environment and provide for reasonable public access. Routes designations do not affect current or future access granted under specific uses authorities. The issue of access in navigable washes is largely unique to NECO. Outside of the NECO planning area, most washes will be closed except for those specifically designated open. In the NECO planning area, only about 10 percent of the currently available washes (by area) are proposed to be closed--all inside proposed DWMAs. In other areas valued for hobby rock and mineral collecting, camping, hunting, and areas near urban centers, washes would be available for motorized-vehicle use. Route designations made in these plans will not affect the resolution of RS2477 claims. Stopping and parking will continue to be 300' throughout public lands except 100' in DWMAs and other sensitive areas. There should be no further unauthorized proliferation of new routes on federal lands.
  - Opportunities for competitive vehicle events outside open areas will be reduced due to natural resource concerns and cultural values.
  - Other recreation including camping, hunting, sightseeing, and hobby collecting would be little affected (other than as noted above).
  - Mining would be little affected. Most future mining activity will center on continued brine and sand-gravel operations. Costs for mitigation and compensation will be somewhat higher in areas with conservation emphasis, but permit processing should require less time. DWMAs are somewhat reduced in size from the current desert tortoise critical habitat so as to not encumber some high use value areas (e.g., the gold belt east of Highway 78, Imperial County). A 1 percent surface disturbance limit should not affect uses overall given the reasonable foreseeable future scenario, as long as use applicants and BLM officials are

judicious in locating uses, minimizing disturbances, and diligent in disturbance restoration. There should be no negative effects on energy projects.

- The situation for mining also applies to siting future rights-of-way. CDCA Plan utility corridors remain unchanged. In the NECO planning area, several large utility projects are currently being considered, including the Cadiz Project (water pipeline-subsurface storage), North Baja Pipeline (natural gas), and the Blythe-Niland Powerline. Similar future projects may arise for water conservation and transfers and for energy/petroleum transmission due to increased trade fostered by the North American Free Trade Agreement (NAFTA).
- Two burro herd management areas with viable herds would be retained in the NECO planning area. In the NEMO planning area, the proposed plan would eliminate two herd management areas. Of the three other remaining herd management areas, one has no burro population at present, and the other two cannot support year-round burro populations on public lands.
- In DWMA's, most ephemeral forage would be allocated to the desert tortoise and other native species. Livestock grazing lessees would be able to sell their perennial operations, at which time those allotments would be unavailable for livestock grazing. This approach for perennial allotments provides for long-term recovery of the desert tortoise without financial impacts to livestock operators. Decisions for ephemeral operations would shortly follow the NECO Record of Decision. Livestock operators would be little affected by ephemeral grazing decisions, since they have no on-site range improvements and permanent herds. The total economic effect of reduced livestock grazing in the CDCA is slight, given the sparse and infrequent nature of available desert forage.
- Land acquisition would continue in order to increase habitat manageability and investment in conservation management areas. Land acquisitions would occur only with willing sellers. This allows private land owners to sell lands that otherwise would be difficult to sell. Disposal of federal lands will help mitigate, or offset, issues of tax base loss to local governments and encourage growth adjacent to existing areas of development.
- Implementation costs would be relatively high for tortoise fencing on major highways, habitat improvements, installation of access signage, land acquisition, and monitoring commitments for listed species.
- Surface disturbance would be less in DWMA's, and investment in restoration would be greater for both new and preexisting disturbance. The cumulative surface disturbance limit in DWMA's will encourage new projects to be located in areas of lower value habitats, thereby supporting conservation and reducing development costs.
- Cultural Resources will be better protected, especially where they are co-located with special status species or located in designated conservation areas. Cultural resources will also be protected by the commitment to end unauthorized proliferation of new routes.

#### 4.6.7 Conclusion

The NECO planning area mirrors the general CDCA situation in which Congressional and Presidential designations since the early 1930s cover about half of the CDCA with national parkland, military lands, and wilderness areas. BLM's 1980 CDCA Plan resolved issues of use and protection and continues to guide management. Today, however, large areas of the CDCA have been designated as critical habitat for about 30 species, including the desert tortoise. While designations and current plans have contributed to the conservation of species, fundamental recovery and conservation of a total of 150 species remains to be resolved in further land use planning.

The NECO plan would have a positive impact on the CDCA by protecting two listed species and their habitats, as well as conserving a full range of natural communities and species, including about 60 special status plants and animals. Certain use issues and related problems of land administration would also diminish. These results would be achieved primarily through adoption of standards and guidelines for land health, establishment of DWMA and WHMA with strict management provisions for land use activities and habitat improvements, designation of routes of travel, and adjustments to current wild burro herds and some other programs. While the focus of management change is on federal lands (about 55 percent of the planning area, or 3 million acres) that lie outside Joshua Tree National Park, the Chocolate Mountains Aerial Gunnery Range, and BLM wilderness areas, the degree of change is based in part upon a landscape approach--i.e., the relationship of current areas of use and protection.

Many public comments on the draft plan/DEIS indicate that NECO plan decisions would contribute to significant adverse cumulative effects, particularly to access and use of desert resources. However, in light of past actions and the potential for cumulative change from all current plans, BLM analysis shows that NECO decisions would be cumulatively small and spread across several programs. With the amount of land withdrawn from mineral and land entry through Congressional designations, NECO proposes no additional withdrawals and emphasizes addressing impacts through location, design and mitigation. Mitigation and compensation costs would be higher in more sensitive conservation areas and lower in less-sensitive areas.

Based upon the NECO inventory of routes of travel, about 10 to 15 percent of the routes that existed in 1994 were closed by the CDPA, and this may also be the case CDCA-wide. There will be a net reduction of routes throughout the CDCA from current plans. NECO routes closures (5 percent of miles of inventoried routes and 10 percent of washes by area) would bring the cumulative total to about 15 percent over the last 30 years. However, by the nature of the planning process (total area inventory, considerable resources and uses data, and collaborative/public involvement) closures will have the greatest benefit to species, while still serving nearly all specific use needs. While many in the public decry the closure of two small OHV open areas, these areas have had virtually no use for the 20 years since the CDCA Plan was completed. The popular OHV open areas will remain open although size in the Imperial Sand Dunes is in question until the plan for that area is completed. The opportunity for competitive vehicle events is reduced with the closure of the Parker 400. About 70 percent of the race course is within a proposed DWMA, a compelling reason for closure of the Parker 400. There is no current promoter for this race, and interest in this race has waned.

The CDPA placed 10 grazing allotments under the NPS, all of which will be eliminated. Reallocation of grazing forage in BLM plans will affect several more allotments, including about 60 percent of the area of sheep allotments in the CDCA (only a small portion of these are in NECO). In NECO, the reallocation of

forage on ephemeral allotments has a rather immediate effect on livestock operators, but since ephemeral grazing allotments have no on-the-ground investment in facilities or on-site herds, there would be no financial loss. In addition, the operators do not depend upon these allotments since they only support useable forage one out of ten years (on the average). One of the two involved ephemeral allotments currently has no assigned operator to be affected. The effect on the one perennial operation is positive in that the operator has choice in time to discontinue grazing and would most likely receive financial compensation. The contribution of desert livestock grazing to the local economy throughout the CDCA is extremely small by the very nature that desert forage production is low.

The history of resolving burro issues in the CDCA has resulted in the elimination of most herds. Outside NECO, additional herds are proposed to be eliminated. The resolution of management issues in the NECO planning area would be accomplished without elimination of either of the two remaining herd management areas.

Plan decisions would support local and state management responsibilities for intermingled state and private lands (about 14 percent of the planning area). Change in the pattern of land ownership would have positive effects for all levels of government, including making some federal lands available for community expansion and local development.

(This page intentionally left blank.)

## Chapter 5–Plan Monitoring

### 5.1 Purpose and Scope

Plan monitoring is an essential component of natural resource management because it provides information on the relative success of implementing management strategies. The proposed monitoring program of NECO will determine if the goals and objectives of the program are being met. Monitoring demonstrates the progress and accomplishments of the Plan, and with the information generated by monitoring, managers can objectively adjust programs when needed.

The implementation of the NECO Plan amendments would be monitored to ensure that management actions follow prescribed directives to meet plan objectives and are based on accurate assumptions. Some maturation of projects is needed before results can be discerned. Therefore monitoring would not necessarily occur immediately after implementation of any program.

Findings obtained through monitoring, together with research and other new information will provide a basis for adaptive management changes to the plan. The processes of monitoring and adaptive management share the goal of improving effectiveness and permitting dynamic responses to increased knowledge and a changing landscape. The monitoring program itself will not remain static. Monitoring would be periodically evaluated to ascertain if the monitoring questions and standards are still relevant, and the program would be adjusted as appropriate. Some monitoring items may be discontinued and others added as knowledge and issues change. These changes to the monitoring of the plan are a part of plan maintenance.

Monitoring will collect information in a cost-effective manner, and may involve sampling, modeling, or remote sensing. Monitoring would be designed so that it is not cost prohibitive. It is not necessary to monitor every management action. The level of monitoring will vary, depending on the sensitivity of the resource or area and the scope of the action.

Monitoring will be coordinated and results shared with other parties to enhance their usefulness. The approach will build on past and present monitoring. For BLM-administered lands, field offices will be responsible for the collection, compilation and analysis of much of the data.

NECO plan amendments monitoring is tiered to the strategy described in the California Desert Conservation Area Plan. The CDCA Plan monitoring includes project level NEPA analysis to satisfy requirements of the Endangered Species Act, Clean Water Act and Clean Air Act.

Table 5-1 summarizes a variety of topics and questions to be answered by monitoring. Each of the Proposed Plan Amendments would be monitored in terms of their ability to meet the objectives of the CDCA Plan. The activities in Table 5-1 form the basis and starting point for plan monitoring which will be adopted in the Record of Decision. Plan monitoring is separate from and different than inventory activities. Plan monitoring consists of gathering information to answer key management questions. Key questions will contain thresholds or levels of acceptability and compliance, and achievement of plan objectives. Inventory does not contain thresholds of acceptability/non-acceptability.

## **5.2 One-time, Continuous, and Sequential Monitoring**

Some monitoring will be continuous or long term. Examples include use authorizations, and desert tortoise and bighorn sheep population trends.

Some monitoring will be sequential. That is, initial monitoring efforts may lead to subsequent new or modified monitoring.

The results from initial monitoring may indicate that no additional monitoring is needed (one time).

## **5.3 Collaboration in Monitoring**

The roles, responsibilities and interests of NECO cooperating land management agencies, the Desert Managers Group, U.S. Geological Service, Biological Resources Division (USGS-BRD), academia, and interest groups such as the California Native Plant Society and Desert Wildlife Unlimited provide opportunities to collaborate in monitoring efforts.

NECO cooperators may collaborate in the development of monitoring activities to create efficiencies in shared monitoring objectives, tasks, technical expertise, resources and funding. The Desert Manager's Group, USGS-BRD and academic institutions may provide assistance in collaborative monitoring efforts. Collaboration in monitoring should aid in consistency, reduce redundancy, and enhance resource understanding and management on a broad scale. As other CDCA Plan amendments are completed, some monitoring efforts may coalesce into desert-wide efforts.

## **5.4 Primary Monitoring Subjects**

Table 5-1 lists the primary monitoring subjects of the NECO Plan. The monitoring recommendations for each topic, e.g., threatened and endangered and special status species, desert tortoise, grazing allotments, burro management, etc., are described in detail in various appendices of the FEIS. Each major kind of land use classification in the Plan Amendments is included in the monitoring program. Through collaborative efforts with the parties mentioned above, specific topics within each mentioned category of Table 5-1 would be drafted and finalized for the monitoring program and put into practice as the NECO Plan Amendments begin.

**Table 5-1. NECO Plan Monitoring**

Monitoring Subject	Monitoring Activity
Plan Implementation	Monitoring actions for adherence to prescribed directives and implementation (described in Chapter 6).
General Ecosystem Health	Monitoring to include standards, trends in human disturbances, exotic species establishment, and displacement of native species.
Desert Tortoise	Monitoring to emphasize population dynamics, distribution, predation, diseases and epidemiology, effects of unauthorized uses, recolonization, exotic plants, fires, the effects of land use, and environmental determinants of reproduction.
Bighorn Sheep and Desert Mule Deer	Monitoring to emphasize population dynamics and demography, forage use, deme augmentation, hunting, waters, competition with domestic livestock, and the relationship of forage use and water distribution.
Other Special Status Species	Monitoring to determine population trends, known occurrences of species, life histories and restoration possibilities, biodiversity dynamics, and predictive occurrence parameters.
Burros	Monitoring for census, use occurrence of habitat and forage, disturbance, and competition phenomena with other species.
Use on the DWMA's	Monitoring on a continuing basis for authorized/unauthorized disturbances, restoration, private land use, and vehicle use. Also of importance are wildland fire monitoring; effects of cattle grazing, highway fencing, and land tenure adjustments; and effects of the amendments on the DWMA's.
Use on the WHMA's	Monitoring to include vehicle use of roads and washes, unauthorized disturbances, land tenure adjustments in terms of land transfers, effects of livestock grazing, and cumulative effects.
Species Habitats, Resource Inventories, and Research Needs	Ongoing as other monitoring results are evaluated.



(This page intentionally left blank.)

## Chapter 6–Implementation

This chapter displays the implementation of certain aspects of the Proposed Plan Amendments as well as other non-plan actions and non-BLM actions over the next several years. Non-BLM actions are displayed to give a larger picture of the cooperative nature of many tasks that are occurring throughout the planning area. The tasks and time frames are not intended to constitute decisions for the BLM or other agencies, but to provide a scenario under which implementation could take place. The display of tasks and time frames is intended only to provide a starting point and basis for further discussion on the part of the many private and public collaborators engaged in land and resource management in and around the planning area. The array of tasks does not include monitoring tasks, which are addressed in Chapter 5, but may help define plan implementation monitoring. The actions listed address only those contained in the Proposed Plan Amendments.

Decisions in this plan amendment will be implemented over a period of years. Where specific dates or schedules are not identified for the Proposed Plan Amendments actions in Chapter Two, the rate of implementation and general priorities for overall management would be developed through long-term budgeting processes and in consultation with other agencies, tribes, government units, and collaborators. Specific priorities would be further refined in development of activity plans, project plans, and related NEPA analysis. Priorities would be reviewed annually to help develop the work plan commitments for the coming years. Tasks are organized by issue subject.

### General

Task	Agency/Interest	Time Frame following Record of Decision (Notes)
Create new resources management plan (CDPA requirement)	USMC, BLM	1 year (California Desert Protection Act, Title VIII)
Schedule follow-up activity planning	All	1 year
Hold implementation progress/action meetings	All	Annually
Send applicable NECO map decisions, data and models coverages to NECO cooperators	BLM send to county, state, federal agencies, UC Riverside, etc.	1 year

### Standards for Rangeland Health

Task	Agency/Interest	Time Frame (Notes)
Complete assessments	BLM	See Monitoring Plan

DWMAs--General

Task	Agency/Interest	Time Frame (Notes)
Incorporate map and decisions into public maps, brochures	All	Data bases--1 year Interim public info--2 years Reissue public maps, brochures Develop schedule
Track 1% surface disturbance	BLM, JTNP, USMC	By action
Assess disturbance rehabilitation	BLM, JTNP, USMC	By action
Sign/Fence periphery	BLM, JTNP, USMC	As needed
Notify cooperators of change in military targets	USMC	When proposed
Amend fire management plan	BLM, JTNP, USMC	3 years
Transportation access--construct highway fencing, install bridges and culverts	CalTrans	20 years for 1-10, I-40. When upgrade occurs, Highway 95.
Raven control	BLM, JTNP, USMC	As needed
Retrofit remainder of existing guzzlers to protect tortoise	CDFG	5 years
Increase ranger/warden patrol during high public use period	BLM, JTNP, CDFG	As required
Create public education programs	BLM, JTNP, CDFG, USFWS, USMC (integrate)	5 years
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	2 years to complete closures and signing 4 years to start rehabilitation where needed Highest priority management areas
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	No date set

**DWMAs--Cattle Leases**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Grazing decision to cancel Chemehuevi allotment	BLM	Begin in 1 year (2-year process by regulation)
Grazing decision to reduce size of Lazy Daisy allotment	BLM	Begin in 1 year (2-year process by regulation)
Develop strategy to resolve cattle-tortoise competition--Lazy Daisy allotment	BLM	1 year
Implement above strategy	BLM	2 years after complete strategy
Voluntary relinquishment--Lazy Daisy allotment	Private party	At request of lessee
Utilization/Competition assessments; adherence to Guidelines/Standards assessment--Lazy Daisy allotment	BLM	Annually
Retrofit cattle guards--Lazy Daisy allotment	BLM	5 years

**WHMAs--Bighorn Sheep and Desert Mule Deer**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Grazing decision to cancel Ford Dry Lake and reduce Rice Valley domestic sheep allotments	BLM	1 year (to initiate)
Construct burro exclosures around dedicated waters	CDFG, BLM, USMC	Assess need for this after reaching appropriate management levels
Construct new waters for bighorn sheep and deer	CDFG (lead)	Annual proposal and assessment
Augment/reestablish demes	CDFG (lead)	As feasible
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	4 years to complete closures and signing 6 years to start rehabilitation where needed (Combined with multi-species WHMAs)
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	Long term--accomplish and track requests and progress

**WHMAs--Multi-Species**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Various conservation projects at springs and seeps: remove tamarisk, enhance habitat, bat habitat.	BLM, USMC, JTNP	10 years Develop, prioritize a list. 3 years--Townsend's riparian analysis
Install bat gates	BLM, USMC, JTNP	10 years
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	4 years to complete closures and signing 6 years to start rehabilitation where needed (Combined with multi-species WHMAs.)
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	Long term--accomplish and track requests and progress

**Other Listed Species--Coachella Valley Milkvetch**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Accomplish land tenure adjustment (acquisitions) where occurs on private, SLC lands	BLM	Long term--accomplish and track requests and progress
Develop monitoring plan, send to USFWS	BLM, JTNP	2 years

**Burros--Herd Management Areas (HMAs)**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Write cooperative agreement for Colorado River agencies. Rewrite HMAPs. Hold annual meetings.	BLM (CA and AZ offices, USFWS national wildlife refuges, Picacho SRA, CDFG, USMC)	1 year to write agreement 4 years to rewrite HMAPs
Establish census	All above (BLM lead)	1 year for initial. Once/2 years until achieve AML. Once/3 years thereafter
Gather excess burros to reach appropriate management level	All above (BLM lead)	Continuously to reduce and then maintain numbers. Various methods: trap, wrangler-helicopter
Construct burro exclosures around dedicated waters	CDFG, BLM, USMC	Assess need after burros reach appropriate management level

(This page intentionally left blank.)

## Chapter 6–Implementation

This chapter displays the implementation of certain aspects of the Proposed Plan Amendments as well as other non-plan actions and non-BLM actions over the next several years. Non-BLM actions are displayed to give a larger picture of the cooperative nature of many tasks that are occurring throughout the planning area. The tasks and time frames are not intended to constitute decisions for the BLM or other agencies, but to provide a scenario under which implementation could take place. The display of tasks and time frames is intended only to provide a starting point and basis for further discussion on the part of the many private and public collaborators engaged in land and resource management in and around the planning area. The array of tasks does not include monitoring tasks, which are addressed in Chapter 5, but may help define plan implementation monitoring. The actions listed address only those contained in the Proposed Plan Amendments.

Decisions in this plan amendment will be implemented over a period of years. Where specific dates or schedules are not identified for the Proposed Plan Amendments actions in Chapter Two, the rate of implementation and general priorities for overall management would be developed through long-term budgeting processes and in consultation with other agencies, tribes, government units, and collaborators. Specific priorities would be further refined in development of activity plans, project plans, and related NEPA analysis. Priorities would be reviewed annually to help develop the work plan commitments for the coming years. Tasks are organized by issue subject.

### General

Task	Agency/Interest	Time Frame following Record of Decision (Notes)
Create new resources management plan (CDPA requirement)	USMC, BLM	1 year (California Desert Protection Act, Title VIII)
Schedule follow-up activity planning	All	1 year
Hold implementation progress/action meetings	All	Annually
Send applicable NECO map decisions, data and models coverages to NECO cooperators	BLM send to county, state, federal agencies, UC Riverside, etc.	1 year

### Standards for Rangeland Health

Task	Agency/Interest	Time Frame (Notes)
Complete assessments	BLM	See Monitoring Plan



**DWMAs--General**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Incorporate map and decisions into public maps, brochures	All	Data bases--1 year Interim public info--2 years Reissue public maps, brochures Develop schedule
Track 1% surface disturbance	BLM, JTNP, USMC	By action
Assess disturbance rehabilitation	BLM, JTNP, USMC	By action
Sign/Fence periphery	BLM, JTNP, USMC	As needed
Notify cooperators of change in military targets	USMC	When proposed
Amend fire management plan	BLM, JTNP, USMC	3 years
Transportation access--construct highway fencing, install bridges and culverts	CalTrans	20 years for 1-10, I-40. When upgrade occurs, Highway 95.
Raven control	BLM, JTNP, USMC	As needed
Retrofit remainder of existing guzzlers to protect tortoise	CDFG	5 years
Increase ranger/warden patrol during high public use period	BLM, JTNP, CDFG	As required
Create public education programs	BLM, JTNP, CDFG, USFWS, USMC (integrate)	5 years
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	2 years to complete closures and signing 4 years to start rehabilitation where needed Highest priority management areas
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	No date set

**DWMAs--Cattle Leases**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Grazing decision to cancel Chemehuevi allotment	BLM	Begin in 1 year (2-year process by regulation)
Grazing decision to reduce size of Lazy Daisy allotment	BLM	Begin in 1 year (2-year process by regulation)
Develop strategy to resolve cattle-tortoise competition--Lazy Daisy allotment	BLM	1 year
Implement above strategy	BLM	2 years after complete strategy
Voluntary relinquishment--Lazy Daisy allotment	Private party	At request of lessee
Utilization/Competition assessments; adherence to Guidelines/Standards assessment--Lazy Daisy allotment	BLM	Annually
Retrofit cattle guards--Lazy Daisy allotment	BLM	5 years

**WHMAs--Bighorn Sheep and Desert Mule Deer**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Grazing decision to cancel Ford Dry Lake and reduce Rice Valley domestic sheep allotments	BLM	1 year (to initiate)
Construct burro exclosures around dedicated waters	CDFG, BLM, USMC	Assess need for this after reaching appropriate management levels
Construct new waters for bighorn sheep and deer	CDFG (lead)	Annual proposal and assessment
Augment/reestablish demes	CDFG (lead)	As feasible
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	4 years to complete closures and signing 6 years to start rehabilitation where needed (Combined with multi-species WHMAs)
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	Long term--accomplish and track requests and progress

**WHMAs--Multi-Species**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Various conservation projects at springs and seeps: remove tamarisk, enhance habitat, bat habitat.	BLM, USMC, JTNP	10 years Develop, prioritize a list. 3 years--Townsend's riparian analysis
Install bat gates	BLM, USMC, JTNP	10 years
Implement routes of travel designations (see above for public information aspect)	BLM, JTNP, USMC	4 years to complete closures and signing 6 years to start rehabilitation where needed (Combined with multi-species WHMAs.)
Accomplish land tenure adjustment (acquisitions)	BLM, JTNP	Long term--accomplish and track requests and progress

**Other Listed Species--Coachella Valley Milkvetch**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Accomplish land tenure adjustment (acquisitions) where occurs on private, SLC lands	BLM	Long term--accomplish and track requests and progress
Develop monitoring plan, send to USFWS	BLM, JTNP	2 years

**Burros--Herd Management Areas (HMAs)**

<b>Task</b>	<b>Agency/Interest</b>	<b>Time Frame (Notes)</b>
Write cooperative agreement for Colorado River agencies. Rewrite HMAPs. Hold annual meetings.	BLM (CA and AZ offices, USFWS national wildlife refuges, Picacho SRA, CDFG, USMC)	1 year to write agreement 4 years to rewrite HMAPs
Establish census	All above (BLM lead)	1 year for initial. Once/2 years until achieve AML. Once/3 years thereafter
Gather excess burros to reach appropriate management level	All above (BLM lead)	Continuously to reduce and then maintain numbers. Various methods: trap, wrangler-helicopter
Construct burro exclosures around dedicated waters	CDFG, BLM, USMC	Assess need after burros reach appropriate management level

(This page intentionally left blank.)

## Chapter 7–Consultation and Coordination

This chapter is divided into three sections. The first provides an overview of public involvement in the planning process. The second describes the distribution and public review of the Draft Plan and Draft Environmental Impact Statement (Draft Plan/EIS). The third addresses public comments. The fourth is a list of those who were involved in the preparation of the plan and EIS.

### 7.1 Public and Agency Involvement in the Planning Process

This section relates public and agency involvement in the planning process. Subsections discuss issue identification/public scoping, plan development, the draft and final plan and environmental impact statement, and consultations with the U.S. Fish and Wildlife Service (USFWS), the State Historic Preservation Office, and Native American tribal councils.

#### 7.1.1 Issue Identification/Public Scoping

The Council on Environmental Quality regulations (40 CFR 1501.7) and BLM planning regulations (43 CFR 1610) require an early and open process (scoping) for determining the planning issues. The regulations also require that agencies provide opportunities for public involvement in the planning process, including review of the planning criteria and the Draft Plan/EIS. Efforts have been made to make the public aware of the planning process and of opportunities for involvement.

Public Scoping was begun in 1993 for the Eastern Colorado Recovery Unit and included four public meetings and written comments. In 1994 the Northern Colorado Desert Recovery Unit was added to the planning area, so Public Scoping was reinitiated with a Notice of Intent to prepare the Plan and an EIS being published in the *Federal Register* on March 15, 1994. This publishing also announced the schedule and location for public meetings and invited public participation. The announcement was amended on April 25, 1994, to add additional public meetings and extend the public comment period until June 11, 1994. In 1994, eight public meetings were held between March 29 and May 11, and a number of letters were received. A total of 12 meetings was held to identify public concerns in the issue identification process. The totals for the two phases are as follows:

#### 1993 Public Scoping Process

- 4 meetings with 67 individuals attending, 137 comments
- 17 letters with 45 comments

#### 1994 Public Scoping Process

- 8 meetings with 128 individuals attending, 259 comments
- 28 letters with 100 comments
- discussions with 14 local, state, and federal agencies; 4 tribal councils; 2 utility companies and 1 major land owner

The total number of public comments was 541. Many issue subjects were covered: e.g., planning process, data collection, research and monitoring, management mandates, and a number of resource and use values. Six major issues were identified that included the bulk of individual comments. These six issues should be considered as aggregates of comments. For instance, addressing the issue of recovery of the desert tortoise must include a consideration of several related comments: e.g., management of a variety of uses, control of ravens, monitoring, research, and coordination among agencies and interest groups. During the planning process, two additional issues were added as identified in Chapter 1.

### **7.1.2 Plan Development**

A number of federal, state, and local agencies and non-agency interests have been involved throughout the planning process since public scoping. These entities helped in developing and analyzing data, developing and reviewing plan proposals and alternatives, developing an understanding of the causes and effects of uses on species and habitats, and developing public support for the planning process. The specific individuals involved comprised a group called the Cooperating Agencies/Interest Group Committee and met with planning staff over the entire period of plan development. Many of the agencies and interests noted below were represented on this group.

A public mailing list of about 800 individuals, interest groups, and agencies has been developed. At several times throughout the planning process, notifications were sent to this group on the following topics: completion and availability of the inventory of routes of travel and its availability for review or purchase; eight mid-process review public meetings in March, 1996; and a general update in August, 1997. Finally, elements and status of the plan were reviewed at some of the regular meetings of BLM's Desert Advisory Council (public meetings) over the years.

### **7.1.3 DEIS and FEIS: Distribution, Public Review, Protest of Decisions**

The Draft Plan and EIS (DEIS) document that resulted from the process described above was released on February 26, 2001, for a 90-day public review period. Detailed information on the distribution of the DEIS and public meetings held is found in section 7.2. The public review period for the DEIS extended an additional five months due to popular request for more review time based upon document complexity and the high level of public concern. Nine public meetings were held and over 1,600 comments were received. Currently, the mailing list numbers about 2,000.

Developing the Proposed Plan and final EIS (FEIS) primarily involved a process of revising the DEIS based upon review and consideration of the public comments received. As a result of the public comments received, BLM has been able to strengthen, refine, and clarify the text, proposed decisions, analysis, and conclusions. The release of the FEIS initiates a 30-day review and protest period. This period begins with the publishing of a notice of availability in the *Federal Register*. Those persons and organizations on the mailing list will receive a copy of the document. The FEIS will also be posted on the BLM California website. The FEIS consists of two volumes: document chapters in one; appendices in the second. All persons who have participated in the planning process and who have an interest that is or may be adversely affected by approval of the plan amendment may protest the approval of the amendment within the 30-day review period noted above. A protest may raise only issues which were submitted for the record during the planning process. Further details of how to file a protest are provided at the beginning of this document, on page two of the

coversheet. The FEIS will also be sent to the Governor of California for a 60-day review of consistency with state or local plans, policies, and programs. The Approved Plan and Record of Decision will be prepared after any protests or inconsistencies have been resolved.

#### 7.1.4 Endangered Species Act Consultation

The Congress specified that the purposes of the *Endangered Species Act of 1973* (Public Law 97-304) (ESA), as amended, “are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions” (Sec. 2(b)). The ESA states it “to be the policy of the Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act” (Sec. 2(c)(1)). The fulfillment of these purposes is a fundamental issue in this planning effort.

The ESA further provides that “each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species” (Sec. 7(a)). By Federal regulations (*Code of Federal Regulations, Volume 50, Part 402*) implementing the provisions of Section 7 of the ESA, the BLM and other Federal agencies must *consult* with the USFWS on projects, plans, and actions that may negatively affect a threatened or endangered species. The USFWS then issues a *biological opinion* relative to jeopardy and adverse modification. A similar review, referred to as a *conference*, is required for species that are proposed for federal listing.

In earlier years, consultations were not conducted on land use plans, such as the CDCA Plan. The courts have determined that consultations are required on land-use plans. Given this requirement, BLM has initiated consultation with USFWS on the effects of the NECO Plan amendments to the CDCA Plan on threatened, endangered, and proposed species. The Approved Plan and Record of Decision will not be signed until BLM receives the biological opinion (BO) from USFWS.

The BLM has determined that there are two federally listed species affected by the CDCA Plan in the NECO Planning Area: the desert tortoise (*Gopherus agassizii*) and the Coachella milkvetch (*Astragalus lentiginosus var. coachellae*). The BLM will also consult on the effects on Desert Tortoise critical habitat. In addition, the mountain plover, which is proposed for federal listing as a threatened species, will require a formal conference. This Plan and Final EIS together with a CDCA Plan and various other supporting documents (e.g., *Current Desert Tortoise Management Situation in Northern and Eastern Colorado Desert Planning Area*) will provide the necessary information to conduct the consultation/conference.

The BLM also proposes to obtain a programmatic biological opinion for desert tortoise on projects that may be proposed in the future. Standard mitigation measures are presented for application on these projects to protect desert tortoise and to compensate for residual impacts to its habitat after mitigation. Further formal consultation would not be required for covered projects (a reporting and review process is included). The programmatic biological opinion will also specify an allowable *incidental take* (i.e., incidental to an otherwise legal activity) for the CDCA Plan and for covered projects.



### **7.1.5 Consultation with the State Historic Preservation Officer**

The Bureau of Land Management initiated formal consultation with the State Historic Preservation Office by letter dated May 30, 2000. The BLM initiated consultation in accordance with the Programmatic Memorandum of Agreement Among the Advisory Council on Historic Preservation, the Bureau of Land Management, and the California State Historic Preservation Officer Regarding the California Desert Conservation Area (1980), and the State Protocol Agreement Between The California State Director of The Bureau of Land Management And The California Sate Historic Preservation Officer (1998). Consultation regarding historic properties that might be affected by this plan amendment is ongoing. BLM has rendered findings and determinations regarding the eligibility and effects for historic properties and has requested SHPO concurrence. BLM has proposed to modify the existing CDCA Programmatic Agreement with SHPO to provide for phased implementation of inventory and evaluation of historic properties that might be affected by the designation of routes. BLM will implement the terms and conditions of the Programmatic Agreement as agreed to with SHPO.

### **7.1.6 Consultation with Native Americans**

To comply with Executive Orders regarding Government-to-Government relations with Native Americans, formal and informal contacts were made with a number of tribal councils at several points in the planning process. Advice on the nature and progress of the project was provided, and concerns and ideas to help define and direct the planning process were solicited. The tribal entities contacts are listed in Section 7.2. These entities will continue to be contacted and comments requested at key milestone points as the planning process continues.

### **7.1.7 Other Consultations**

As noted in several of the above paragraphs, a number of agencies and interests have been involved in development of the Plan. As lead agency, BLM has made a concerted effort to coordinate and consult with all agencies and interests, in addition to the three noted just above. Particular among these include local government and BLM's own Desert Advisory Council (Council). The Council developed a set of resolutions on the NECO, NEMO, and Imperial Sand Dunes Recreation Management Plan in December 2001. This set of resolutions and BLM's responses to them are found in Appendix S. Details and names of agencies and groups consulted are included in the next section.

## **7.2 Distribution of the Draft Plan and Draft EIS**

Notice of availability of the Draft Plan/EIS was distributed to the entire mailing list. Copies were also provided to anyone expressing an interest in the planning process. In addition, copies were provided to public libraries throughout the planning area for public review and reference. Copies were also sent to the following agencies, organizations, political entities, and individuals with a request for review.

**Federal Agencies**

Bureau of Land Management

Sacramento State Office  
California Desert District Office  
Palm Springs Field Office  
El Centro Field Office  
Needles Field Office  
Yuma Field Office  
Havasu Field Office

Joshua Tree National Park

U.S. Marine Corps Air Station, Yuma  
(For the Chocolate Mountains Aerial Gunnery Range)

U.S. Fish and Wildlife Service

Carlsbad Field Office  
Ventura Field Office  
Havasu National Wildlife Refuge  
Cibola National Wildlife Refuge  
Imperial National Wildlife Refuge

U.S. Geological Survey

Tucson Field Office  
Box Springs Field Office  
Western Ecological Center

Environmental Protection Agency

San Francisco Office

U.S. Army Corps of Engineers

San Diego Office  
Los Angeles Office

Bureau of Indian Affairs

Southern California Agency  
Colorado River Agency  
Ft. Yuma Agency

Bureau of Reclamation

Yuma Office

U.S. Border Patrol  
El Centro Office  
Yuma Office

Office of Environmental Policy and Compliance  
San Francisco

**California State Agencies**

California Office of Planning and Research (State Clearing House)

California Department of Fish and Game  
Long Beach Office  
Sacramento Office

CalTrans  
San Diego Office  
San Bernardino Office

State Lands Commission  
Sacramento Office  
Long Beach Office

State Department of Parks and Recreation  
Sacramento OHMVR Office  
Anza-Borego State Park  
Picacho State Park

University of California, Riverside

Metropolitan Water District of Southern California

Imperial Irrigation District

Palo Verde Irrigation District

Coachella Valley Water District

**Local Government**

County Boards of Supervisors and Planning Departments  
San Bernardino  
Riverside  
Imperial

City Managers

Needles

Blythe

San Bernardino Association of Governments

Coachella Valley Association of Governments

Imperial Valley Association of Governments

**BLM, California Desert Advisory Council**

(Note: only the current members are listed below. However, past members are on the mailing list.)

Ilene Anderson (Renewable Resources), West Hollywood, CA  
Marilyn Beardslee (Transportation & Rights-of-Way), Bakersfield, CA  
Bill Betterley ((Public-at-Large), Hesperia, CA  
Howard Brown (Non-renewable Resources), Apple Valley, CA  
Dennis Casebier (Public at Large), Essex, CA  
Sheri Davis (Public-at-Large), San Bernardino, CA  
Roy Denner (Recreation), Lakeside, CA  
Bob Ellis (Environmental Protection), Berkeley, CA  
Jeri Ferguson (Recreation) Victorville, CA  
Ron Kemper (Renewable Resources), East Highlands, CA  
Supervisor Wally Leimgruber (Elected Official), El Centro, CA  
Supervisor Jon McQuiston (Elected Official), Bakersfield, CA  
Richard Milanovich (Public-at-Large), Palm Springs, CA  
Randy Rister (Public-at-Large), El Centro, CA  
Paul Smith (Public-at-Large), Twentynine Palms, CA

**Indian Tribal Councils**

Ft. Mojave Indian Reservation, Needles, CA  
Chemehuevi Indian Reservation, Havasu Lake, CA  
Colorado Indian Tribes Reservation, Parker, AZ  
Quechan Indian Reservation, Yuma, AZ  
Torres-Martinez Band of Mission Indians, Thermal, CA  
Twenty-Nine Palms Band of Mission Indians, Palm Springs, CA  
Cabazon Band of Mission Indians, Indio, CA  
Palm Springs Band of Mission Indians, Agua Caliente Reservation, Palm Springs, CA

### **Leads, Adjacent Planning Projects**

West Mojave Plan  
Northern & Eastern Mojave Plan  
Coachella Valley Multi-Species Conservation Plan  
Mojave National Preserve

### **Interest Groups**

#### Desert Tortoise

Roger Dale, Desert Tortoise Preserve Committee  
Al Muth, Desert Tortoise Council

#### Other Wildlife

Dick Conti, Society for Conservation of Bighorn Sheep  
Leon Lesicka, Desert Wildlife Unlimited  
Norm Wuytens, Desert Wildlife Unlimited

#### Plants/Plant Communities

Steve Hartman, California Native Plant Society  
Cameron Barrows, Center for Natural Lands Management

#### Non-motorized Recreation

Joan Taylor, Sierra Club  
Bill Harris, International Mountain Biking Association

#### Motorized Recreation

Mike Ahrens, California Association of Four-Wheel Drive Clubs  
Jeri Ferguson, (same as above)  
Jim Strain, California Federation of Mineralogical Societies  
Ed Waldhiem, California Off-Road Vehicle Association  
Al Guzman, American Motorcycle Association

#### Mining

Craig Smith, Newmont Gold Co.--Mesquite Mine  
Steve Bauman, Glamis Gold, Inc.  
Gary Boyle, Glamis Gold, Inc.

#### Grazing

Juan Guerrero, University of California Cooperative Extension

#### Wild Burros

Fred Burke, Wild Horse & Burro Board (Dept. of the Interior)

Utilities & Infrastructure

Ms Laura Solorio, Southern California Edison  
Bob Filler, Arid Operations, Inc.

Research & Education

Bill Presch, Desert Studies Consortium  
Edie Allen, University of California, Riverside

Land Tenure Adjustment

John Bezzant, Catellus Resources Group  
Shelton Douthit, Riverside Land Conservancy

Agriculture & Business

Marv Shaw, Cadiz Land Co.  
Steve Jones, Desert Center resident

**Congressional Representatives**

**U.S. Senate**

Honorable Diane Feinstein  
Honorable Barbara Boxer

**U.S. House of Representatives**

Honorable Jerry Lewis  
Honorable Mary Bono  
Honorable Duncan Hunter

**California Legislature**

**State Senate**

Honorable William Knight  
Honorable Jim Brutte  
Honorable Donald Kelly

**State Assembly**

Honorable Keith Olbers  
Honorable Brett Granlund  
Honorable Jim Battin

**Libraries**

The document should be found in most public libraries in Southern California.

During the public review period, numerous additional documents were mailed to agencies, interest groups, and individuals not listed above. In addition the DEIS was posted on BLM's web site 15 days after the beginning of the public review period.

### 7.3 Public Comments and Responses

Lists of public meetings, public comments, and responses to comments are found in Appendix S.

### 7.4 List of Preparers

The principal preparers (i.e., writers and geographic information system specialists) of the Draft Plan and EIS were primarily BLM staff from the California Desert District and are listed below. However, additional people are recognized for making significant contributions at some point in the planning process to the collection and analysis of data and the planning process. Apologies are made where the list may not recognize all contributors.

#### **Principal Preparers (name, discipline, office)**

##### Team Lead

Dick Crowe, District Office

##### Environmental Specialist and Writer-Editor for Draft EIS

Genea Kennedy, District Office

##### Writer-Editor for Final Plan and EIS

Ron Pitman, Anteon Corporation

Pete Stephan, Anteon Corporation

Wayne Williams, Anteon Corporation

##### Species and Habitats

Larry Foreman, District Office

##### Livestock Grazing

Larry Morgan, District Office

##### Wild Burros

Alex Neibergs, Ridgecrest Field Office

##### Recreation/Routes of Travel/Wilderness

Jim Foote, Palm Springs Field Office

##### Minerals

Ken Downing, Needles Field Office

##### Realty/Land Tenure Adjustment

Lynda Kastoll, El Centro Field Office

##### Socio-Economic Analysis

Loren Cabe and Dena Saslaw, BLM Denver Service Center

Geographic Information System Support  
Nanette Pratini, University of California at Riverside

Cultural Resources/Native American Values  
Rolla Queen

Photography  
Doran Sanchez, District Office  
Kim Nicol, California Department of Fish and Game  
Randy Rister, Desert Wildlife Unlimited  
Karen Dorweiler, ECO Biologist

**Principal Contributors for Data, Analyses, and Other aspects of Planning Process**

Wildlife/Botany/Plant Communities

Kim Nicol, (plus wildlife team leadership), California Department of Fish and Game  
Todd Keeler-Wolfe, California Department of Fish and Game  
Nancy Andrew, California Department of Fish and Game  
Vern Bleich, California Department of Fish and Game  
Nancy Nicolai, BLM, El Centro Field Office  
Robin Kobally, BLM, Palm Springs Field Office  
Edie Allen, University of California at Riverside  
Nanette Pratini, University of California at Riverside  
Karen Dorweiler, BLM ECO, District Office  
Steve Hartman, California Native Plant Society  
Leon Lesicka, Desert Wildlife Unlimited  
Gerry Mulcahy, California Department of Fish and Game  
Jim Dice, California Department of Fish and Game  
Andy Sanders, University of California, Riverside

Routes of Travel Inventory

Jim Foote, Palm Springs Field Office  
Mark Conley, BLM, Palm Springs Field Office  
Bob Bower, BLM, El Centro Field Office  
Mike Ahrens, California Association of Four-Wheel Drive Clubs

Geology and Minerals

Rob Waiwood, BLM, District Office  
Brenda Hauser, U.S. Geological Society, Tucson Field Station

Science Panel Review

Mike Allen, University of California at Riverside (see Appendix I)



Meetings Facilitation

Tom Scott, University of California at Riverside  
Rebecca Royer, Bureau of Land Management Sacramento

Geographic Information Systems Support

Nanette Pratini, University of California at Riverside  
Pey-Yi Lee, University of California at Riverside  
Tom Zmudka, BLM, District Office

Wild Horses and Burros

Alex Neibergs, BLM, Ridgecrest Field Office  
Dave Sjaastad, BLM, Ridgecrest Field Office  
Roger Olyer, BLM, Yuma Field Office  
Cindy Barnes, BLM, Havasu Field Office

## References

- Akçakaya, H. R. 2000. Conservation and management for multiple species: Integrating field research and modeling into management decisions. *Environmental Management* 26(1): S75-S83.
- Allen, E. B., P.E. Padgett, A. Bytnerowicz, and R.A. Minnich. 1997. Nitrogen deposition effects on coastal sage vegetation in southern California. *Proceedings of the International Symposium on Air Pollution and Climate Change Effects on Forest Ecosystems, Riverside, CA*. A. Bytnerowicz, M.J. Arbaugh, and S. Schilling, tech coords. Vol. Gen. Tech. Rept. PSW-GTR 164. Pacific Southwest Research Station, USDA For. Serv.
- Anderson, D. R., and K. P. Burnham. Undated. *A monitoring program for desert tortoise*. Rept. of Colo. Coop. Fish and Wildl. Res. Unit., Fort Collins, Colo.
- Andrew, N. G., V. C. Bleich, and P. V. August. 1999. Habitat selection by mountain sheep in the Sonoran Desert: implications for conservation in the United States and Mexico. *California Wildlife Bulletin No. 12*. 30pp.
- Andrew, N. G., L. M. Lesicka, and V. C. Bleich. 1997. An improved fence design to protect water sources for native ungulates. *Wildlife Society Bulletin* 25, no. 4: 823-25.
- Andrew, Nancy G. 1994. Demography and habitat use of desert-dwelling mountain sheep in the east Chocolate Mountains, Imperial County, California. ECFO wildlife files.
- Andrews, F. G., A. R. Hardy, and D. Guiliani. 1979. The Coleopterous fauna of selected California sand dunes. Riverside, CA: Bureau of Land Management. BLM Contract Rept. CA-960-1295-DECO. 142pp.
- Archer, S., and F. E. Smeins. 1991. Ecosystem-level processes. *Grazing Management: an Ecological Perspective*. eds. R. K. Heitschmidt, and J. W. Stuth, 109-39. Portland, OR: Timber Press.
- Artz, M. C. 1989. Impacts of linear corridors on perennial vegetation in the East Mojave Desert: implications for environmental management and planning. *Natural Areas Journal* 9:117-29.
- Avery, H. W. 1998. "Nutritional Ecology of the desert tortoise (*Gopherus agassizii*) in relation to cattle grazing in the Mojave Desert." Dissertation, University of California, Los Angeles.
- Avery, H. W., and A. G. Neibergs. 1997. Effects of cattle grazing on the desert tortoise, *Gopherus agassizii*: nutritional and behavioral interactions. *Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles--An International Conference*, 13-20.
- Avery, H. W. 1996. Effects of livestock grazing on vegetation, soil, and wildlife in the deserts of North America: a review of literature with emphasis and application to the Mojave Desert. Draft rept. of Natl. Biol. Survey. 90pp.
- Axelrod, Daniel I. 1978. Fossil Floras of the California Desert Conservation Area. Unpublished manuscript.

- Axelrod, D. I. 1995. Age and origin of Sonoran Desert vegetation. *Occ. Papers of the Calif. Acad. of Sciences* No. 132: 74pp.
- Bainbridge, D. A., and R.A. Virginia. 1990. Restoration in the Sonoran desert of California. *Restoration and Management Notes* 8, no. (1): 3-14.
- Barry, W. J. and E. I. Schlinger. 1977. *Inglenuok Fen: A Study and Plan*. Sacramento, California, California Department of Parks and Recreation. 87-91.
- Bartolome, J. W., M. C. Stroud, and H. F. Heady. 1980. Influence of natural mulch on forage production on differing California annual range sites. *Journal of Range Management* 33:4-8.
- Baxter, R. J. 1988. Spatial distribution of desert tortoises (*Gopherus agassizii*) at Twentynine Palms, California: implications of relocations. *Proc. Symposium on Management of Amphibians, Reptiles, and Small Mammals in North America*, pp. 180-189. Flagstaff, Ariz.
- Bedward, Michael Robert L. Pressey, and David A. Keith. 1992. A new approach for selecting fully representative reserve networks: addressing efficiency, reserve design and land suitability with an iterative analysis. *Biological Conservation* 62: 115-25.
- Bell, G. P. 1997. Ecology and management of *Arundo donax*, and approaches to riparian habitat restoration in southern California. In *Plant Invasions: Studies from North America and Europe*, eds. J.H. Brock, M.Wade, P. Pysek and D. Green. Leiden, The Netherlands: Blackhuys Publishers.
- Belnap, J., K. T. Harper, and S. D. Warren. 1998. Surface disturbance of cryptobiotic soil crusts: nitrogenase activity, chlorophyll content, and chlorophyll degradation. *Arid Soil and Rehabilitation* 8:1-8.
- Belnap, J., and J. S. Gardner. 1993. Soil microstructure in soils of the Colorado Plateau: the role of the cyanobacterium *Microcoleus vaginatus*. *Great Basin Naturalist* 53:40-47.
- Berbach, M. W. 1987. "The behavior, nutrition, and ecology of a population of reintroduced desert mountain sheep in the Whipple Mountains, San Bernardino county, California." MS thesis to Calif. State Polytechnic Univ., Pomona. 135pp.
- Berry, K.H. 19XX. The status of desert tortoise populations in the western Mojave desert. Unpublished Report to Tortoise-Sheep Technical Review Team, Bureau of Land Management. 19 pp.
- Berry, K. H. 1997. Demographic consequences of disease in two desert tortoise populations in California, USA. *Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles--An International Conference*, (ed.) J. Van Abbema. New York: WCS Turtle Recovery Program and the New York Turtle and Tortoise Society.
- Berry, K. H. 1996. The effects of off-road vehicles on animal populations and habitats: a review of the literature. Draft Rept. of Natl. Biol. Service. 104pp + Appendices.

- Berry, K.H. 1988. Disease. Unpublished Report.
- Berry, K H. 1986. *Incidence of gunshot deaths in desert tortoise (Gopherus agassizii) populations in California*. Wildlife Society Bulletin 14: 127-32.
- Berry, K. H, and F. B. Turner. 1986. Spring activities and habitats of juvenile desert tortoises, *Gopherus agassizii*, in California. *Copeia* 1010-1012.
- Berry, Kristin H., and Lori L. Nicholson. 1984. The distribution and density of desert tortoise populations in California in the 1970's. In *The Status of the Desert Tortoise (Gopherus agassizii) in the United States*, ed. Kristin H. Berry, U.S. Fish and Wildlife Service. Vol. Order No. 11310-0083-81.
- Blachley, John. Chief Law Enforcement Ranger, Palm Springs-South Coast Field Office, Bureau of Land Management. Personal Communication. April 1, 2002.
- Bischoff, Matt. 2000. *The Desert Training Center / California-Arizona Maneuver Area, 1942-1944: Historical and Archaeological Contexts*. Technical Series 75. Tucson, AZ: Statistical Research, Inc.
- Bleich, V. C. 1993. "Sexual segregation in desert-dwelling mountain sheep." PhD. Thesis, University of Alaska.
- Bleich, V. C., J. D. Wehausen, and S. A. Holl. 1990. Desert-dwelling mountain sheep: conservation implications of a naturally fragmented distribution. *Conservation Biology* 4, no. 4: 383-90.
- Bleich, V. C., J. D. Wehausen, K. R. Jones, and R. A. Weaver. 1990a. Status of bighorn sheep in California, 1989, and translocations from 1971 through 1989. *Desert Bighorn Council Transactions* 34: 24-26.
- Blydenstein, J., C. R. Hungerford, G. I. Day, and R. R. Humphrey. 1957. Effect of domestic livestock exclusion on vegetation in the Sonoran Desert. *Ecology* 38, no. (3): 522-26.
- Boarman, W. I. 1999. Threats to the desert tortoise: a critical review of the "scientific" literature. Review Draft. Rept of U.S. Geological Survey.
- Boarman, W. I., and M. Sazaki. 1996. Highway mortality in desert tortoises and small vertebrates: success of barrier fences and culverts. In *Transportation and wildlife: reducing wildlife mortality and improving wildlife passageways across transportation corridors*. Eds. G. Evink, D. Zeigler, P. Garrett, and J. Berry, pp. 169-173. Washington, DC: U. S. Dept. of Trans., Fed. Highway Admin.
- Boarman, W. I. (filed), and K. H. Berry. 1995. Common ravens in the southwestern United States, 1968-92. eds. E. T. LaRoe, G. S. Farris, C. E. Puckett, P. D. Doran, and M. J. Mac. *Our Living Resources*. U.S. Biological Service, pp. 530.
- Boarman, W. I., and K. H. Berry. 1995. Common ravens in the southwestern U.S. *Our Living Resources: a Report to the Nation on the Distribution, Abundance, and Health of U.S. Plants, Animals, and Ecosystems*, pp. 73-75. Washington, D.C.: National Biological Service.

- Boarman, W. I. 1995. *Effectiveness of fences and culverts for protecting desert tortoises along California state highway 58, 1991-1994*. Natl. Biol. Survey Rept. 37pp + Appendices.
- Bodie, W. L., and W. O. Hickey. 1980. Response of wintering bighorn sheep to a rest-rotation grazing system in central Idaho. *Proc. No. Amer. Wild Sheep and Goat Council* 2: 60-69.
- Brooks, M. L. 1998. "Ecology of a Biological Invasion: Alien Annual Plants in the Mojave Desert." Ph.D. dissertation, University of California, Riverside.
- Brotherson, J. D., S. R. Rushforth, and J. R. Johansen. 1983. Effects of long-term grazing on cryptogamic crust cover in Navajo National Monument, Arizona. *Journal of Range Management* 36, no. (5): 579-81.
- Brown, David E., and Richard A. Minnich. 1986. Fire and changes in creosote bush scrub of the western Sonoran Desert, California. *American Midland Naturalist* 116, no. 2: 411-22.
- Brown, Pat. Brown and Berry Consulting. Personal Communication. March 1999.
- Bureau of Land Management. 1998. State protocol agreement between the California State Director of The Bureau of Land Management And The California State Historic Preservation Officer.
- Bureau of Land Management. 1997. 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 the BLM will meet its responsibilities under the National Historic Preservation Act (1997).
- Bureau of Land Management. 1997. *Rangeland Health Standard and Guidelines for California and Northwestern Nevada Draft Environmental Impact Statement*. BLM/CA/ES-97/007+4100.
- Bureau of Land Management. 1995. *Mountain sheep ecosystem management strategy in the 11 western states and Alaska*, BLM/SC/PL-95/001.
- Bureau of Land Management. 1992. *California Statewide Desert Tortoise Management Policy*.
- Bureau of Land Management. 1988. *Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan*.
- Bureau of Land Management. 1980. Programmatic memorandum of agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management (DOI), and the California State Historic Preservation Officer regarding the California Desert Conservation Area.
- Bureau of Land Management. 1980. *The California Desert Conservation Area Plan*.
- Bureau of Land Management. 1980. Memorandum of Agreement pertaining to Bureau of Land Management, California Desert Conservation Area, Policy for Coordinating Native American

- Reservation Tribal review of environmental impact documentation among the State of California Native American Heritage Commission (NAHC) and Bureau of Land Management.
- Burge, B. L. 1983. Impact of Frontier 500 off-road vehicle race on desert tortoise habitat. *Proc. Desert Tortoise Council Symp.* 1983:27-38.
- Burge, B. L. 1978. Physical characteristics and patterns of utilization of cover sites used by *Gopherus agassizii* in southern Nevada. *Proc. Desert Tortoise Council Symp.* 1978:132-140.
- Burkhardt, J. W., and D. Chamberlain. 1982. Range cattle food habitats of the Mojave Desert. Rept. for Proj. 617 to Nev. Agric. Exper. Stn. 8pp.
- Busack, S.D., and R.B. Bury. 1974. Some effects of off-road vehicles and sheep grazing on lizard populations in the Mojave Desert. *Biological Conservation* 6:179-183.
- California Department of Fish and Game. 1983. *A plan for bighorn sheep in California.* CDFG Rept. 11pp.
- California Department of Parks and Recreation. 1998. *Public Opinions and Attitudes on Outdoor Recreation in California 1997: An Element of the California Outdoor Recreation Planning Program.*
- California Department of Parks and Recreation. 1996. *Trail Strategy: California Back Country Discovery Trails, An Element of the California Statewide Motorized Trail System.*
- California Native Plant Society. 2001. *California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California.* 6th ed. Sacramento, CA: California Native Plant Society.
- California Native Plant Society. 1994. *California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California.* 5th ed. Eds. Mark W. Skinner and Bruce M. Pavlik. 336pp. Sacramento, CA: California Native Plant Society.
- Carpelan, L. H. 1995. Invertebrates of the California Desert. *The California Desert: an Introduction to Natural Resources and Man's Impact*, Vol. 1. (eds.) J. Latting, and P.G. Rowlings. Riverside, CA: June Latting Books.
- Casebier, Dennis G. 1978. *Quotations from Original Sources Pertaining to the California Desert Regions, 1855-1893.* Riverside, CA: Bureau of Land Management.
- CIC Research, Inc. Contractors for surveys and studies contained in *Public Opinions and Attitudes on Outdoor Recreation in California 1997: An Element of the California Outdoor Recreation Planning Program.* California Department of Parks and Recreation, 1998.
- Circle Mountain Biological Consultants. 1996. Federal Biological Opinion Analysis for the Proposed Eagle Mountain Landfill Project. Contract Rept., Wrightwood, Calif. 11pp + Appendices.

- Clark, R. K., D.A. Jessup, M.D. Kock, and R.A. Weaver. 1985. Survey of desert bighorn sheep in California for exposure to selected infectious diseases. *J. of the Am. Vet. Med. Assoc.* 187: 1175-79.
- Cleary, E. 1997. Selective exclusion fencing in wild burro and bighorn sheep management. *Desert Bighorn Council Trans.* 17: 106-9.
- Congalton, Russell G. 1991. A review of assessing the accuracy of remotely sensed data. *Remote Sens. Environ.* 37, no. 1: 35-46.
- Cook, C. W., and R. D. Child. 1971. Recovery of desert plants in various states of vigor. *Journal of Range Management* 22:339-343.
- Coombs, E. M. 1979. Food habits and livestock competition with the desert tortoise on the Beaver Dam Slope, Utah. *Proceedings of the Desert Tortoise Council Symposium* 1979:132-147.
- Cothran, E. G. 2000. Genetic Variation in Horse Populations. Denver, CO: Bureau of Land Management, National Science and Technology Center. <http://www.blm.gov/nstc/resourcenotes/resnotes.html>. Resource Note 27, July 20, 2000. 2pp.
- Crabtree, Robert H., Elizabeth von Till Warren, Martha Knack, and Richard McCarthy. 1980. A Cultural Resource Overview of the Colorado Desert, Southeastern California. Draft Report. Riverside, CA: Bureau of Land Management.
- Crowe, Richard E, and L .D. Foreman. 1997. *Current Desert Tortoise Management Situation in Northern and Eastern Colorado Desert Planning Area.* 110pp. + Appendices. Riverside, CA: Bureau of Land Management.
- Cunningham, S. C, and R.D. Ohmart. 1986. Aspects of the ecology of desert bighorn sheep in Carizzo Canyon, California. *Desert Bighorn Council Trans.* 30: 14-19.
- Cutler, T. L., and M.L. Morrison. 1998. Habitat use by small vertebrates at two water developments in southwestern Arizona. *The Southwestern Naturalist* 43, no. (2): 155-62.
- Davidson, E., and H. Fox. 1974. Effects of Off-road Mortorcycle Activity on Mojave Desert Vegetation and Soil. *Madroño* 22(8): 381-412.
- Davis, Emma L., Kathryn H. Brown, and Jacqueline Nichols. 1980. *Evaluation of Early Human Activities and Remains in the California Desert.* San Diego, CA: Great Basin Foundation.
- de Gouvenain, R. C. 1996. Origin, history and current range of saltcedar in the U.S. p, 1-3 in *Proceedings of the Saltcedar Management Workshop, June 1996, Rancho Mirage, California.* UCCE, California Exotic Pest Plant Council.
- Dimmitt, M. A., and R. Ruibal. 1980. Environmental correlates of emergence in spadefoot toads (*Scaphiopus*). *Journ. of Herpetology* 14(1):21-29.

- Dimmitt, M. A. 1977. *Distribution of Couch's spadefoot toad in California (preliminary report)*. BLM Report, 6 pp. Riverside, CA: Bureau of Land Management.
- Dodd, N. L., and W. W. Brady. 1986. Cattle grazing influences on vegetation of a sympatric desert bighorn range in Arizona. *Desert Bighorn Council Trans.* 30: 8-13.
- Douglas, C. L., and C. Norment. 1977. Habitat damage by feral burros in Death Valley. *Desert Bighorn Council Trans.* 21: 23-25.
- Duck, T. 1978. The Effects of Off-road Vehicles on Vegetation in Dove Springs Canyon, in Berry, K. H. (ed.), *The physical, biological, and social impacts of off-road vehicles on the California desert*. So. Calif. Acad. Scis., Spec Publ., in press.
- Dueller, L. C., and R. F. Noss. 1990. A computerized method of priority ranking for natural areas. *Ecosystem Management: Rare Species and Significant Habitats. Proceedings of the 15th Annual Natural Areas Conference.* (eds.) R. S. Mitchell, C. J. Sheiak, and D. J. Leopold, 22-33. New York: New York State Museum, Bull. No. 471.
- Dunn, W. C., and C. L. Douglas. 1982. Interactions between desert bighorn sheep and feral burros at spring areas in Death Valley. *Desert Bighorn Council Trans.* 26: 87-96.
- Durfee, J. A. 1988. "Response of Mohave Desert communities to release from grazing pressure." MS Thesis, Brigham Young University, Provo, Utah.
- Eastvold, Isaac. 1974. *Petroglyph Site Description and Protective Strategies*. Riverside, CA: Bureau of Land Management.
- Eckert, R. E. Jr., F. F. Peterson, M. K. Wood, and W. H. Blackburn. 1977. Properties, Occurrence, and Management of Soils with Vesicular Surface Horizons. Final report, BLM Contract 52500-CT5(N), Nevada Agricultural Experiment Station. 1-116.
- Elliot, N. 1959. Effects of wild burros on range conditions. *Desert Bighorn Council Trans.* 3: 9-10.
- England, A. S., L. E. Foreman, and W. F. Laudenslayer. 1984. Composition and abundance of bird populations in riparian habitats of the California deserts. *California Riparian Systems: Ecology, Conservation, and Productive Management.* (eds.) R. E. Warner, and K. M. Hendrix, 694-705. Berkeley, CA: Univ. of Calif. Press.
- Environmental Protection Agency. 1996. *Breathing Easier: a Report on Air Quality in EPA Region 9*.
- Esque, T. C. 1994. "Diet and diet selection of the desert tortoise (*Gopherus agassizii*) in the northeast Mojave Desert." MS Thesis, Colorado State University, Fort Collins.
- Federal Register*, February 22, 1995. Part II, Department of the Interior, Office of the Secretary, Bureau of Land Management, 43 CFR Parts 4, 1780, and 4100, pp. 9894-9971.



- Fusco, M., J. Holechek, A. Tembo, A. Daniel, M. Cardenas. 1995. Grazing influences on watering point vegetation in the Chihuahuan desert. *Journal of Range Management* 48:32-38.
- Gallegos, Dennis, John Cook, Emma L. Davis, Gary Lowe, Frank Norris, and Jay Thesken. 1979. *Cultural Resources Inventory of the Central Mojave and Colorado Desert Regions, California*. Riverside, CA: Bureau of Land Management.
- Ganskopp, D., and M. Vavra. 1987. Slope use by cattle, feral horses, and bighorn sheep. *Northwest Science* 61, no. 2: 74-81.
- Ganskopp, D. 1983. "Habitat use and spatial interactions of cattle, wild horses, mule deer, and California bighorn sheep in the Owyhee Breaks of southeast Oregon." Ph. D. Dissertation, Oregon State Univ.
- Garland, T. J., and W. G. Brady. 1984. Effects of a highway on Mojave Desert rodent populations. *American Midland Naturalist* 111: 47-56.
- Germano, D. J. and D. N. Lawhead. 1986. Species diversity and habitat complexity: does vegetation organize vertebrate communities in the Great Basin? *Great Basin Naturalist* 46:711-720.
- Germano, D. J. and C.R. Hungerford. 1981. Reptile population changes with manipulation of Sonoran desert shrub. *Great Basin Naturalist* 41:129-138.
- Gillette, D. A., J. Adams, A. Endo, and D. Smith. 1979. Threshold friction velocities on typical Mojave Desert soils, undisturbed and disturbed by off-road vehicles. *Proceedings of the Annual Fine Particle Society Meeting, Powder and Bulk Solids Conference*. Philadelphia, PA. 1-15.
- Ginnett, T. F., and C. L. Douglas. 1982. Food habits of feral burros and desert bighorn sheep in Death Valley National Monument. *Desert Bighorn Council Trans.* 26: 81-87.
- Godfry, P. J., S. P. Leatherman, and P. A. Buckley. 1978. Impact of off-road vehicles on coastal ecosystems. San Francisco, California. *Proceedings of the Symposium on Technical, Environmental, Socioeconomic, and Regulatory Aspects of Coastal Zone Planning and Management*. 581-600.
- Goodlett, G. O., and G. C. Goodlett. 1993. Studies of unauthorized off-highway vehicle activity in the Rand Mountains and Fremont Valley, Kern County. *Proc. Desert Tortoise Council Symp.* 1993:163-187.
- Halford, F. Kirk. 1999. *A Research Design for the Bishop Field Office Grazing Allotment Lease Renewal Assessments Cultural Resource Project*. CA-170-99-04. Bishop, CA: Bureau of Land Management.
- Hall, J. A. 1980. Direct impacts of off-road vehicles on vegetation. In *Effects of disturbance on desert soils, vegetation, and community processes with emphasis on off-road vehicles: a critical review*. Ed. P. G. Rowlands. Chapter 3, 74 pp. BLM Report. Riverside, CA: Bureau of Land Management.
- Hanley, T. A., and W. W. Brady. 1977. Feral burro impact on a Sonoran Desert range. *Journal of Range Management* 30, no. (5): 374-77.

- Heath, Rebecca Piirto. 1997. You Can Buy a Thrill. *American Demographics* 19 (6): 47-51.
- Heske, E. J., and M. Campbell. 1991. Effects of an 11-year livestock enclosure on rodent and ant numbers in the Chihuahuan desert, southeastern Arizona. *Southwestern Naturalist* 39, no. (1): 89-93.
- Holechek, J. L., R. D. Pieper, and C. H. Herbel. 1998. *Range Management: Principles and Practices*. Third Edition. Upper Saddle River, NJ: Prentice-Hall.
- Holechek, J. L. 1991. Chihuahuan desert rangeland, livestock grazing and sustainability. *Rangelands* 13:115-120.
- Holland, Robert F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Sacramento, CA: The Resources Agency, Calif. Dept. of Fish and Game.
- Homer, B. L., K. H. Berry, and E. R. Jacobsen. 1996. Necropsies of eighteen desert tortoises from the Mojave and Colorado deserts of California. Natl. Biol. Survey Research Work Order No. 131 .
- Homer, B. L., K. H. Berry, M. M. Christopher, M. B. Brown, and E. R. Jacobsen. 1994. *Necropsies of desert tortoises from the California deserts and elsewhere in the Southwest*. BLM Contract Rept. No. B950-C1-0062. Sacramento, CA: Bureau of Land Management.
- Hooper, J. F., and H. F. Heady. 1970. An economic analysis of optimum rates of grazing in the California annual type ranges. *Journal of Range Management* 23:307-311.
- Horne, Stephen, and Janine McFarland. 1993. *Impacts of Livestock Grazing on Cultural Resources*. Santa Barbara, CA: Los Padres National Forest, National Forest Service.
- Hutchings, S.S., and G. Stewart. 1953. *Increasing forage yields and sheep production on intermountain winter ranges*. U.S. Dep. Agric. Circ. 925.
- Jacobsen, E. R. 1993. *The desert tortoise and upper respiratory tract disease*. Brochure prepared for Desert Tortoise Preserve Committee, Inc. and BLM.
- Jacobsen, E. R., T. J. Wronski, J. Schumacher, C. Reggiardo, and K. H. Berry. 1994. Cutaneous dyskeratosis in free-ranging desert tortoise (*Gopherus agassizii*) in Las Vegas Valley, Nevada. *Chelonian Conservation and Biology* 1, no. (4): 279-84.
- Jennings, W. B. 1997. Habitat use and food preferences of the desert tortoise, *Gopherus agassizii*, in the western Mojave Desert and impacts of off-road vehicles. *Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles--An International Conference*, 42-45.
- Jennings, W. B. 1993. "Foraging ecology of the desert tortoise (*Gopherus agassizii*) in the western Mojave Desert." MS thesis, University of Texas, Arlington. 101pp.

- Jennings, W. B. 1991. Desert tortoise carcass surveys along State Highway 58 and 395, San Bernardino, CA. Santa Barbara: Univ. of Calif. 5pp.
- Jessup, D. A. 1985. Diseases of domestic livestock which threaten bighorn sheep populations. *Desert Bighorn Council Trans.* 29: 29-33.
- Johnson, H. B., F. B. Vasek, and T. Yonkers. 1975. Productivity, diversity, and stability relationships in Mojave desert roadside vegetation. *Bull. Torrey Botanical Club* 102, no. (3): 106-15.
- Jorgensen, P. 1974. Vehicle use in a desert bighorn watering area. *Desert Bighorn Council Trans.* 18: 18-24.
- Kareiva, P., S. Andelman, D. Doak, B. Eldred, M. Groom, J. Hoekstra, L. Hood, F. James, J. Lamoreux, G. LeBuhm, C. McCulloch, J. Regetz, L. Savage, M. Ruckelshous, D. Skelly, H. Wilbur, K. Zamudio and NCEAS HCP working group. 1999. Using science in habitat conservation plans. National Center for Ecological Analysis and Synthesis workshop. <http://ww2.nceas.ucsb.edu>
- Kerpez, T.A. and N. S. Smith. 1987. *Saltcedar control for wildlife habitat improvement in the southwestern United States*. USDI Fish and Wildlife Service Res. Pub. 169, Washington, D.C.
- Kindschy, R. R. 1996. Fences, waterholes, and other range improvements. *Rangeland Wildlife*. (eds.) R. R. Krausman, L.M. Fox, and P. Smith. Denver, CO: The Society for Range Management.
- King, Chester and Dennis G. Casebier. 1976. *Background to Historic and Prehistoric Resources of the East Mojave Region*. Riverside, CA: Bureau of Land Management.
- King, M. M., and G. W. Workman. 1984. Cattle grazing in desert bighorn sheep habitat. *Desert Bighorn Council Trans.* 28: 18-22.
- Kleiner, E. F., and K. T. Harper. 1977. Soil properties in relation to cryptogamic groundcover in Canyonlands National Park. *Journal of Range Management* 30: 202-5.
- Knauf, C. R. 2002. *Preliminary report--A comparative analysis of Colorado Desert fringe-toed lizard (Uma notata) populations in OHV open and closed areas of the Algodones Dunes, Imperial County, CA*. BLM Report, 2pp. El Centro, CA: Bureau of Land Management.
- Knight, R. H., Knight, and R. Camp. 1993. Raven populations and land-use patterns in the Mojave Desert, California. *Wildlife Society Bulletin* 21: 469-71.
- Kornet, C. A. 1978. "Status and habitat use of California bighorn sheep on Hart Mountain, Oregon." M.S. Thesis, Oregon State Univ.
- Kubly, D. M., and G. A. Cole. 1979. *Limnologic studies on the desert playas of southern California*. Riverside, CA: BLM Contract Rept. CA-060-CT8-10, 129pp.

- LaRue, E. L., Jr. Distribution of desert tortoise sign adjacent to Highway 395, San Bernardino Co., Calif. *Proceedings of 1992 Desert Tortoise Council Symposium*, 190-204.
- Latting, June, and Peter J. Rowlands, (eds.). 1995. *The California Desert: an Introduction to Natural Resources and Man's Impact*. 2 volumes. Riverside, CA: June Latting Books.
- Laycock, W.A., and P.W. Conrad. 1981. Response of vegetation and cattle to various systems of grazing on seeded and native mountain rangelands in eastern Utah. *Journal of Range Management* 34:52-58.
- Lesicka, L. M., and J. J. Hervert. 1994. Low maintenance water development for arid environments: concepts, materials, and techniques. D. P. Young, R. Vinzant, and M. D. Strictland, eds. *Proceedings of the Wildlife Water Development Symposium* 2:52-57.
- Lovich, J. E., and D. Bainbridge. 1999. Anthropogenic degradation of the southern California desert ecosystem and prospects for natural recovery and restoration. *Environmental Management* 24, no. (3): 309-26.
- Lyneis, Margaret M., David L. Weide and Elizabeth Warren. 1980. *Impacts: Damage to Cultural Resources in the California Desert*. Riverside, CA: Bureau of Land Management.
- Malo, J. E., and F. Suarez. 1995. Cattle dung and the fate of *Biserrulapelecinus* L. in a Mediterranean pasture: seed dispersal, germination and recruitment. *Botanical Journal of the Linnean Society* 118: 139-48.
- Marks, J. S., and A. R. Sands. 1988. *An annotated bibliography on the influence of cattle, burros, and human disturbance on bighorn sheep*. Idaho BLM Tech. Bull. 88-1, 37pp.
- Martin, S.C., and D.R. Cable. 1974. *Managing semidesert grass-shrub ranges: vegetation responses to precipitation, grazing, soil texture, and mesquite control*. U.S. Department of Agriculture Technical Bulletin 1480.
- McCarty, Craig W., and James A. Bailey. 1994. *Habitat requirements of desert bighorn sheep*. Colorado Division of Wildlife Special Report, no. 69: I-IV, 1-27.
- McCollough, S. A., A. Y. Cooperrider, and J. A. Bailey. 1980. Impact of cattle grazing on bighorn sheep habitat at Trickle Mountain, Colorado. *Proc. No. Amer. Wild Sheep and Goat Council* 2: 42-59.
- McMichael, T. J. 1964. "Studies of the relationship between desert bighorn and feral burros in the Black Mountains of northwestern Arizona." M.S. Thesis, Univ. of Arizona.
- McQuivey, R. P. 1978. *The desert bighorn sheep of Nevada*. Nevada Dept. of Wildlife Biol. Bull. No. 6. 81pp.

- Medica, P. A., C. L. Lyons, F. B. Turner. 1982. A comparison of 1981 populations of desert tortoises (*Gopherus agassizii*) in grazed and ungrazed areas in Ivanpah Valley, California. *Proceedings of the Desert Tortoise Council 1982 Symposium*.
- Morafka, D. J., K. H. Berry, and E. K. Spangenberg. 1996. Predator-proof field enclosures for enhancing hatching success and survivorship of juvenile tortoises: a critical evaluation. *In: J. Van Abbema (Ed.), Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles--an International Conference*. WCS Turtle Recovery Program and the New York Turtle and Tortoise Society, New York.
- Murphy, M.A. 1978. California Desert Conservation Area Invertebrate Paleontological Resources Study. Prepared for Bureau of Land Management. Riverside, CA. University of California, Riverside.
- Nagy, K. A., and P. A. Medica. 1986. Physiological ecology of desert tortoises in southern Nevada. *Herpetologica* 42(1):73-92.
- National Research Council. 1994. *Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands*. Washington, DC: National Academy Press.
- Neill, W. M. 1985. Tamarisk. *Fremontia* 12:22-23.
- Nelson, A. O. 1993. Cow-Calf Operations on Rangeland: Sample Costs and Income--1993, Fresno and Madera County. Fresno, CA: University of California Cooperative Extension.
- Nicholson, L. 1978. The effects of roads on desert tortoise populations. *Proc. Symp. Desert Tortoise Council 1978*: 127-29.
- Niedorada, A. 1975. The geomorphological effects of off-road vehicles on coastal systems of Cape Cod, Massachusetts. University of Massachusetts, National Park Service Cooperative Research Unit, Contract Report DiNPS-CS 1600-5-0001, no. 17. 1-100.
- Nielson, Axel E. 1991. Trampling the Archaeological Record: An Experimental Study. *American Antiquity* 56(3)(1991):483-503.
- Outdoor Recreation Coalition of America. 1996. *Cited in Public Opinions and Attitudes on Outdoor Recreation in California 1997: An Element of the California Outdoor Recreation Planning Program*. California Department of Parks and Recreation, 1998: p. 69.
- Paulsen, H.A., Jr., and F. N. Ares. 1961. Trends in carrying capacity and vegetation on an arid southwestern range. *Journal of Range Management* 14:78-83.
- Pechanec, J. F., and G. Stewart. 1949. *Grazing spring-fall sheep ranges in southern Idaho*. U.S. Department of Agriculture Circular 808.
- Pickford, G. D., and E. H. Reid. 1948. *Forage utilization on summer cattle ranges in eastern Oregon*. U.S. Department Agriculture, Circular 796.

- Pieper, R. D. 1970. *Species utilization and botanical composition of cattle diets on piñon-juniper grassland*. New Mexico Agricultural Experiment Station Bulletin 566.
- Powell, J. A. 1978. *Survey of Lepidoptera inhabiting three dude systems in the California Desert*. BLM Contract Rept. CA-060-CT7-2827, Riverside, CA. 18pp.
- Resource Protection Institute. 1999. *The California Back Country Discovery Trail Description: The California Desert District*.
- Roney, John. 1977. Livesotck and Lithics: The Effects of Trampling. On file at the Winnemucca District Office, Bureau of Land Management, Winnemucca, Nevada.
- Rosiere, R. 1987. An evaluation of grazing intensity influences on California annual range. *Journal of Range Management* 40:160-165.
- Rowlands, P. G. 1995. Vegetational attributes of the California Desert Conservation Area. *The California Desert: an Introduction to Natural Resources and Man's Impact*, Vol. 1. (eds.) J. Latting and P. G. Rowling, pp. 135-83. Riverside, CA: June Latting Books.
- Rowlands, P. G. 1980. Soil Crusts. In *Effects of disturbance on desert soils, vegetation, and community processes with emphasis on off-road vehicles: a critical review*. Ed. P. G. Rowlands. Chapter 2, 62pp. BLM Report. Riverside, CA: Bureau of Land Management.
- Runyan, D. Assoc. 1998. Northern and Eastern Mojave Planning Area: Economic Impact Analysis. Northern and Eastern Mojave Planning Team, National Park Service. Contract # 1443CX2000-95-006, Task Order # 18.
- Schlesinger, W. H., and C. S. Jones. 1984. The comparative importance of overland runoff and mean annual rainfall to shrub communities of the Mojave Desert. *Botanical Gazette* 145: 116-24.
- Schor, Juliet. 1989. Cited in *Public Opinions and Attitudes on Outdoor Recreation in California 1997: An Element of the California Outdoor Recreation Planning Program*. California Department of Parks and Recreation, 1998: p. 69.
- Schwartz, O. A., V. C. Bleich, and S. A. Holl. 1986. Genetics and the conservation of mountain sheep *Ovis canadensis nelsoni*. *Biological Conservation* 37: 179-90.
- Scott, Thomas A., and James Sullivan. 2000. The selection and design of multiple species habitat preserves. *Environmental Management* 26 (suppl.): S37-53.
- Seegmiller, R. F., and R. D. Ohmart. 1981. *Ecological relationships of feral burros and desert bighorn sheep*. Wildlife Monographs No. 78: 58pp.
- Sheppard, G. P. 1981. Desert tortoise populations of the Beaver Dam Slope in northwestern Arizona. *Proceedings of the Desert Tortoise Council 1981 Symposium*.

- Shreve, F., and I. L. Wiggins. 1964. *Vegetation and Flora of the Sonoran Desert*. Stanford, CA: Stanford University Press.
- Shumway, Gary L., Lary Vredenburg, and Russell Hartill. 1980. *Desert Fever: An Overview of Mining in the California Desert Conservation Area*. Riverside, CA: Bureau of Land Management.
- Singer, F. J. and Zeigenfuss, L. 2000. Genetic effective population size in the Pryor Mountain Wild Horse Herd: implication for conservation genetics and viability goals in wild horses. Denver, CO: Bureau of Land Management, National Science and Technology Center.  
<http://www.blm.gov/nstc/resourcenotes/resnotes.html>. Resource Note 29, July 26, 2000. 2pp.
- Skovlin, J. R., R. W. Harris, G. S. Strickler, and G. A. Garrison. 1976. *Effects of cattle grazing methods on ponderosa pine-bunchgrass range in the Pacific northwest*. U.S. Department Agriculture Technical Bulletin 1531.
- Snyder, C. T., D. G. Frickel, R. F. Hadley, and R. F. Miller. 1976. *Effects of off-road vehicle use on the hydrology and landscape of arid environments in central and southern California*. U.S. Geological Survey, Water Resources Investigations. 76-99.
- Spangenberg, E. K. 1996. "Field enclosures: their utility in life history studies and conservation of juveniles of the desert tortoise (*Gopherus agassizii*)." M.A. Thesis, Calif. St. Univ. Dominguez Hills. 96pp.
- Spellerberg, I. F., and T. Morrison. 1998. The ecological effects of new roads--a literature review. *Science for Conservation* 84. Wellington, New Zealand: Dept. of Conservation. 55pp.
- Torres, S. G., Vernon C. Bleich, and John D. Wehausen. 1995. Status of bighorn sheep in California, 1995. *Desert Bighorn Council Trans.* 40: 27-34.
- Torres, Steven G., Vernon C. Bleich, and John D. Wehausen. 1994. Status of bighorn sheep in California, 1993. *Desert Bighorn Council Transactions* 38: 17-28.
- Tracy, C. R. Undated. Workshop on estimating size of desert tortoise populations (WESDTP). Rept. on workshop held in 1996.
- Tracy, C. R., P. F. Brussard, T. Esque, L. Defalco, K. Dean-Bradley, K. T. Castle, C. C. Peterson, B. Henen, and C. R. Tracy. 1995. Requirements of the threatened desert tortoise: Competition with domestic cattle. *Bull. Of the Ecol. Soc. Of Amer.*, Supplement 76:395.
- Trail Strategy: California Back Country Discovery Trails, An Element of the California Statewide Motorized Trail System*. State of California, Off-Highway Motor Vehicle Recreation Division, September 1996.
- Trombulak, S. C., and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology* 14(1):18-30.

- Turner, F. B., and K. H. Berry. 1984. Methods used in analyzing desert tortoise populations. In Berry, K. H. 1984. The status of the desert tortoise (*Gopherus agassizii*) in the United States. Contract Rept. No. 11310-008-0083-81 to USFWS.
- U.S. Army Corps of Engineers. 1990. Impacts of Domestic Livestock Grazing on Archaeological Resources. *Archaeological Sites Protection and Preservation Notebook, Technical Notes I-15*. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station, Vicksburg.
- U.S. Fish and Wildlife Service. 1994. *Desert tortoise (Mojave population) recovery plan*. Portland, OR: USFWS Rept., 73pp + Appendices.
- U.S. Marine Corps. 1995. *Yuma Training Range Complex draft environmental impact statement*. Yuma, AZ: Marine Corps Air Station.
- Valentine, K. A. 1970. *Influence of grazing intensity on improvement of deteriorated black grama range*. New Mexico Agricultural Experiment Station Bulletin 553.
- Vasek, F. C., H. B. Johnson, and D. H. Eslinger. 1975. Effects of pipeline construction on creosote bush scrub vegetation of the Mojave Desert. *Madrono* 23, (1): 1-13.
- Vasek, F. C., H. B. Johnson, and G. D. Brum. 1975. Effects of power transmission lines on vegetation of the Mojave Desert. *Madrono* 23, (1): 114-30.
- Walters, J. E., and R. M. Hansen. 1978. Evidence of feral burro competition with desert bighorn sheep in Grand Canyon National Park. *Desert Bighorn Council Trans.* 22: 10-16.
- Warren, Elizabeth von Till, and Ralph J. Roske. 1978. *Cultural Resources of the California Desert, 1776-1880: Historic Trails and Wagon Roads*. Bureau of Land Management.
- Waser, N. M., and M. V. Price. 1981. Effects of grazing on diversity of annual plants in the Sonoran Desert. *Oecologia* 50: 407-11.
- Watson, R. T., M. C. Zinyowera, R. H. Moss, and D. J. Dokken. 1998. The regional impacts of climate change. IPCC Report. New York: Cambridge University Press.
- Weaver, R. A. 1959. Effects of burros on desert water supplies. *Desert Bighorn Council Trans.* 3, no. 1-3.
- Webb, R. H., H. C. Raglund, W. H. Godwin, and D. Jenkins. 1978. Environmental effects of soil changes with off-road vehicle use. *Environmental Management* 2(3): 219-233.
- Wehausen, J.D. 1990. *Cattle impacts on mountain sheep in the Mojave Desert: report III*. U. Calif. Interagency Agreement Rept. FG 7468-A1, with CDFG: 52pp.
- Wehausen, J. D. 1988. *Cattle impacts on mountain sheep in the Mojave Desert: report II*. U. Calif. Interagency Agreement Rept. 85/86C-1492, with CDFG: 52pp.



- Wehausen, J. D., and M. C. Hansen. 1986. *Impacts of cattle grazing on bighorn sheep*. U. Calif. Interagency Agreement Rept. C-913 : 29pp + tables and figures.
- Weisenberger, M. E. 1996. Effects of simulated jet aircraft noise on heart rate and behavior of desert ungulates. *Journal of Wildlife Management* 60, no. (1): 52-61.
- West, N. E. 1990. Structure and function of microphytic soil crusts in wildland ecosystems of arid to semi-arid regions. *Advances in Ecological Research* 20:179-223.
- Wilson, L. O. 1968. "Distribution and ecology of the desert bighorn sheep in southeastern Utah." M.S. Thesis, Utah State Univ.
- Woodburne, M.O. 1979. Fossil Vertebrates in the CDCA. Unpublished manuscript.
- Woodbury, A. M., and R. Hardy. 1948. Studies of the desert tortoise, *Gopherus agassizii*. *Ecol Monogr.* 18:146-200.
- Woodman, A. P. 1983. Effects of Parker 400 off-road race on desert tortoise habitat in the Chemehuevi Valley, California. *Proc. Desert Tortoise Council Symp.* 1983:69-79.
- Wylie, T. C., and J. W. Bates. 1979. Status of desert bighorn sheep in Canyonlands National Park, 1978. *Desert Bighorn Council Trans.* 23: 79-80.
- Zeiner, D. C., W. F. Laudenslayer, and K. E. Mayer (Ed.). 1988. *California's Wildlife, Volume I: Amphibians and Reptiles*. California Dept. of Fish and Game. 272pp.

## Glossary

**Accelerated Erosion:** Soil loss above natural levels resulting from human activities.

**Action plan:** A plan designed to provide details on a short-term activity (e.g., bighorn sheep transplant, prescribed burn).

**Activity plan:** A detailed plan for managing a single resource program or a given area. The need for an activity plan is usually identified in a land use plan.

**Adverse Effect (cultural Resources):** Alternation of the characteristics which contribute to the use(s) determined appropriate for a cultural resource or which qualify a cultural property for the National Register to such a degree that the appropriate use(s) are diminished or precluded or the cultural property is disqualified from National Register eligibility. Criteria in the regulations of the Advisory Council (36 CFR, Part 800) guide the determination of adverse effects.

**Age Class:** An age interval, usually with a 10- to 20-year span, into which a vegetative area is classified (e.g. a 80-100 year old stand of bitterbrush).

**Age Structure:** The distribution of animals among various defined age classes (e.g., 0-1, 1-2, 2-5, 5-10, 10-15, 15-30) used in describing the dynamics of an animal population.

**Air Pollution:** Accumulation of aerial wastes beyond the concentrations that the atmosphere can absorb and which may damage the environment.

**Air Quality Classes:** Classes established by the Environmental Protection Agency (EPA) that define the amount of air pollution considered significant within an area:

- Almost any change in air quality would be considered significant
- Deterioration normally accompanying moderate, well-controlled growth would be considered insignificant.
- Deterioration up to the National Standards would be considered insignificant.

**Alien Plants/Animals:** Species which are not native to the area; also termed “exotic.”

**Allotment:** An area of land designated and managed for the grazing of livestock by one or more livestock operators. It generally consists of public lands, but may include parcels of private and other federal or state owned lands.

**Allotment Categorization:** As an aid to prioritizing grazing allotments for development of management plans, allotments are placed into one of three categories: improve (I), maintain (M), or custodial (C).

**Allotment Management Plan (AMP):** An activity plan for livestock grazing. The plan includes management goals and objectives, supporting facilities, the sequence of actions for achieving objectives, and procedures for evaluating accomplishments.

**Alluvial Fan:** A fan-shaped accumulation of disintegrated soil material deposited by water and located in a position where the water departs from a steep, narrow course to enter upon a flat plain or an open valley bottom.

**Alluvium:** Material, including clay, silt, sand, gravel, or similar unconsolidated sediments deposited by a streambed or other body of running water.

**Ambient Air Quality:** Prevailing condition of the atmosphere at a given time; the outside air.

**Animal Unit (AU):** A measurement of animal numbers based on the equivalent of a mature cow with calf (1000 pounds live weight); roughly one cow with calf, one horse, five sheep, or five deer. One burro equals 0.7 AU.

**Animal Unit Month (AUM):** The amount of forage necessary to support a cow and her calf for one month. One AUM will also support five sheep or goats, a bull, and a horse for one month.

**Appropriate Management Level (AML):** A single number which is the highpoint of an established population range to maintain a thriving natural ecological balance, based on available forage, water, and other resource needs or conflicts (relating to management of wild horses and burros).

**Aquifer:** A water-bearing unit of permeable rock or sediment that is capable of yielding water to wells.

**Area of Critical Environmental Concern (ACEC):** Areas within the public lands where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

**Area of Potential Effect (APE):** Primarily used in analysis of cultural resources.

**Back Country Byway:** A vehicle route that traverses scenic corridors utilizing secondary or back country road systems. National back country byways are designated by the type of road and vehicle needed to travel the byway.

**Biodiversity:** The diversity of living organisms considered at all levels of organization including genetics, species, and higher taxonomic levels, and the variety of habitats and ecosystems, as well as the processes occurring therein.

**Biomass:** The total amount of living plants above the ground in an area at a given time.

**Browse:** *n* That part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption. *vb* To consume.

**Browsers:** Animals that feed primarily on browse.

**Campsite:** A cultural site type representative of temporary habitat areas that usually contain a lithic scatter, evidence of fire use, ground stone, and pottery scatter.

**Candidate Species:** Any species of animal or plant or population thereof for which the U.S. Fish and Wildlife Service (USFWS) currently has on file substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species. Issuance of proposed rules for listing are presently precluded by other higher-priority listing actions.

**Canopy Cover:** The cover of leaves and branches formed by the tops or crowns of plants as viewed from above.

**Carrying Capacity:** Maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year to year on the same area due to fluctuating weather conditions and forage production (see grazing capacity).

**Categories, desert tortoise:** The classification of desert tortoise habitat, applied only to BLM-administered federal lands, for overall management for viable populations of desert tortoise. The system was developed in 1998 through BLM's *Desert Tortoise Habitat Management on Public Lands, A Rangeland Plan*. Category areas were later designated through amendment of the CDCA Plan. Tortoise habitat was assigned according to relative importance, manageability, and population density and trend into three management categories:

- **Category I:** Maintain stable, viable populations and protect existing tortoise habitat values; increase population, where possible.
- **Category II:** Maintain stable, viable populations and halt further decline on tortoise habitat values.
- **Category III:** Limit tortoise habitat and populations declines to the extent possible by mitigating impacts.

**Catastrophic Event:** A large-scale, high-intensity natural disturbance that occurs infrequently (e.g., flood, fire).

**Cave:** Any naturally occurring void, cavity, recess, or system of interconnected passages that occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any mine, tunnel, aqueduct, or other man-made excavation) and which is large enough to serve as cave habitat for wildlife. The term includes any natural pit, sinkhole, or other feature that is an extension of the entrance.

**Climax Vegetation Community:** The final or stable community in a series of successive vegetation states which is self-perpetuating and in dynamic balance with the physical and biotic environment.

**Community:** A group of plants and animals living together in a common area and having close interactions.

**Compensation:** A form of mitigation performed off of the project site.

**Concentration Area (Critical Area):** That portion of a herd area where animals tend to congregate and where forage impacts are most extreme (related to wild horses and burros).

**Conservation Zone:** The aggregate of the following management areas: existing restricted areas including Joshua Tree National Park, Chocolate Mountains Aerial Gunnery Range, and Bureau of Land Management wilderness areas and new proposed DWMAs and Multi-species WHMAs.

**Conservancy:** A non-profit, privately funded organization whose purpose is to acquire lands for conservation of natural elements.

**Consult/consultation:** A cooperative effort established by the Endangered Species Act between Federal agencies and the U.S. Fish and Wildlife Service (USFWS). The purpose is to ensure that agency actions conserve listed species, aid in recovery of listed species, and protect critical habitat.

**Coordinated Resource Management Plan:** A plan for management of one or more allotments that involves all the affected resources (e.g., range, wildlife, and watershed).

**Critical Period:** The time period the entire herd is within the critical area, usually during the hot or dry seasons.

**Critical Habitat:** Habitat designated by the U.S. Fish and Wildlife Service (USFWS) under Section 4 of the Endangered Species Act, under the following criteria (1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features (a) essential to the conservation of the species and (b) which may require special management of protection; or (2) specific areas outside the geographical area occupied by the species at the time it is listed but are considered essential to the conservation of the species.

**Crucial Habitat:** That area designated by BLM that is necessary to the existence, perpetuation, or introduction of one or more special status species during critical periods of their life cycle.

**Cultural Property:** Any definite location of past human activity, habitation, or use identified through a field inventory, historical documentation, or oral evidence. This term may include (1) archeological or historic sites, structures and places; and (2) sites or places of traditional cultural or religious importance to a specific group, whether or not represented by physical remains. Cultural properties are managed by the system of inventory evaluation, protection, and use.

**Cultural Resources:** Those fragile and non-renewable remains of human activities, occupations, and endeavors as reflected in sites, buildings, structures, or objects, including works of art, architecture, and engineering. Cultural resources are commonly discussed as prehistoric and historic values, but each period represents a part of the full continuum of cultural values from the earliest to the most recent.

**Cultural Site:** A physical location of past human activities or events. Cultural resource sites are extremely variable 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. Prehistoric and historic sites, which are recorded as cultural resources, have sociocultural or scientific value and meet the criterion of being more than fifty years old.

**Delisting:** The process of removing a species from the list of threatened and endangered species. See also *recovery*.

**Deme:** A subgroup of a metapopulation. In this Plan it mainly applies to large animals such as bighorn sheep and deer.

**Density:** The number of organisms per unit area.

**Desert Advisory Council:** See Resource Advisory Council.

**Desert Tortoise Recovery Plan:** Recovery plan written by the U.S. Fish and Wildlife Service (USFWS), specific to the listing of the desert tortoise.

**Designated Right-of-Way Corridor:** A parcel of land, usually linear in shape, that is identified through Secretarial Order in a land use plan or by other management decision as a preferred location for existing and future rights-of-way grants.

**Desired Beneficial Use:** The use of water that is deemed beneficial and desirable. Guidance for making determinations is contained in the Clean Water Act (Federal), Executive Order 12088, Porter-Cologne Act (California), Clean Water Act (Nevada), and Memorandum of Understanding between the California Water Resource Control Board, BLM, and others.

**Diversity:** Physical, biological, or cultural variety.

**Dual-sport event:** a motorcycle event in which vehicles must be licensed for street use and have a State off-highway vehicle tag. These events are low-speed, non-competitive, touring events.

**Early Seral Stage:** A plant community with a species composition which is 0-25 percent of the potential natural community one would expect to find on that ecological site.

**Ecological Site:** A kind of land with a specific potential natural community and physical site characteristics differing from other kinds of land in its ability to produce vegetation and to respond to management.

**Ecological Status:** The state of vegetation and soil condition of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree to which the kinds, proportions, and amounts of plants in the community resemble that of the potential natural community. If classes are used, they should be described in ecological rather than utilitarian terms. Soil status is a measure of present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion.

**Ecosystem:** A complex, self-sustaining natural system that includes living and non-living components of the environment and the circulation of matter and energy between organisms and their environment.

**Endangered Species:** as defined in the Federal Endangered Species Act, any species which is in danger of extinction throughout all or a significant portion of its range. For terrestrial species, the USFWS determines endangered status.

**Energy Flows:** Pertaining to the flow of energy through an ecosystem; usually described as an “energy pyramid.” The rates of energy flow can vary on rangelands in both space and time. For example, sunlight energy is captured and converted into carbohydrates by green plants (producers) through photosynthesis; deer (primary consumers) eat the plants; coyotes (secondary consumers) eat deer; and eagles (tertiary consumers) eat coyotes.

**Environmental Assessment (EA):** A public document for which a federal agency is responsible that serves to (1) briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement or a finding of no significant impact; (2) aid an agency's compliance with the National Environmental Policy Act (NEPA) when no Environmental Impact Statement is necessary; (3) facilitate the preparation of a statement when one is necessary. An EA includes brief discussions of the need for the proposal and of the environmental impacts of the proposed action and other alternatives.

**Environmental Consequence:** A temporal or spatial change in the human environment caused by an act of man. The change should be (1) perceptible, (2) measurable, and (3) relatable through a change agent to a proposed action or alternative. A consequence is something that follows an antecedent (as a cause or agent). Consequences are synonymous with impacts and effects.

**Environmental Impact Statement:** A written analysis of the impacts on the natural, social, and economic environment of a proposed project or resource management plan.

**Ephemeral forage:** Part-time or seasonal forage; forage produced by annual forage species.

**Ephemeral range:** Grazing lands that do not consistently produce forage but periodically provide annual vegetation as livestock forage.

**Erosion:** Detachment and movement of soil from the land by wind, water, or gravity.

**Evaluation (Cultural Resources):** The analysis of cultural resource inventory records, the application of professional judgement to identify characteristics that contribute to possible uses for recorded cultural resources, and the recommendation of appropriate use(s) for each resource or group of resources. National Register eligibility criteria, 36 CFR part 60, are interpreted through or with reference to BLM evaluation criteria.

**Exclosure:** a fence that completely surrounds a relatively small area (e.g., a wetland or research plot) to exclude large non-native animals such as cattle and burros.

**Existing Right-of-Way Corridor:** See Designated Right-of-Way Corridor.

**Exotic Species:** A species of plant or animal that is not native to the area where it is found. Any species that is not indigenous, native, or naturalized.

**Extensive Recreation Management Areas (ERMAs):** Areas where recreation is unstructured and dispersed and where minimal recreation-related investments is required. ERMAs provide recreation visitors the freedom of choice with minimal regulatory constraint.

**Federal Land:** Land owned by the United States, without reference to how the land was acquired or which Federal Agency administers the land, including mineral and coal estates underlying private surface.

**Federal Land Policy and Management Act of 1976 (FLPMA):** Public Law 94-579, which gives the BLM legal authority to establish public land policy, to establish guidelines for administering such policy, and to provide for management, protection, development, and enhancement of the public land.

**Fire Management:** The integration of fire protection, prescribed burning, and fire ecology knowledge into multiple-use planning, decision making, and land management activities.

**Forage:** Browse and herbage which are available and can provide food for animals or be harvested for feeding.

**Forage Utilization:** An index to the extent forage is used. Utilization classes range from slight (less than 20 percent) to severe (more than 80 percent).

**Forb:** (1) Any herbaceous plant other than those in the Gramineae (true grasses), Cyperaceae (sedges), and Juncaceae (rushes) families; i.e. any non-grasslike plant having little or no woody material on it; or (2) a broad-leaved plant whose above-ground stem does not become woody or persistent.

**Fundamentals of Rangeland Health:** As described in 43 CFR 4180; the conditions in which rangelands are in properly functioning physical condition, ecological processes are supporting healthy biotic populations and communities, water quality is meeting state standards and BLM objectives, and Special Status Species habitat is being restored or maintained.

**General plans:** a fundamental policy document for a local government (i.e., county or city) usually including a plan establishing zones of allowable land uses and intensity of use (e.g., residential, commercial, industrial, open space).

**Grass:** Any of a family of plants with narrow leaves, jointed stems, and seed-like fruit.

**Grazing Capacity:** The maximum stocking rate for grazing animals possible without inducing damage to vegetation or related resources.

**Grazing Preference:** The total number of AUMs of livestock grazing on public lands apportioned and attached to base property owned or controlled by a permittee or lessee. Active preference combined with suspended non-use make up total grazing preference.

**Ground Cover:** Small rocks, litter, basal areas of grass and forbs, and aerial coverage of shrubs that provide protection to the soils surface (i.e., in contrast to bare ground).

**Ground Water:** Water beneath the land surface, in the zone of saturation.



**Guidelines for Livestock Grazing:** Livestock grazing management tools, methods, strategies, and techniques designed to maintain or achieve healthy public lands, as defined by the Standards for Rangeland Health.

**Gully Erosion:** Removal of soil leading to formations of relatively large channels or gullies cut into the soil by concentrations of runoff.

**Guzzler:** A general term covering guzzler, wildlife drinker, or tenaja. A natural or artificially constructed structure or device to capture and hold naturally flowing water, making the water accessible to small and/or large animals. Most guzzlers involve above- or below-ground piping, storage tanks, and valves. Tenajas are natural depressions in rock which trap and hold water. At some tenajas, steps are sometimes added to improve access and reduce mortality from drowning.

**Habitat:** The natural environment of a plant or animal.

**Habitat Conservation Plan (HCP):** a comprehensive planning document pursuant to Section 10(a)(2) of the Endangered Species Act that is a mandatory component of an incidental take permit for a project with no Federal nexus. Also called Multi-species Conservation Plan.

**Habitat Management Plan: (HMP):** An activity plan for wildlife/plant resources for a specific geographical area of public land. It identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

**Habitat Requirements:** A specific set of physical and biological conditions that surround a single species, a group of species, or a community of species upon which the species or associations are dependent for their existence. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

**Heavy Use:** Indicates that 60 to 80 percent of the year's forage production has been eaten or destroyed by grazing animals.

**Herbaceous:** Vegetation with little or no woody component; non-woody vegetation such as grasses and forbs.

**Herd Area (HA):** (Related to wild horses and burros.) The geographic area identified as having been used by a wild horse or burro herd as its habitat in 1971.

**Herd Management Area (HMA):** (Related to wild horses and burros.) Area or areas established within the herd area for the maintenance of wild horses and burros.

**Herd Management Area Plan (HMAP):** (Related to wild horses and burros.) A plan approved by an authorized officer for a specific geographical area or areas of public lands which identifies how wild horse or burro herds will be managed. The plan should identify use areas and habitat, population and habitat objectives, the sequence of actions for achieving objectives, and procedures for evaluating accomplishments.

**Historical Cultural Resources:** Historical Cultural Resources include all mines, ranches, resorts, trails, railroads, towns, and other evidence of human use from the entrance of the Spanish to 1938.

**Indicator:** Quantitative measure of an ecosystem element which is used to describe the condition of an ecosystem; changes in indicators over relatively short periods of time are used to measure effects of management.

**Incidental take:** That take which is incidental to the pursuit of an otherwise legal activity. Legal incidental take is set forth by the U.S. Fish and Wildlife Service in a biological opinion under Section 7 of the Endangered Species Act.

**Isolated Tract:** A parcel of public lands surrounded by non-federal lands.

**Key Area:** A relatively small portion of land selected, based on its location, use, or grazing value, as a location for monitoring the effects of grazing use. It is assumed that key areas, if properly selected, will reflect the effects of current grazing management over all or a part of a pasture, allotment, or other grazing unit.

**Key (Forage) Species:** (1) Species that, because of their importance, must be considered in a management program; or (2) forage species whose use shows the degree of use of associated species.

**Landscape (Scale):** An area of interacting ecosystems where patterns are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Applied in terms of 100's to 1000's of acres.

**Land Disposal:** A transaction that leads to the transfer of title of public lands from the Federal Government.

**Late Seral:** A plant community with a species composition which is 51 to 75 percent of the potential natural community one would expect to find on that ecological site.

**Leasable Minerals:** Minerals such as coal, oil shale, oil and gas, phosphate, potash, sodium, geothermal resources, and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.

**Lithic:** A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, and chips, rather than ground stone.

**Lithic Scatter:** A prehistoric cultural site type where flakes, cores, and stone tools are located as a result of the manufacture or use of the tools.

**Locatable Minerals:** A mineral subject to location under the 1872 mining laws. Examples of such minerals would be gold, silver, copper, and lead, as compared to oil and natural gas, which are leasable minerals.

**Management Framework Plan (MFP):** A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved

for each class of land use. An MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision making.

**Management Oversight Group (MOG):** a group of high-level management representatives from U.S. Fish and Wildlife Service, BLM, National Park Service, Biological Resources Division of U. S. Geological Survey, state wildlife agencies, Edwards Air Force Base, China Lake Naval Weapons Center, the Army National Training Center (Fort Irwin), and Twentynine Palms Marine Corps Base. The MOG establishes overall policy for tortoise management.

**Manipulative Research:** Research that introduces disturbance and other invasive methods such as digging and removing soil, clipping, burning, and removing vegetation (see Research).

**Metapopulation:** An interdependent set of subgroups or a species. In the case of mammals, the subgroups are connected by corridors.

**Metallic Minerals:** Those minerals whose native form is metallic or whose principle products after refinement are metallic.

**Mid Seral Stage:** A plant community with a species composition which is 26 to 50 percent of the potential natural community one would expect to find on that ecological site.

**Mineral Entry:** The location of mining claims by an individual to protect his right to a valuable mineral.

**Mineral Withdrawals:** Closure of land to mining laws, including sales, leasing, and location, subject to valid existing rights.

**Mitigation:** in general, a combination of measures to lessen the impacts of a project or activity on an element of the natural environment or various other cultural or historic values; more specifically, as defined by the Council on Environmental Quality in its regulations for implementing NEPA, mitigation includes: (a) avoiding the impact, (b) minimizing the impact, (c) rectifying (i.e., repairing, rehabilitating, or restoring) the impact (d) reducing or eliminating the impact through operations during the life of the project, or (e) compensating by replacing or substituting resources (40 CFR Section 1508.20).

**Moderate Use:** Indicates that 40 to 60 percent of the current year's forage production has been eaten or destroyed by grazing animals.

**Monitoring:** The timed collection of information to determine the effects of resource management and to identify changing resource conditions or needs.

**Mortality Rate:** The number of deaths per 100 population of a group that must be subtracted from the observed recruitment (e.g., foals/100 adults) to determine accurate population projections.

**Multiple Use:** Describes a fundamental mandate to manage lands, uses, and resource values in a manner that promotes social and/or economic uses by the public in combination with protection of cultural resources and conservation of biological resources on a sustained yield basis. Relative resource values are considered but

are not necessarily the combination of uses that will give the greatest potential economic return or the greatest unit output.

**Multi-species Conservation Plan:** Same as Habitat Conservation Plan.

**National Ambient Air Quality Standards (NAAQS):** National standards established under the Clean Air Act by the Environmental Protection Agency (EPA). Prescribed levels of pollution in the outdoor air which may not be exceeded. There are two levels of NAAQS: primary, set at a level to protect the public health from air pollution damage; and secondary, set at a level to protect public welfare from air pollution damage.

**National Environmental Policy Act (NEPA) of 1969:** A law enacted on January 1, 1970, that established a national policy to maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans. It established the Council on Environmental Quality for coordinating environmental matters at the federal level and to serve as the advisor to the President on such matters. The law made all federal actions and proposals that could have significant impact on the environment subject to review by federal, state, and local environmental authorities.

**National Historic Preservation Act (NHPA):** The primary federal law providing for the protection and preservation of cultural resources. NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation, and the State Historic Preservation Officers.

**National Register of Historic Places (NRHP):** A list of buildings, sites, districts, structures, and objects significant in American history, architecture, archeology, and culture maintained by the Secretary of the Interior. Expanded as authorized by Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 462) and Section 101(a) (1) (A) of the National Historic Preservation Act.

**Native (indigenous) Species:** A species of plant or animal that naturally occurs in an area and that was not introduced by humans.

**Nonpoint Pollution:** Pollution from scattered sources, as opposed to pollution from one location, e.g., a manufacturing plant.

**Non-Use:** Animal Unit Months (AUMs) that are normally available for use, but are not grazed through either the permittee's or BLM's request. Non-use is applied for and authorized on an annual basis.

**Nutrient Cycle:** Circulation of chemical elements, such as carbon or nitrogen, in specific pathways from the non-living (abiotic) parts of the environment into the organic substances (plants and animals), and then back again into abiotic forms.

**Objective:** A measurable description of a desired future condition that specifies what is to be accomplished, location, and timeframe.

**Obligate:** Restricted to a particular set of environmental conditions (as opposed to facultative).

**Off-Highway Vehicle (OHV):** Any motorized vehicle designed for cross-country travel over any type of natural terrain and not restricted to the use of roads.

**Off-Highway Vehicle Designations:** BLM designations used in this document are as follows:

- **Open Areas:** Designated areas and trails where OHVs may operate without restrictions
- **Limited Areas:** Designated areas and trails where the use of OHVs is subject to restrictions such as limits on the number or types of vehicles allowed or the dates and times of use, limit of use to existing roads and trails, or limit of use to designated roads and trails.
- **Closed Areas:** Areas, roads, and trails where the use of OHVs is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

**Overgrazing:** Consumption of vegetation by herbivores beyond the endurance of a plant to survive.

**Passive research:** Research that relies on observation and largely non-disturbing methods (see Research).

**Pedestaling:** The occurrence of plants or rocks on pedestals, which means that the soil has eroded away from the base of the plant or rock and leaving it slightly elevated above the eroded surface of the soil. The height of the pedestals and the degree of root exposure can serve as indicators of the degree of soil loss.

**Perennial Plant Species:** A plant that has a life cycle of three years or more.

**Perennial Stream:** A stream that flows throughout the year for many years.

**Permeability Rate (soil):** The rate at which gases, liquids (water), or plant roots penetrate or pass through a bulk mass of soil or a layer of soil.

**Permittee:** A person or company permitted to graze livestock on public land.

**Permitted Use:** The number of animal unit months (AUMs) available to be grazed (authorized on a grazing permit or lease).

**Petroglyph:** A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

**Phenology:** The study of the time of appearance of characteristic periodic events in the life cycles of organisms in nature and how these events are influenced by environmental factors.

**Pictograph:** A form of rock art created by applying mineral-based or organic paint to rock surfaces.

**Plant Community:** Assemblage of plant populations in a defined area or physical habitat; an aggregation of plants similar in species composition and structure, occupying similar habitats over the landscape (see vegetation type).

**Playa:** The usually dry and very level lake-plain that occupies the lowest part of a closed depression.

**Predator:** An animal that preys on one or more other animals.

**Prescribed Fire (Prescribed Burn):** A controlled wildland fire ignited by humans under specified conditions, to accomplish specific, planned resource objectives. This practice is also known as “controlled burning.”

**Properly Functioning Condition (Riparian-wetlands):** Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to (1) dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; (2) filter sediment, capture bedload, and aid in floodplain development; (3) improve floodwater retention and groundwater recharge; (4) develop root masses that stabilize streambanks against cutting action; (5) develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and (6) support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by land form, soil, water, and vegetation.

**Properly Functioning Condition (Uplands):** Uplands are functioning properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by land form, soil, water, and vegetation.

**Proposed Species:** A species of plant or animal formally proposed by the U.S. Fish and Wildlife Service to be listed as threatened or endangered under the Endangered Species Act.

**Public Land:** Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- Lands located on the Outer Continental Shelf
- Lands held for the benefit of Indians, Aleuts, and Eskimos
- Lands in which the United States retains the minerals, but the surface is private

**Quarter Quad:** one-fourth of a 7½’ quadrangle map

**Range Condition:** The present state of the plant community on a range site in relation to the potential natural plant community for that site.

**Range Improvement:** A structure, development, or treatment used to rehabilitate, protect, or improve the public lands to advance range betterment.

**Range Management:** The science and art of optimizing the returns from rangelands in those combinations most desired by and suitable to society through the manipulation of range ecosystems.

**Range Site:** Rangeland that differs in its ability to produce a characteristic natural plant community. A range Site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differ from other range sites in the kind or proportion of species or in total production.

**Rangeland Condition (Ecological):** The present state of the vegetation on a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for that site. Rangeland Condition is basically an ecological rating of the plant community. Four classes are used to express the degree to which the composition of the present plant community reflects that of the climax:

Condition Class	Range Site
Excellent	76-100
Good	51-75
Fair	26-50
Poor	0-25

**Rangeland Condition Trend:** The direction of change in Rangeland condition.

**Rangewide Plan:** A document entitled *Desert Tortoise Habitat Management on the Public Lands: A Rangewide Plan* and signed by the BLM Director in 1988. It established overall policy for management of desert tortoise habitat on BLM lands in Arizona, California, Nevada, and Utah.

**Raptor:** Any predatory bird (such as falcon, hawk, eagle, or owl) that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for shearing flesh.

**Recovery:** Improvement in the status of a listed species to the point at which listing is no longer appropriate under the criteria set forth in Section 4 of the Endangered Species Act. Also, the process by which species and/or their ecosystems are restored so the species is self-sustaining.

**Recovery criteria:** Objective, measurable criteria which, when met, will lead to a species being removed from the list of threatened and endangered species (i.e., delisting). Recovery criteria are a required element of a recovery plan as specified in Section 4(f)(1) of the Endangered Species Act.

**Recovery Unit:** The general geographic in which recovery effort needs to be directed to provide for the recovery of a species.

**Recreation Opportunity Spectrum:** A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. Six classes are included: Primitive, Semi-primitive Non-motorized, Semi-primitive Motorized, Roaded natural, Rural and Modern urban.

**Recruitment:** Addition to a plant or animal population from all sources, including reproduction, immigration, and stocking.

**Resource Advisory Council (RAC):** A group established pursuant to 43 CFR 1780 and other authorities to advise BLM on resource management issues. In the California Desert District, the California Desert District Advisory Council serves as the RAC.

**Riparian (Zone):** The transition area between an aquatic ecosystem and an adjacent terrestrial ecosystem identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

**Right-of-Way (ROW):** An easement or permit authorizing public land to be used for a specified purpose that generally requires a long, narrow strip of land. Examples include roads, powerlines, and pipelines.

**Recreation Visitor Day:** An aggregation of 12 visitor hours. A visitor hour is the presence of one or more persons on land and water for outdoor recreation for periods totaling 60 minutes. It may be calculated as one person for one hour, two persons for one-half hour, and so on.

**Research:** Systematic inquiry into a subject in order to discover new information or revise facts and theories. Research follows a scientific method and must be repeatable (see Passive Research and Manipulative Research).

**Research Natural Area:** An area where natural processes predominate and which is preserved for research and education. Research Natural Areas must meet the relevance and importance criteria of Areas of Critical Environmental Concern and are designated as Areas of Critical Environmental Concern.

**Rock Art (Petroglyph or Pictograph):** An archaic to modern cultural site type consisting of incised or painted figures such as people, animals, plants, or abstracts on a rock surface.

**Rock Shelter:** A cultural site representative of all periods consisting of an area protected by an overhanging cliff. Often associated with the same materials as a campsite or rock art.

**Runoff:** A general term used to describe the portion of precipitation on the land that ultimately reaches streams; may include channel and non-channel flow.

**Scale:** The degree of resolution used in observing and measuring ecosystem processes, structures, and changes over space and time.

**Season of Use:** The time during which livestock grazing is permitted on a given area, as specified in the grazing permit and/or terms and conditions.

**Section:** One square mile or 640 acres.

**Seeps:** Groundwater discharge areas. In general, seeps have less water flow than a spring.

**Seral Stage (State):** Pertaining to the successional stages of biotic communities. One of a series of biotic communities that follow one another in time on any given ecological site (see Succession).

**Severe Use:** Use in excess of 80 percent.

**Sex Ratio:** The ratio existing between the number of male and female animals within a given herd, band, or population. It is sometimes expressed as the number of males per 100 females.



**Sheet Erosion:** The removal of a fairly uniform layer of soil or materials from the land surface by rainfall or runoff water.

**Short-Term Impact:** Ten years or less; approximately the year 2009.

**Sign (tortoise):** Those elements indicating the presence of desert tortoise in an area, including live tortoise, dead tortoise or shell fragments, burrow, and scat.

**Slight use:** Indicates that 0 to 20 percent of the current year's forage production has been eaten or destroyed by grazing animals.

**Soils:** (a) The unconsolidated mineral material on the immediate surface of the earth that serves as the natural medium for the growth of land plants. (b) The unconsolidated mineral matter of the surface of the earth that has been influenced by genetic and environmental factors including parent material, climate, and topography, all acting over a period of time and producing soil that differs from the parent material in physical, chemical, biological, and morphological properties and characteristics.

**Soil Compaction:** A decrease in the volume of soil as a result of compression stress.

**Soil (Ground) Cover:** The percentage of material, other than bare ground, covering the land surface. Soil cover may include live vegetation, standing dead vegetation, plant litter, cobble, gravel, stones, and bedrock.

**Soil Productivity:** Capacity of a soil to produce biomass through plant growth.

**Soil Series:** A group of soils having genetic horizons (layers) that, except for texture of the surface layer, have similar characteristics and arrangement in the profile.

**Special Recreation Management Area (SRMA):** An area where special management or intensive recreation management is needed. Recreation activity plans are required, and greater managerial investment in facilities or supervision can be anticipated.

**Special Status Species:** Plant or animal species listed as endangered, threatened, candidate, or sensitive by federal or state governments.

**Species:** A fundamental category of plant or animal classification.

**Species Richness:** Number of species, either in total or by some grouping scheme.

**Standards for Rangeland Health:** A description of conditions needed to sustain public land health; relates to all uses of the public lands.

**State Land:** Lands administered by any one of several state agencies.

**Strip-transect:** A survey line of fixed width (usually 0-30 meters) in which a resource is measured (e.g., tortoise sign, plants).

**Succession:** The constantly occurring process of community change; the sequence of communities that replace one another in a given area over time; e.g. progressive development of vegetation after a fire (bare ground) towards its highest ecological expression, the climax community (old growth conifer). Theoretically, it is reasonably directional and, therefore, predictable.

**Suspended Non-Use:** Animal Unit Months (AUMs) withdrawn from authorized use; may potentially be reauthorized for use if range conditions improve.

**Sustainability:** The ability to maintain diversity, productivity, resilience to stress, health, renewability, and yields of desired values, resource uses, products, or services over time in an ecosystem while maintaining its integrity.

**Sustained Yield:** The achievement and maintenance in perpetuity of a high level of annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

**Take:** As defined in Section 3 of the Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct relative to a listed species. Take of a listed species is prohibited by Section 9 of the Endangered Species Act except under permit from the U.S. Fish and Wildlife Service.

**Terms and Conditions:** Mandatory measures contained in a biological opinion from the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act or in a habitat conservation plan signed by USFWS pursuant to Section 10. The measures are mandatory for the authorization of incidental take.

**Territory:** The defended part of an animal's range.

**Threatened Species:** (1) Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and (2) as further defined by the Endangered Species Act of 1973.

**Transition Period:** The period of time between completion and adoption of these standards and guidelines and their being placed in operational effect at the level of individual grazing permit terms and conditions.

**Trap:** A device or site used to capture and perhaps temporarily hold an animal(s).

**Unit Resource Analysis (URA):** A comprehensive display of inventory and analysis of resources data and an analysis of the current use, production, condition, trend, and use potential and opportunity within a planning unit. The term and document structure is no longer a part of current planning procedures, but may still be found in older planning documents that are still applicable.

**Upland:** Land at a higher elevation than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

**Utilization:** The proportion of a year's forage production that is consumed or destroyed by grazing animals.

**Vegetative Community Type:** Refers to the species or various combinations of species which dominate or appear to dominate an area of rangeland or habitat (see Plant Community).

**Vegetation Status:** The expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential plant community (see Early Seral, Mid-seral, Late Seral, and Potential Plant Community)

**Viable populations:** Populations of plants and/or animals that persist for a specified period of time across their range despite normal fluctuations in population and environmental conditions.

**Viewshed:** The landscape that can be directly seen under favorable atmospheric conditions from a viewpoint or along a transportation corridor.

**Vigor (Plant):** Pertaining to characteristics such as a mix of plants with normal growth on the basis of height, color, seed production, rhizome and stolon production, and annual biomass production.

**Visual Resources:** Visible features of the landscape including land, water, vegetation, and animals.

**Visual Resource Management (VRM):** The planning, designing and implementation of management objectives for maintaining scenic value and visual quality on public lands.

**Water:** A natural or artificial water source or site (see Guzzler).

**Wetlands:** An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.

**Wilderness Area:** An area of federal land withdrawn by act of Congress pursuant to the Wilderness Act to be protected in its natural condition for the use and enjoyment of the people of the United States, maintaining its primeval character and providing for visitor solitude.

**Wilderness Characteristics:** Characteristics of a Wilderness Area as identified by Congress in the 1964 Wilderness Act; namely, size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archeological, historical, ecological, scenic, or other features. It is required that the area (1) possess at least 5,000 or more contiguous acres or be of a size to make practical its preservation and use in an unimpaired condition; (2) be substantially natural or generally appear to have been shaped primarily by the forces of nature, with the imprint of man being substantially unnoticeable; and (3) have either outstanding opportunities for solitude or for a primitive and unconfined type of recreation.

**Wild Free-Roaming Horse or Burro:** Any and all unbranded and unclaimed horses, burros, and their progeny that have used public lands on or after December 15, 1971, or that do use these lands as all or part of their habitat.

**Wild Horse Area:** An area of the public lands which provides habitat for one or more wild horse herds.

**Wildlife:** All living vertebrate and invertebrate fauna that exists or potentially exists in an area.

**Wildlife Habitat Management Area:**

**Withdrawal:** The act of withholding 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 in order to maintain other public values in the area or reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of Federal land, other than property governed by the Federal Property and Administrative Services Act, from one department, bureau, or agency to another department, bureau, or agency.

**Woody Riparian Species:** Plant species consisting of wood such as trees, shrubs, or bushes found in riparian-wetland areas.

(This page intentionally left blank.)

### Acronyms and Abbreviations

<b>ACEC</b>	Area of Critical Environmental Concern
<b>ACHP</b>	Advisory Council on Historic Preservation
<b>ADC</b>	Animal Damage Control
<b>AIRFA</b>	<i>American Indian Religious Freedom Act of 1978</i>
<b>AML</b>	Appropriate Management Level
<b>AMP</b>	Allotment Management Plan
<b>APE</b>	Area of Potential Effect
<b>AQCR</b>	Air Quality Control Regions
<b>AQS</b>	Air Quality Standard
<b>ATV</b>	All Terrain Vehicle
<b>AUM</b>	Animal Unit Month
<b>BLM</b>	Bureau of Land Management
<b>BMP</b>	Best Management Practices
<b>BO</b>	Biological Opinion
<b>BOR</b>	Bureau of Reclamation
<b>C&amp;MAU</b>	Classification and Multiple Use Act
<b>CEQ</b>	Council on Environmental Quality
<b>CEQA</b>	<i>California Environmental Quality Act</i>
<b>CDCA</b>	California Desert Conservation Area
<b>CDFG</b>	California Department of Fish and Game
<b>CDPA</b>	<i>California Desert Protection Act of 1994</i>
<b>CESA</b>	<i>California Endangered Species Act</i>
<b>CFR</b>	Code of Federal Regulations
<b>CM</b>	Current Management
<b>CMAGR</b>	Chocolate Mountains Aerial Gunnery Range
<b>CMP</b>	Coordinated Management Plan
<b>CNDDDB</b>	California Natural Diversity Data Base
<b>CNPS</b>	California Native Plant Society
<b>CMP</b>	Coordinated Resource Management and Planning
<b>CVAG</b>	Coachella Valley Association of Governments
<b>DAG</b>	Desert Access Guide
<b>DEIS</b>	Draft Environmental Impact Statement
<b>DLE</b>	Desert Land Entry
<b>DOD</b>	Department of Defense
<b>DOI</b>	Department of the Interior
<b>DRP</b>	Draft Resource Plan
<b>DTRP</b>	<i>Desert Tortoise Resource Plan June 1994</i>
<b>DWMA</b>	Desert Wildlife Management Area
<b>EA</b>	Environmental Assessment
<b>EIS</b>	Environmental Impact Statement
<b>EMS</b>	Environmental Management Strategy
<b>EPA</b>	Environmental Protection Agency

<b>ESA</b>	<i>Endangered Species Act of 1973</i>
<b>FEIS</b>	Final Environmental Impact Statement
<b>FESA</b>	<i>Federal Endangered Species Act</i>
<b>FLPMA</b>	<i>Federal Land Policy and Management Act</i>
<b>FMAP</b>	Fire Management Activity Plan
<b>FY</b>	Fiscal Year
<b>GEM</b>	Geology, Energy, Minerals (Survey)
<b>GIS</b>	Geographic Information Systems
<b>GMP</b>	General Management Plan
<b>HAZMAT</b>	Hazardous Material
<b>HCP</b>	Habitat Conservation Plan
<b>HMA</b>	Habitat/Herd Management Area
<b>HMAP</b>	Herd Management Area Plan
<b>HMP</b>	Habitat Management Plan
<b>IBLA</b>	Interior Board of Land Appeals
<b>JTNP</b>	Joshua Tree National Park
<b>LWCF</b>	Land and Water Conservation Fund
<b>MFP</b>	Management Framework Plan
<b>MOA</b>	Memorandum of Agreement
<b>MOG</b>	Management Oversight Group
<b>MOU</b>	Memorandum of Understanding
<b>MSA</b>	Management Situation Analysis
<b>MSCP</b>	Multi-species Conservation Plan
<b>MUC</b>	Multiple-Use Classification
	MUC C    Controlled
	MUC I    Intensive
	MUC L    Limited
	MUC M    Moderate
<b>MWD</b>	Metropolitan Water District of Southern California
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NECO</b>	Northern and Eastern Colorado Desert Plan
<b>NEMO</b>	Northern and Eastern Mojave Plan
<b>NEPA</b>	<i>National Environmental Policy Act of 1969</i>
<b>NHPA</b>	<i>National Historic Preservation Act of 1966</i>
<b>NNL</b>	National Natural Landmark
<b>NOI</b>	Notice of Intent
<b>NPS</b>	National Park Service
<b>NRHP</b>	National Register of Historic Places
<b>NWR</b>	National Wildlife Refuge
<b>OHV</b>	Off-Highway Vehicle
<b>ONA</b>	Outstanding Natural Areas
<b>PFC</b>	Proper Functioning Condition
<b>PL</b>	Public Law
<b>RAMP</b>	Recreation Activity/Area Management Plan
<b>R&amp;PP</b>	Recreation and Public Purpose (Act)

<b>RNA</b>	Research Natural Area
<b>RPS</b>	Rangeland Program Summary
<b>ROD</b>	Record of Decision
<b>ROS</b>	Recreation Opportunity Spectrum
<b>ROW</b>	Right-of-Way
<b>RU</b>	Recovery Units
<b>SCS</b>	Soils Conservation Service
<b>S&amp;G</b>	Standards and Guidelines
<b>SHPO</b>	State Historic Preservation Office
<b>SLC</b>	State Lands Commission
<b>SMARA</b>	<i>Surface Mining and Reclamation Act of 1976</i>
<b>T&amp;E</b>	Threatened and Endangered (Species)
<b>UPA</b>	Unusual Plant Assemblages
<b>URTD</b>	Upper Respiratory Tract Disease
<b>US</b>	United States
<b>USC</b>	United States Code
<b>USDA</b>	United States Department of Agriculture
<b>USDI</b>	United States Department of the Interior
<b>USGS</b>	United States Geologic Service
<b>USFS</b>	United States Forest Service
<b>USFWS</b>	United States Fish and Wildlife Service
<b>USMC</b>	United States Marine Corps
<b>WH&amp;B</b>	Wild Horses and Burros
<b>WHMA</b>	Wildlife-Habitat Management Area



(This page intentionally left blank.)